

Protocol-Structured Discussions to Improve Teaching and Interdisciplinary Learning:

A School's Journey to School Reform

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**Abstract**

School divisions and principals are tasked with meeting state standards and federal annual measurable objectives (AMOs), as well as with closing the achievement gaps that exist in schools. To accomplish this mission, organizational learning, specifically the use of protocol-structured discussions, has become a fundamental component of school reform processes. Protocols to examine professional practice, engage in data-driven decision-making (DDDM), and look at student work have gained more notoriety as school reform strategies in K-12 education.

The purpose of this single-case embedded common qualitative case study was to examine and describe how Uprising Elementary School (UES), in the mid-Atlantic part of the United States, made changes during the school reform process that benefited students from 2012 to 2015. Qualitative data were collected through interviews, focus groups, observations, document reviews, and reflexive notes. I used NVivo 11 Pro to store the data transcripts by creating specific nodes and the constant comparative analysis method to determine themes in the data collected. During triangulation, the multiple sources of data of data kept the qualitative data reliable and accurate. The six findings included: (a) organization of the staff into organizational learning structures created a uniform system of continuous improvement, (b) leadership was a key element influencing the overall success of UES, (c) protocols can be organized into a professional learning model to promote organizational learning, (d) the professional learning model had a

profound impact on organizational learning and teacher leadership, (e) the implementation of protocols had a positive effect on school culture, and (f) the strategic implementation of protocol-structured discussions as a school reform strategy transformed learning.

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**General Audience Abstract**

School-based leaders and teachers have the most difficult job in public education, as they are tasked with meeting federal and state standards by raising test scores. To accomplish this task, they are expected to find ways to meet the needs of all students by working collectively. One of the strategies schools are using as a school reform strategy is highly structured discussions using a specific protocol.

The purpose of this case study was to examine and describe how one school made changes during the school reform process that benefited students from 2012 to 2015. This study involved an analysis of data from interviews and focus groups with administrators and teachers, as well as observations with two collaborative learning teams (CLTs). The data collected from these sources provided a better understanding of the work that was being done at the school to affect professional learning and student achievement. Results indicated the success of the school was based on six findings: (a) organizing staff as a group to create one structure for continuous improvement, (b) leadership was a key element influencing the overall success of the school, (c) organizing protocols to create a model for professional learning, (d) the professional learning model had an impact on teacher leadership, (e) implementing protocols had a positive effect on school culture, and (f) implementing protocols as a school reform strategy changed learning. Further research is needed in the development of a strategic process to look at student work collectively to examine teaching practices as a school reform strategy.

## **DEDICATION**

This dissertation is dedicated to my parents, Jennifer and Lennox Joshua, and my late grandfather, Edward Williams, also known as “Papa Edit.” Papa, you raised me from birth until I immigrated to the United States of America from the Caribbean island of St. Lucia on November 12, 1989, at the tender age of 14 to be with my mother. I remember the last words you shared with me to this day. You said, “Clint Boy, please make me proud. Make sure you stay in school and listen to your mother.” Well Papa Edit, I did it in a big way. Not only did I stay in school, I stayed until I achieved the highest degree I could earn. I listened to mom and I am so glad she is here to see me walk across the stage during graduation for the last time. I wish you were here but I know that your spirit from heaven is shining brightly upon me on this very special day.

Thank you to my parents for instilling in me some very strong core values. The most important one being that “nothing is given to you, you must earn it.” You both worked tirelessly to provide for my brothers, Jamaal, Nathaniel, and Kareem, and my sister, Jewel. You pushed us to follow our dreams and open doors to dream about college even though you both did not have that opportunity. Mom, you have always been a solid rock for me. You are a survivor! I am inspired by your strength, love, and spirituality. You always say that “God takes care of his soldiers.” I am glad I learned these simple words from you. Dad, thank you for keeping this family together during the turbulent years. You never treated me like a step son. You are the only father that I know. It is because of your support, commitment, and most importantly your love for me that I stand here as the proud son and father you taught me to be. May the spirits of the ancestors continue to bless both of you.

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“To each there comes in their lifetime a special moment when they are figuratively tapped on the shoulder and offered the chance to do a very special thing, unique to them and fitted to their talents. What a tragedy if that moment finds them unprepared or unqualified for that which could have been their finest hour.” — Winston Churchill

That moment for me came in 2003 when my wife, Jehovanni, persuaded me to seek a degree in administration and supervision. I was content as a seventh-grade civics and economics teacher. She saw a talent in me that I did not know existed. Thirteen years later, here I am completing the journey she set me on.

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Life coach Douglas Woods said, “Each of us holds many values . . . Some . . . superficial, transitory, or fitting solely the moment in which we find ourselves. Others are more fixed and stay with us through our life; these are our core values.” This dissertation would not have been possible without the encouragement and support of my family and some very special friends.

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## **CHAPTER I: INTRODUCTION**

### **Background of the Study**

From the establishment of the first American public school in the 17th century in Boston, the Boston Latin School (Orstein & Levine, 1985; Urban & Wagoner, 2009), to the enactment of the Every Student Succeeds Act (ESSA) of 2015, the U.S. public school system continues to experience dramatic changes. During the progressive movement in the late 1890s to 1930s, Dewey (1938) suggested the need for sweeping changes in educational thought, specifically in the area of traditional and progressive education. Dewey believed traditional education was too strict and left little regard for the learner's interest, while progressive education was too spontaneous and too individualized. As a result of these beliefs, Dewey proposed a new theoretical perspective in education based on the principles of continuity and interaction (pp. 25-33). According to Dewey, "those who adhered to the established system [traditional education] needed merely a few fine-sounding words to justify practices" (p. 29). In order to combat these traditional practices, those who believed in progressive education developed an urgent degree based on philosophy of experience (Dewey, 1938).

African Americans who had suffered for years in the traditional education system took a stand. In the 1950s and 1960s, African Americans' fight for equal opportunities in the educational system was critical to educational change. In 1965, President Lyndon Johnson signed the Elementary and Secondary Education Act (ESEA, 1965) into law. President Johnson believed that full educational opportunity should be a priority and posited, "Every child must have the best education our nation can provide" (U.S. Department of Education, 2015b, p. 7). The ESEA provided services to low-income

students by offering federal grants to states and provided scholarships to low-income college students. It also provided additional funding to create special education centers as well as provided federal grants to states to improve the overall quality of elementary and secondary education.

The U.S. public education system took a dramatic turn with the findings of James Coleman's education report entitled, *Equality of Educational Opportunity* (Coleman et al., 1966). This report "was a landmark not only in its empirical findings, but also in its conception of what equal opportunity meant" (Gamoran & Long, 2013, p. 17). In 1975, Congress passed the Education for All Handicapped Children Act, which was later amended in 1990 under the Individuals with Disabilities Education Act (IDEA). The intent of this act was to provide equal access in mainstream education to children with disabilities. The introduction of PL 107-110, also known as the No Child Left Behind (NCLB) Act of 2001, brought about more sweeping changes to education in the United States during the tenure of President George W. Bush. Under the provisions of NCLB, a new era in public education began. Accountability, data reporting, public disclosure, and sanctions for schools that did not meet measurable student outcomes dominated the headlines (Lasky, Schaffer, & Hopkins, 2008). The U.S. school system experienced another major shift a decade after NCLB in 2013, when President Barack Obama began implementing the ESEA waivers to NCLB. These waivers were granted "in exchange for rigorous and comprehensive State-developed plans designed to improve educational outcomes for all students, close achievement gaps, increase equity, and improve the quality of instruction" (U.S. Department of Education, 2015a, p. 1). Currently, 43 states, the District of Columbia, and Puerto Rico have been granted ESEA flexibility waivers.

These laws forced American schools to change significantly (U.S. Department of Education, 2015a). On December 10, 2015, President Barack Obama signed into law the ESSA to replace NCLB, thus signifying another dramatic change in American public education.

One of the most profound modern research studies that continues to inspire me as an educator is the *Equality of Educational Opportunity* report (Coleman et al., 1966). I am intrigued by the findings of racial and ethnic gaps in student achievement because I am the principal of a Title I school where 78% of the students are considered economically disadvantaged, 54% are of Hispanic descent, 20% are of African ancestry, and 45% are considered English language learners (ELLs). Coleman et al.'s findings showed that among students who stayed in school until the 12th grade, nearly 85% of Black students scored below the average of White students (Gamoran & Long, 2013). Trend data from the National Assessment of Educational Progress (NAEP) showed that the Black–White gap in NAEP reading scores for all 9-year-olds in schools across the United States was 32 points in 1980 (Bohrnstedt, Kitmitto, Ogut, Sherman, & Chan, 2015). The Black–White gap in the NAEP mathematics scores for 9-year-olds followed a similar pattern, with a gap of 31 points in 1978 (Bohrnstedt et al., 2015). Despite all of the legislation that has been enacted since 1978 to address the gap between White students and students from minority groups, the data continue to show that the gap remains.

On September 24, 2015, the NAEP released the most recent results on the fourth grade (i.e., 9-year-olds) mathematics and language arts assessment for all students (NAEP, 2015). The scale value ranges from 0 to 500. Trend data for the fourth grade



NAEP mathematics showed that White students continue to outperform Black students on the NAEP mathematics and language arts assessments even though they continue to perform below the expected level to be considered proficient. This is similar to the NAEP trend data report from 1978 to 2007. In order to be considered proficient, students had to score between 249 and 282 (NAEP, 2015). In 2015, the average scale score for White students was 248. The performance of Black students fluctuates at the basic level. In order to be considered at the basic level, students had to score between 214 and 248 (NAEP, 2015). In 2015, the average scale score for Black students was 224.

In reading, the Black–White student performance on the NAEP fourth grade (i.e., 9-year-olds) assessment showed a similar trend. While both groups continued to perform below the expected proficiency level of 238 to 268, the data clearly show that Black students were performing significantly below the expected level. Black students continued to perform at the basic level of 208 to 238 when compared to their White peers (NAEP, 2015). Table 1 shows the discrepancy between Black and White students on the NAEP mathematics and reading assessments.

Table 1

*Black–White Gap on the 2015 NAEP Trend Data Report in Mathematics and Reading Assessments*

Subject	Years	Average Scale Scores for Whites	Average Scale Scores for Blacks	Difference
Math	1978	223	192	31
	2007	248	222	26
	2015	248	224	24
Reading	1980	263	231	32
	2007	230	203	27
	2015	232	206	26

When compared to the 1980 Black–White trend data report, the 2015 NAEP report showed the Black–White gap decreased from a 32-point difference to a 26-point difference in reading (Bohrnstedt et al., 2015). In math, the gap decreased from a 31-point difference in 1978 to a 24-point difference. In the state where the current research study was conducted, the 2007 Black–White gaps in reading and mathematics were 20 and 23, respectively (Bohrnstedt et al., 2015). Despite all of the legislation, funding, and programs that have been developed to close the Black–White achievement gap, there remains a major gap in student performance in reading and mathematics. The question is: As a nation, why have we not closed the Black–White gap at a more rapid rate?

In order for public school educators to combat the Black–White gap and address the educational inequalities that continue to persist, they must immerse themselves in organizational learning (Brown & Campione, 1994; Edmondson & Moingeon, 1998; Glassman, 1973; Hedberg, 1981; Lave & Wenger, 1991; Rogoff, 1994; Weick, 1976; Wenger, 1998; Wenger & Snyder, 2000). Specifically, schools should use data-driven decision-making (DDDM; Boudette, Murnane, City, & Moody, 2005; Breiter & Light, 2006; Brunner et al., 2005; Hamilton et al., 2009; Ikemoto & Marsh, 2007; Mandinach, 2012; Mandinach & Honey, 2008; Mandinach, Honey, & Light, 2006) to help the organization learn. Schools also should use protocols (Ballock, 2007; Burke et al., 2011; Curlette & Granville, 2014; Curry, 2008; DuFour, 2004; Horn & Little, 2010; Lasky et al., 2008; Law, 2005; Little, 2007; Little & Curry, 2008; McDonald & Klein, 2003; Nelson, Slavit, Perkins, & Hathorn, 2008; Timperly & Earl, 2008) to improve professional practice in order to help the organization engage in DDDM processes.

*Organizational learning* is commonly described as groups of individuals within an organization coming together to learn from each other's experiences for the purpose of doing what is best for the group (Galluci, 2008). Educators who engage in collective inquiry, problem-solving, and continuous learning to meet the needs of diverse learners enable each child to receive the best educational opportunities available in the school system. Over the last decade, the amount of research pertaining to protocol-structured discussions to improve professional practice (Ballock, 2007; Burke et al., 2011; Curlette & Granville, 2014; Curry, 2008; DuFour, 2004; Horn & Little, 2010; Lasky et al., 2008; Law, 2005; Little, 2007; Little & Curry, 2008; McDonald & Klein, 2003; Nelson et al., 2008; Timperly & Earl, 2008) and protocols to look at student work (Deuel, Nelson, Slavit, & Kennedy, 2009; Evans, 2001; Kazemi & Franke, 2003, 2004; Langer & Colton, 2005; Little, 2007; Little, Gearhart, Curry, & Kafka, 2003; McDonald, 2002; Paige, 2012) has increased tremendously as schools continue to engage in school reform processes. At the forefront of this change is the leadership of principals, school improvement coordinators, instructional coaches, teachers, and other school-based leaders as they create instructional improvement plans, target specific areas of improvement, and continue to adjust and monitor instructional improvement and enrichment plans. The role of the principal is of utmost importance during this collaborative process as he or she reviews the initial data, sets a vision and mission, and thereafter solicits the support needed to execute the school reform process.

### **Statement of the Problem**

School divisions and principals are tasked with determining how to get teachers to change their practices in order to meet state standards and federal annual measurable

objectives (AMOs), as well as with closing the achievement gaps that exist in schools. In order to create an environment that is conducive to meeting state standards, federal AMOs, and potentially closing the achievement gap, organizational learning, specifically the use of a DDDM process (Boudette, Murnane, City, & Moody, 2005; Breiter & Light, 2006; Brunner et al., 2005; Hamilton et al., 2009; Ikemoto & Marsh, 2007; Mandinach, 2012; Mandinach & Honey, 2008; Mandinach et al., 2006) and protocol-structured discussions to improve professional practice (Ballock, 2007; Burke et al., 2011; Curlette & Granville, 2014; Curry, 2008; DuFour, 2004; Horn & Little, 2010; Lasky et al., 2008; Law, 2005; Little, 2007; Little & Curry, 2008; McDonald & Klein, 2003; Nelson et al., 2008; Timperly & Earl, 2008) in schools are of critical importance. Educators who were once confined to the four corners of their classrooms are now forced to have conversations with colleagues about how to address the needs of the diverse learners in their classrooms to meet the state standards and federal AMOs.

### **Purpose of the Study**

The purpose of this single-case embedded common qualitative case study (Yin, 2014) was to examine and describe how Uprising Elementary School (UES; a pseudonym) made changes during the school reform process that benefited students. Over the last several years, there has been a buzz around the school division pertaining to the dramatic turnaround at UES, suggesting it is a model for other schools that are struggling with similar processes of school change. UES is an excellent school to study because it has been promoted throughout its school division and the state for its use of DDDM protocols to facilitate school reform. Within 2 years of the appointment of a new principal in 2012, UES was no longer identified as a school that needed to participate in

the state school reform process and earned two of the highest designations of excellence in the school division.

The main criteria for conducting the current research on UES evolved from three primary areas of interest: (a) how UES implemented state school reform processes, (b) the role of DDDM and protocol-structured discussions during the school reform process, and (c) to what extent the protocols utilized changed teachers' thinking and instructional practices. During this study, I collected data by conducting individual interviews, focus group interviews, observations, and document reviews, as well as maintained a reflexivity journal. The data collected from this study and the results presented add to the body of research on the use of protocol-structured discussions as a tool for organizational learning, specifically during school reform processes.

### **Significance of the Study**

I believe one of the missing links between successful and unsuccessful schools is the utilization or under-utilization of DDDM protocol-structured discussions. The results of this study provide division-level administrators as well as school-based leaders, teachers, and other stakeholders an opportunity to learn from the findings and refine their current systems and instructional practices. Further, the information gathered in this study provides opportunities for emerging school-based leaders to begin conversations around the effective use of DDDM and protocol-structured discussions in organizational learning upon taking leadership roles at the school and division levels.

## **Research Questions**

The aim of this study was to answer this overarching question: How did protocol-structured discussions contribute to organizational learning at UES between 2012 and 2015? Further, the study was guided by the following related questions:

1. How did protocol-structured discussions affect the school culture at UES between 2012 and 2015?
2. What aspects of protocol-structured discussions transferred to teacher practices at UES between 2012 and 2015?

## **Operational Definitions**

*Case study:* Creswell (2013) defined a case study as “a qualitative approach in which the investigator explores a real-life contemporary bounded system (case) or multiple bounded systems (cases) over time through detailed, in-depth data collection involving multiple sources of information” (p. 97).

*Critical friends groups:* A particular type of school-based professional community aimed at fostering members’ capacities to undertake instructional improvement and school-wide reform (Curry, 2008).

*Culture:* Culture is represented through symbols and rituals rather than the formal structure of the organization and the manner in which it conducts business (Bush & Middleton, 2005; Karlsen & Gottschalk, 2004; Schein, 1990).

*Data-driven decision-making (DDDM):* DDDM is the process by which administrators and teachers collect and analyze data to guide a range of educational decisions (Ikemoto & Marsh, 2007).

*Data protocols:* A tool or collection of tools to disaggregate data in order to make informed decisions about assessment, instruction, and learning.

*Encore teachers:* A title used by Joshua County Public Schools (JCPS; a pseudonym) for teachers of art education, physical education, music education, library education, or instructional technology education.

*Loose coupling:* With the term loose coupling, Weick (1976) intended to convey the image that coupled events are responsive, but each event also preserves its own identity and some evidence of its physical or logical separateness. Loosely coupled systems allow for new elements to be added on or to be removed from the organization with relative ease (Horne, 1992). “In theory, loose coupling allow schools to integrate multiple and conflicting goals, while awarding them legitimacy and trust” (Aurini, 2012, p. 373).

*Multi-tiered systems and support:* A multi-tiered intervention delivery system with the intensity of intervention increasing based on frequent student performance monitoring (Prasse et al., 2012). Witzel and Clarke (2015) defined MTSS as “research-supported early intervention services so that difficulties may be corrected before the student requires special education services” (p. 1).

*Organizational culture:* A coherent system of assumptions and basic values that distinguishes one group or organization from another and orients its choices (Schein, 1990).

*Organizational learning:* Groups of individuals within an organization coming together to learn from each other’s experiences for the common purpose of doing what is best for the group (Galluci, 2008).

*Organizational learning model:* A conceptual framework that can help researchers and practitioners identify, study, and introduce organizational learning to organizations (Lipshitz, Popper, & Friedman, 2002, p. 78).

*Organizational learning structure:* Roles, functions, and procedures that enable organizational members to systematically collect, analyze, store, disseminate, and use information relevant to their own and other members' performance (Lipshitz et al., 2002, p. 82).

*Professional learning communities (PLCs):* A term that is regularly used within schools to refer to specific teaching teams or departments that plan and reflect on instruction collaboratively. Hord (2008) defined professional learning communities as “continuous professional learning . . . professionals coming together in a group--a community--to learn” (p. 10). This term can be used interchangeably with collaborative learning teams (CLTs), communities of practice, or grade level teams.

*Protocol:* Ballock (2007) defined a protocol as:

Agreed upon guidelines for a conversation. This type of structure permits focused conversations to occur. [Groups] use protocols for looking at student and adult work, giving and receiving feedback, solving problems or dilemmas, observing classrooms or peers, to push thinking on a given issue and to structure a discussion around a text. (pp. 9-10)

Little et al. (2003) defined protocols as procedural steps and guidelines to organize discussions and structure participation (p. 187).

*Response to intervention (RtI):* This study used the National Association of State Directors of Special Education (NASDSE) definition of RTI, which is “the practice of



providing high quality instruction/intervention matched to student needs and using learning rate over time and level of performance to make important educational decisions” (NASDSE, 2014, p. 5).

*School-based leaders:* A term that is regularly used to describe the leadership in a school building. These leaders can include the principal, assistant principal, reading and math coaches, teacher leaders, and other members of the school leadership team.

*School improvement process:* A process used within schools that did not meet federal and state accountability measures whereby educators engage in continuous dialogue and collaboration to ensure that all students are achieving at the highest level. A key part of the school improvement process is creating school improvement plans (SIPs). This term can sometimes be used interchangeably with school improvement planning and school reform.

*Societal culture:* An enduring set of values, beliefs, and practices that distinguish one group of people from another (Dimmock & Walker, 2000).

*Tiered instruction:* Tiered instruction is an approach that enables schools to diversify instruction to meet the individual needs of students (RTI Action Network, n.d.). Tier 1 reflects school-wide interventions through best practices in the classrooms (Searle, 2010; Witzel & Clark, 2015). Tier 2 involves targeted interventions in reading or mathematics three to five times a week in a small group of five students or less (Searle, 2010; Witzel & Clark, 2015). Tier 3 incorporates intensive specialized interventions in reading or mathematics daily with a one-to-one student to teacher ratio (Searle, 2010; Witzel & Clark, 2015).

*Title I:* Title I is the largest federal education program; it was passed into law in 1965 under the ESEA as part of the Johnson Administration's War on Poverty. Federal funds under Title I are used to improve the academic performance of children at risk of school failure, either targeting only the educationally neediest students in the school or, in some circumstances, using a school-wide approach (Gordon, 2004).

## **Limitations and Delimitations of the Study**

### **Limitations**

This study was conducted in one elementary school within a large suburban school division in the mid-Atlantic part of the United States. Qualitative research is difficult to replicate because it occurs in the natural setting (Wiersma, 2000). The qualitative aspect of this research would be difficult to replicate because of the uniqueness in leadership, the in-depth discussions with the staff, as well as the various protocols used.

Another key limitation to the study was that the principal who was hired in 2012 to lead the school reform process is no longer in this position. However, the new principal of UES, who was the assistant principal under the outgoing principal, continues to implement the use of protocol-structured discussions and DDDM processes as tools to facilitate organizational learning.

Creswell (2013) defined a case study as "a qualitative approach in which the investigator explores a real-life contemporary bounded system (case) or multiple bounded systems (cases) over time through detailed, in-depth data collection involving multiple sources of information" (p. 97). Similarly, according to Miles and Huberman (1994), case studies provide an analysis of a specific group, organization, or company, thereby

limiting the ability to generalize findings to other groups. The results of this study may not be generalizable to all schools implementing protocol-structured discussions as a tool during the school reform process.

### **Delimitations**

This study was delimited to include only students in one Title I school in a suburban school division in the mid-Atlantic part of the United States. The selected school has a formal structure of implementing protocol-structured tools to engage staff in organizational learning during the school reform process and it has been designated as a school in the state's SIP process. The study involved student achievement data for students who attended the school during the course of the study and the school division data profiles during the document reviews. The study also included state assessment summative results in mathematics and reading from 2012 to 2015, suggesting that it is a model for other schools that are struggling with similar processes of school change. I selected this population because of my interest in researching school reform processes where protocol-structured discussions are at the heart of professional learning.

### **Summary**

There are many aspects of school improvement processes. Whether it is DDDM, the use of protocol-structured discussions, response to intervention (RTI), or multi-tiered systems of support (MTSS), one thing that is crucial is that schools must engage in organizational learning efforts to meet the needs of diverse learners, especially those who are receiving tier 2 and tier 3 services. This study involved an exploration of one school as its leadership team made changes during the school reform process to benefit students. During the study, UES used several protocols to engage in DDDM (Boudette, Murnane,

et al., 2005; Breiter & Light, 2006; Brunner et al., 2005; Hamilton et al., 2009; Ikemoto & Marsh, 2007; Mandinach, 2012; Mandinach & Honey, 2008; Mandinach et al., 2006), protocols to improve professional practice (Ballock, 2007; Burke et al., 2011; Curlette & Granville, 2014; Curry, 2008; DuFour, 2004; Horn & Little, 2010; Lasky et al., 2008; Law, 2005; Little, 2007; Little & Curry, 2008; McDonald & Klein, 2003; Nelson et al., 2008; Timperly & Earl, 2008), and protocols to look at student work (Deuel et al., 2009; Evans, 2001; Kazemi & Franke, 2003, 2004; Langer & Colton, 2005; Little, 2007; Little et al., 2003; McDonald, 2002; Paige, 2012).

Chapter two contains a review of related literature about organizational learning theory, culture, DDDM, and protocols to depict how schools engage in professional learning. Chapter three provides a description of the methodology, including the research questions, overview of the research process, description and justification of the site, research participants, research design framework, data collection methods, and the instruments used in the study. The chapter concludes with my role as a researcher. Chapter four includes the findings while Chapter five contains a discussion of the findings.

## **CHAPTER II: REVIEW OF RELATED LITERATURE**

School reform in the U.S. public school systems continues to go through dramatic changes as the political landscape changes. Dating back to NCLB of 2001 to the newly enacted ESSA of 2016, changes have been made in an attempt to close the Black–White achievement gap and provide equity to all students. This study involved an exploration of the use of protocol-structured discussions during school reform processes to close the Black–White achievement gap and address the inequities that exist in the nation’s school systems.

The theoretical framework for this study of how schools engage in professional learning was based on four major bodies of work that are presented in this literature review. The first three sections of the review contain discussions surrounding the topics of organizational learning theory, culture, and DDDM. The focus of the last section of the literature review is on the use of protocols as tools to facilitate discussion among groups of educators. These protocols are designed to improve teaching and interdisciplinary learning by examining professional practice and student work.

### **Organizational Learning**

Edmondson and Moingeon (1998) described organizations as collections of individuals who can learn and develop (p. 1). Hedberg (1981) stated that “although organizational learning occurs through individuals, it would be a mistake to conclude that organizational learning is nothing but the cumulative result of their members’ learning” (p. 8). Organizations retain certain norms, views, ideologies, and values over time because of the collective beliefs of their members even when there are changes in leadership and personnel.

The ideas of communities of practice (Lave & Wenger, 1991; Wenger, 1998; Wenger & Snyder, 2000) and communities of learners (Brown & Campione, 1994; Rogoff, 1994) illustrate the role of collaboration in organizational development to transform interdisciplinary learning. Wenger and Snyder (2000) described the concept of *communities of practice* in organizations as “groups of people informally bound together by shared expertise and passion, coming together for a joint enterprise” (p. 139). People in communities of practice share their experiences and knowledge in free-flowing, creative ways that foster new approaches to problem-solving (p. 140). Wenger (1998) asserted:

Claiming that communities of practice are a crucial locus of learning is not to imply that the process is intrinsically benevolent. In this regard, it is worth repeating that communities of practice should not be romanticized; they can reproduce counter-productive patterns, injustices, prejudices, racism, sexism, and abuses of all kinds. In fact, I would argue they are the very locus of reproduction. (p. 132)

Curry (2008) added to this idea when she explained, “Common to each of these theories is the premise that teachers learn through situated and social interactions with colleagues who possess distributive expertise and with whom they have opportunities for sustained conversations related to mutual interests” (p. 738). The common theme in all of the definitions espoused above is the idea of separate individuals, with different backgrounds, ideologies, and experiences, learning and working together to achieve a common goal. This is undoubtedly why schools can be characterized as complex systems. In order to achieve their goals, educational institutions must continue to be

“loosely coupled” to make sound instructional decisions for all students. This allows schools, as complex systems, to flexibly accommodate the social relationships and cultural practices that must be negotiated during the learning processes for groups within the organization.

### **Loose Coupling as a Theory of Organizational Learning**

The use of the term *loose coupling* to define organizational systems was pioneered by Weick (1976). However, it appeared in several pieces of literature prior to Weick’s work, most notably that of Glassman (1973). Glassman categorized the degree of coupling between two systems on the basis of the activity of the variables the two systems share. Coupling signifies that the interdependent elements are “linked and preserve some degree of determinacy” (Orton & Weick, 1990, p. 204). Loose coupling refers to situations of “both responsiveness and distinctiveness” (p. 205). Loosely coupled systems allow for new elements to be added on or to be removed from the organization with relative ease (Horne, 1992). “In theory, loose coupling allows schools to integrate multiple and conflicting goals, while awarding them legitimacy and trust” (Aurini, 2012, p. 373).

By loose coupling, Weick (1976) intended to convey the image that coupled events within an organization may or may not be responsive to each other, but that each event also preserves the characteristics of its cultural identity and some indication of its physical or logical distinction. Thus, in an educational organization, it may be the case that the counseling department is loosely coupled to the administrative team. The image is that the principal and counselors are somehow attached, but that attachment may be circumscribed, infrequent, weak in its mutual effects, unimportant, or slow to respond.

Weick suggested that educational organizations are frequently managed with the wrong model—one that appears to portray organizations as more tightly coupled than they are in reality (Orton & Weick, 1990).

According to Weick (1976), a researcher can study loose coupling in educational organizations or “loosely coupled systems” (p. 5). The idea of loose coupling is evoked when people have a variety of situations in mind. For example, Prince William County Public Schools (PWCS) and Fairfax County Public Schools (FCPS) are loosely coupled with the Virginia Department of Education. In addition, Bel Air Elementary School and Featherstone Elementary School in the PWCS division are loosely coupled in that they are both subsidiaries of PWCS. At the school level, teachers from the English speakers of other languages (ESOL) department are loosely coupled with the special education department (SPED) as well as within each department. Loose coupling is essential in organizational learning because it allows for continuity and stabilization in programs and services within the organization. Loose coupling theory will continue to be an integral component of organizational learning theory (Meyer, 2002; Rowan, 2002; Spillane, Parise, & Sherer, 2011).

### **Advantages of Loose Coupling**

When groups collaborate toward a common goal, like different schools working toward a division mission and vision or departments in a school working toward the school’s mission and vision, they must abide by some of the same policies and procedures. One advantage of loose coupling is that it allows the collaborating entities to retain some aspects of their culture that make them unique (Glassman, 1973). A school may be required to follow division policies about benchmark testing procedures, though



the math department within that school can continue to create common assessments based on the needs of its students, beliefs about curriculum, or the resources the school has available. This loosely coupled alignment of systems allows for greater efficiency and productivity within the organization, creating a symbiotic relationship that allows things to run smoothly. It also provides benefits insofar as it allows the system to (a) preserve the identity, uniqueness, and separateness of its elements; (b) retain options to discover novel solutions that might not exist in a tightly coupled organization; (c) allow for localized adaptation; (d) create room for self-determination by actors; and (e) run fairly inexpensively (Glassman, 1973, pp. 6-9).

Glassman (1973) suggested that another benefit of loosely coupled organizations is that they are sensitive sensing mechanisms. In other words, as Heider (1959) explained, when an organization has more independent elements, like collaborative groups or individual actors, who are capable of perceiving a new phenomenon, the more accurate they can be in addressing that phenomenon. Controlling and restricting individuals and groups, as happens in tightly coupled organizations, inhibits the capacity of the organization to respond to new situations. By Heider's reasoning, one can assert that loosely coupled systems preserve many independent sensing elements, allowing for diversity in perspectives, which, syllogistically, can provide a better understanding of the environment than might exist in a tightly coupled system (p. 6).

The capacity for localized adaptation in loosely coupled organizations has another benefit. When one area of the organization experiences a challenge, it need not affect the whole system (Heider, 1959, p. 7). If one school experiences challenges related to test scores, it does not affect every school in the division. Similarly, if the math department

in a school has a new teacher, it does not mean that every department in the school needs to provide content area mentoring services to that person.

Finally, localized adaptation would seem to provide an additional benefit. In the field of education, actors such as principals, teachers, instructional assistants, and other members of the school community play a significant role in the day-to-day operations of the school. They are best equipped to understand the needs of stakeholders and have a sense of efficacy about their position. The respect for individuals' unique contributions that is inherent in loosely coupled systems would seem to promote this sense of efficacy as opposed to a tightly coupled system where discretion is limited (Heider, 1959, p. 8). Perhaps the greatest benefit afforded by loosely coupled organizations relates to culture. Culture refers to the informal aspects of organizations rather than their official elements. The primary focus is on the values, beliefs, and norms of individuals in the organization and how these individual perceptions coalesce into shared meanings. Culture manifests through symbols and rituals rather than the formal structure of the organization and the manner in which it conducts business (Bush & Middleton, 2005; Karlsen & Gottschalk, 2004). Two common forms of culture that transform organizations are societal culture and organizational culture.

### **Societal Culture**

Hofstede (1991) defined *societal culture* as the patterns of thinking, feeling, and acting underpinning the collective programming of the mind that distinguish the members of one group or category of people from another. Similarly, Dimmock and Walker (2000) defined societal culture as an enduring set of values, beliefs, and practices that distinguishes one group of people from another. This area has been largely overlooked in

the field of educational administration (Dimmock & Walker, 2002), perhaps because as Bush and Middleton (2005) stated, societal culture is beyond the control of educational leaders. However, it is important because understanding societal culture can “help facilitate cultural sensitivity when policy, theory and practice are transported between education systems” (Dimmock & Walker, 2002, p. 310), as they are in loosely coupled organizations like school divisions and schools.

To this end, Dimmock and Walker (2002) identified seven dimensions of societal culture: (a) power-distributive/power concentrated, (b) group-oriented/self-oriented, (c) consideration/aggression, (d) proactivism/fatalism, (e) generative/replicative, (f) limited relationship/holistic relationship, and (g) male influenced/female influenced (p. 49). The seven dimensions of societal culture are pertinent to the field of education because they can potentially have significant consequences on educational policy and practice.

Dimmock and Walker posited that “foregoing the seven dimensions of societal culture helps facilitate cultural sensitivity when policy, theory and practice are transported between education systems” (p. 310).

### **Organizational Culture**

Leaders are influenced by but cannot influence societal culture, though they can influence organizational culture (Bush & Middleton, 2005). They can document and pass on school history; identify and celebrate excellence; review rituals, cultural values, and beliefs in the organization; develop ceremonies; and be aware of key members of the organization who do work that aligns with their vision for school culture (Deal, 1985).

Most of the research on culture in education relates to organizational culture. Schein (1990) defined *organizational culture* as a coherent system of assumptions and

basic values that distinguishes one group or organization from another and orients its choices. These values can change over time and manifest within leaders by virtue of their own beliefs and values (Bush & Middleton, 2005; Schein, 1990). One of the most decisive functions of leadership may well be the creation, management, and, on occasion, the destruction of culture.

Bush and Middleton (2005) outlined four central themes of organizational culture: (a) focusing on the values and beliefs of members of organizations, (b) developing shared norms and meanings, (c) identifying rituals and ceremonies that are used to support and celebrate beliefs and norms, and (d) recognizing the existence of heroes and heroines who embody the values and beliefs of the organization. Leaders can shape organizational culture through the appointment of staff who embody the same merits and values as the leader. Bush and Middleton believed the staff selection process provides opportunities to espouse the values of the school or its leaders in the hope that those who hold similar values will be attracted to the post while others will be deterred from applying. Over time, the culture of a school will shift in the direction sought by the leader.

### **Interactions Between Societal and Organizational Culture**

Societal cultures differ mostly at the level of basic values, while organizational cultures differ mostly at the level of more superficial practices, as reflected in the recognition of particular symbols, heroes, and rituals (Bush & Middleton, 2005). In a school setting, principals can influence organizational culture by carefully forging collegial relationships and building leadership capacity with the leaders and adversaries in the building. In order to positively influence organizational culture, shared beliefs, commitment, values, shared and supportive leadership, supportive conditions, intentional

learning, shared personal practice, structure, knowledge and skills, and ongoing feedback are essential (Gadja, 2004; Gadja & Koliba, 2007; Hord, 2008; Marks & Louis, 1999; Woodland & Hutton, 2012).

While leaders may not have a direct effect on societal culture (Bush & Middleton, 2005), it is necessary to understand the influence of individuals' cultural beliefs in the school because the traditions and values pertaining to each of the cultural groups that exist in an organization can directly affect the organizational culture. Whether it is the school staff or the student population, an organization can be affected positively or negatively if there is not an environment of acceptance, collaboration, and shared decision-making. To create such an environment, the leader must establish systems, processes, norms, and a clear vision and mission for the organization so the societal cultural norms of the different stakeholders in the organization do not overshadow the organizational culture of the school.

This raises questions about how societal and organizational culture relate to loosely coupled organizations or the experiences of leaders working in such organizations. More specifically, one could reason that in loosely coupled organizations where the societal culture promotes the distribution of decision-making by groups of individuals, school-based management could adjust more successfully to the influences of societal culture than in a culture in which power is concentrated. One could also reason that school cultures that promote collaboration through the use of strategic decision-making processes are more likely to experience greater continuity and success. One strategy that leaders can deploy to enhance the culture of the organization is the use of DDDM processes as well as the utilization of various protocols to guide discussion and

collaboration among staff members to enhance teaching and foster interdisciplinary learning (Boudette, Murnane, et al., 2005; Breiter & Light, 2005; Ikemoto & Marsh, 2007; Mandinach, 2012).

### **Data-Driven Decision-Making**

In the wake of the NCLB legislation, increasing attention has been given to accountability and DDDM in public and professional arenas (Brunner et al., 2005). DDDM is the process by which administrators and teachers collect and analyze data to guide a range of educational decisions (Ikemoto & Marsh, 2007). DDDM was included as one of the four pillars in 2009 in the American Recovery and Reinvestment Act whereby federal education officials sought to ensure that data and evidence were at the heart of policy and practice (Mandinach, 2012).

As a result of the rise of DDDM, school-based leaders and division officials face the challenge of disaggregating large amounts of data to find gaps in overall school and individual student performance. This can vary from school to school depending on the depth of the division-wide processes used. Although urban districts have faced intense external scrutiny for some time (Fullan, 2000), the shift in funding and regulatory requirements occasioned by NCLB has prompted educators to think differently about the potential to use data to inform instruction and decision-making aimed at improving school achievement. Using data for these purposes requires educators at all levels of K-12 education to develop new competencies while they continue the day-to-day work of teaching and operating schools (Lasky et al., 2008). When school-based leaders and division representatives increase their capacity to understand data use, they are better able

to identify weaknesses and gaps in the data and better chart plans for improvement (Earl & Katz, 2006).

The introduction of NCLB added urgency to the quest for learning from data because state and local school divisions are required to report school performance data. Schools and divisions are subject to sanctions under the accountability measures if they do not meet standards (Lasky et al., 2008). The U.S. Department of Education created the Institute of Education Sciences (IES) as the research branch to help policymakers, researchers, and educators in their understanding of DDDM. Hamilton et al. (2009) outlined five recommendations from the IES in order for schools to establish a clear vision for DDDM: (a) data should be part of an ongoing cycle of instructional improvement, (b) students should be taught by their teachers to examine their own data and set their own learning goals, (c) there must be an explicit vision for how data should be used throughout a division, (d) supports and resources must be provided to establish and sustain a data culture within schools, and (e) leaders should develop and implement a district-wide data system (pp. 10-45). These recommendations were similar to what Anfara and Donhost (2010) described as the five phases of DDDM: (a) organizing for success, (b) building assessment literacy, (c) identifying data sources, (d) aligning data systems, and (e) altering instruction. Kerr, Marsh, Ikemoto, Darilek, and Barney (2006) suggested that the effective use of data depends on several factors, including strong leadership, up-front planning for data collection and use, and strong human capacity for data-driven inquiry. Engaging in a DDDM process allows the organization to learn lessons from the data collected. This process provides K-12 educators an avenue to look at their instructional practices, strategies, systems, and processes to make the necessary

adjustments to the curriculum in real time. Deming (1994) described this process as *systems thinking*, or a “network of interdependent components that work together to try to accomplish the aim of the system” (p. 50). DDDM is an example of systems thinking. Similar to DDDM, Baldrige in Education (BIE) seeks to establish the same objective. Baldrige is a framework of research-based system elements (Byrnes & Baxter, 2012). Typically, this is done through a strategic planning model. *Strategic planning* is a “systematic and regular process in which leaders review vision, mission, core values . . . and review previous results to strategic challenges (Byrnes & Baxter, 2012, p. 26). One strategic planning model that is normally associated with BIE is Plan Do Study Act (PDSA). In a PDSA model, leaders use this cycle for continuous improvement (Byrnes & Baxter, 2012). Whether using a PDSA or a DDDM model, one thing that is for certain is that continuous improvement is not just about the numbers or the data from assessments. It is about making the data actionable by transforming them into usable knowledge (Mandinach, Honey, Light, & Brunner, 2008). To accomplish this transformation, several conceptual theories have been developed regarding the effective use of DDDM (Boudette, City, & Murnane, 2005; Breiter & Light, 2006; Ikemoto & Marsh, 2007; Mandinach, 2012; Mandinach & Honey, 2008; Mandinach et al., 2006).

### **Conceptual Frameworks for Data-Driven Decision-Making**

Conceptual data use enables educators who are engaged in school improvement processes to identify specific areas of need within their schools (Boudette, City, et al., 2005). The conceptual frameworks for DDDM contain one common variable—it is a cyclical process of using data (Mandinach, 2012). According to Mandinach (2012), there are six essential skills within DDDM: collect data, organize data, analyze information,



summarize information, synthesize knowledge, and prioritize information to determine what course of action to take. Each of the skills is represented in Figure 1.

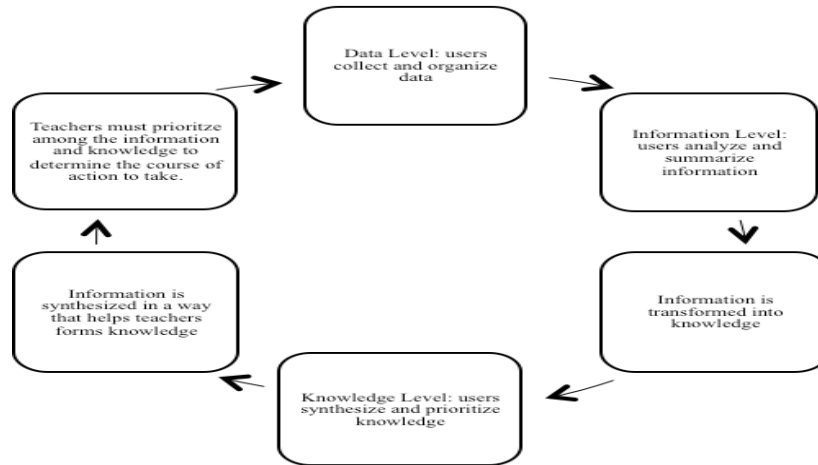


Figure 1. Six essential skills with DDDM (Adapted from Mandinach, 2012).

Other conceptual frameworks of DDDM provide alternate views to Mandinach et al.’s (2008) beliefs of how educators can engage in DDDM during the school reform process. Another framework was developed by Boudette, City, et al. (2005), called the Data Wise school improvement process. As can be seen in Figure 2, this framework includes preparation, inquiry, and action.

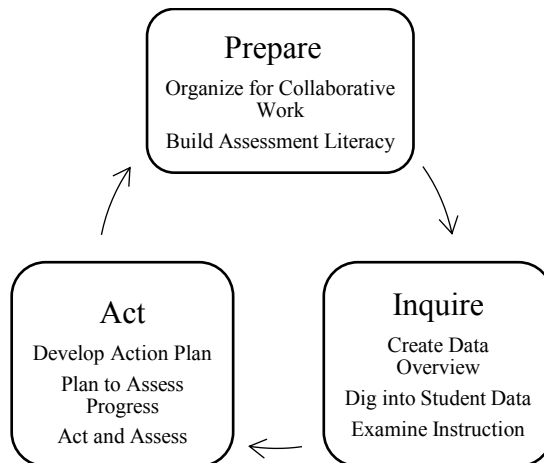


Figure 2. Data Wise school improvement process (Adapted from Boudette, City, et al., 2005).

Figure 3 outlines a six-step process developed by Breiter and Light (2006) and Light, Wexlar, and Heinze (2004). Their work was based on Ackoff's (1989) conceptual framework, which links data, information, and knowledge (as cited in Breiter & Light, 2006).

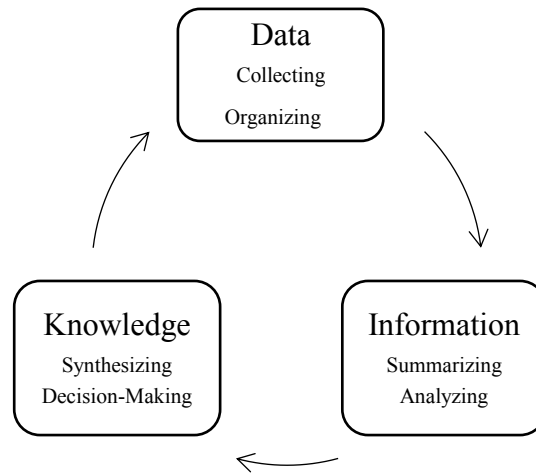


Figure 3. Data, information, and knowledge framework (Breiter & Light, 2006).

Figure 4 outlines the data, information, and knowledge framework by Ikemoto & Marsh (2007). Their work was based on the Mandinach et al. (2006) framework of DDDM.

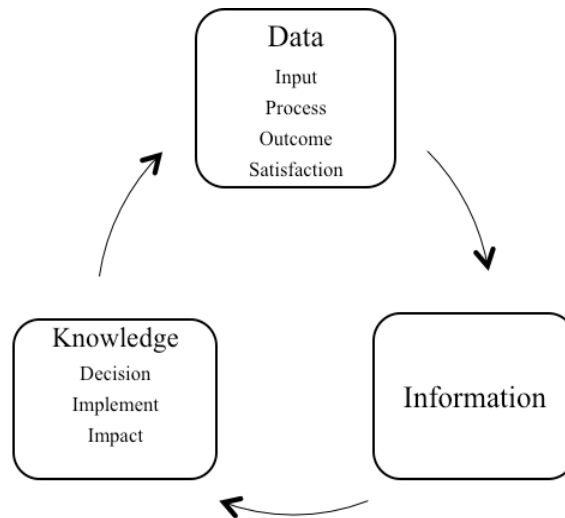
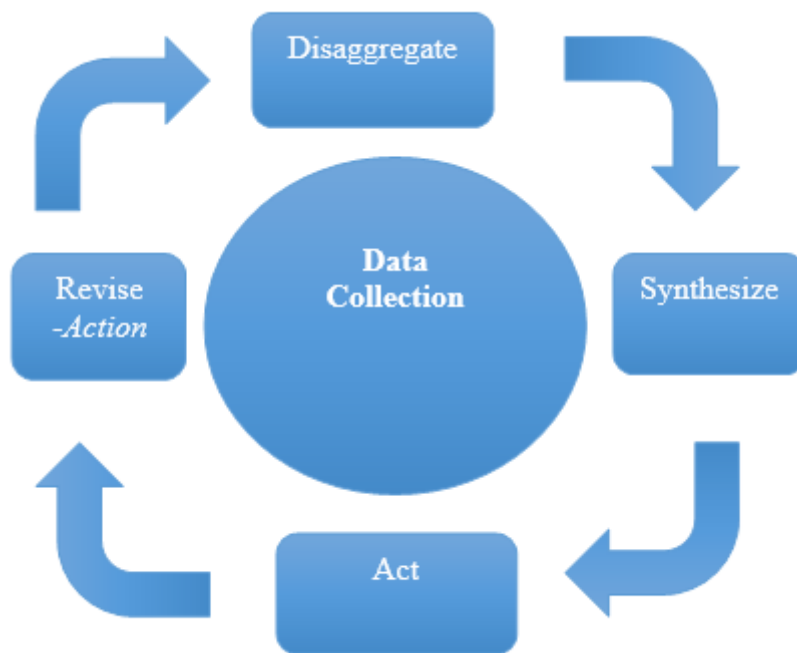


Figure 4. Data, information, and knowledge framework (Ikemoto & Marsh, 2007).

The cyclical nature of these conceptual frameworks is similar, yet they differ in the following ways:

- Mandinach (2012) focused on teacher practices in DDDM by allowing opportunities to drill down to and outline cognitive skills.
- Ikemoto and Marsh (2007) outlined four basic models of DDDM within the Mandinach et al. (2006) framework: basic, analysis-focused, data-focused, and inquiry-focused. Each model, commonly referred to as a quadrant, is interchangeable depending on the sophistication of data use and the outcomes desired.
- Breiter and Light's (2006) and Ikemoto and Marsh's (2007) conceptual frameworks on DDDM do not have an action component.
- The DDDM frameworks of Boudette, City, et al. (2005) and Breiter and Light (2006) focus on both school-wide practices as well as teacher practices.

When analyzing the four conceptual frameworks of DDDM (Boudette, City, et al., 2005; Breiter & Light, 2006; Ikemoto & Marsh, 2007; Mandinach, 2012), it becomes clear that each framework has an embedded component that makes it unique. However, upon further analysis, one can take a component from each model to generate a new conceptual framework for DDDM. One such example (See Figure 5) follows.



*Figure 5.* Newly developed model for DDDM processes.

In the model presented in Figure 5, data are collected and organized by practitioners; these practitioners meet together in a professional learning community (PLC) or collaborative learning team (CLT) to disaggregate data in a manner that will make them easier to synthesize. During this collaborative process, an in-depth synthesis occurs in which each member provides input to create an action plan that addresses the gaps and lessons learned from the data. The last two phases of this DDDM model are Act and Revise (action). During the Act phase, practitioners will implement the detailed plan created in the synthesis phase to address instructional needs. In the Revise phase of the DDDM process, the data collected and future data to be collected are continuously revised to assess the effectiveness of the action plan created as well as the DDDM process. The DDDM plan is cyclical in nature because at any given time, practitioners can move from one phase to another depending on needs as well as lessons learned from the ongoing data collection.

DDDM processes, including the models created by Boudette, City, et al. (2005), Breiter and Light (2006), Ikemoto and Marsh (2007), Mandinach (2012), or the new model presented based on the components from the previously mentioned models, will only be effective if practitioners continuously engage in the process. At the heart of this process is the leader of the organization. In a K-12 setting, the person who must be responsible for leading the discussion is the building principal.

### **The Role of the Principal in Data-Driven Decision-Making**

Some of the more recent studies that have been published (Ikemoto & Marsh, 2007; Mandinach & Honey, 2008; Wayman, 2005; Young, 2006) revealed that leadership from the principal is essential in implementing an effective DDDM process within a school. Two of the main themes that arose from the research are building teachers' capacity to analyze data and using the data for continuous improvement. Wayman (2005) affirmed that school leaders are the key in building a culture of data use within schools. In a study on teacher use of data in the areas of loose coupling, agenda setting, and team norms, Young (2006) found principals to be the single most important factor in setting the goals for data use within a school. Other areas in which principals have been shown to have a major impact in the DDDM process include: (a) organizational learning (Little, 2007, 2012), (b) technology (Mandinach & Honey, 2008; Wayman, Stringfield, & Yakimowski, 2004), (c) formative assessment (Brunner et al., 2005; Kerr et al., 2006; Snipes & Casserly, 2004), and (d) professional development (Katz, Sutherland, & Earl, 2005; Light et al., 2004).

While studies have shown the role of the principal to be the most single important factor in DDDM, other studies, such as those conducted by Earl and Katz (2006),

Mandinach and Honey (2008), Mandinach (2012), and Wu (2009), portrayed a different picture of the principal's role in DDDM. In 2006, Earl and Katz defined a data literate leader as someone who thinks about the purposes of data, recognizes sound and unsound data, possesses knowledge about statistical and measurement concepts, makes interpretation paramount, and pays attention to reporting and to audiences. According to their research, educational leaders "often have no idea what the data mean or how to use it" (p. 17). Mandinach (2012) asserted that "administrators rarely receive systematic training in DDDM practice" (p. 80). Based on the lack of training in DDDM and a lack of understanding of data literacy (Wu, 2009), principals are not able to help elevate their teams to function at such a high level of interdisciplinary learning. One of the ways in which principals can enhance the DDDM process is by engaging their teams in the use of protocols or tools (Boudette, City, et al., 2005; Ikemoto & Marsh, 2007; Little, 2007; Mandinach, 2012) to help begin the process of DDDM.

### **Protocol-Structured Discussions**

As a result of the increasing pressures of federal and state mandates on local school divisions, school-based leaders and teachers are charged with using data to increase student achievement. In order to deal with this challenge, school-based leaders are beginning the process of implementing protocol-structured dialogue to promote an understanding of the instructional dynamics at their schools. These challenges have led to the evolution of protocols as instructional tools for school-based leaders, teachers, and, in some cases, parents, to improve teaching and interdisciplinary learning and as a strategy for school reform. Ballock (2007) defined a *protocol* as:

Agreed upon guidelines for a conversation. This type of structure permits focused conversations to occur. [Groups] use protocols for looking at student and adult work, giving and receiving feedback, solving problems or dilemmas, observing classrooms or peers, to push thinking on a given issue and to structure a discussion around a text. (pp. 9-10)

Similarly, Little et al. (2003) defined protocols as procedural steps and guidelines to organize discussions and structure participation (p. 187). Protocols can be utilized in a variety of ways. According to the National School Reform Faculty (NSRF), since 1994, over 200 protocols or activities have been developed to help organizations engage in critical friends groups, classroom meetings, professional learning, and other general discussions. Some of the most popular topics where protocols are used in a K-12 setting include learning communities, equity, inquiry, team-building and trust-building experiences, observation, brainstorming, protocols for classroom use, and protocols for administrative use (NSRF, n.d.-a).

Two of the most pertinent ways in which protocols are utilized in education are structured and intentional conversations about professional practice (Ballock, 2007; Burke et al., 2011; Curlette & Granville, 2014; Curry, 2008; DuFour, 2004; DuFour & Eaker, 1998; Horn & Little, 2010; Lasky et al., 2008; Law, 2005; Little, 2007, 2012; Little & Curry, 2008; McDonald & Klein, 2003; Nelson et al., 2008; Timperly & Earl, 2008) and looking at student work to improve teaching and interdisciplinary learning (Deuel et al., 2009; Evans, 2001; Langer & Colton, 2005; Little, 2007, 2012; Little et al., 2003; McDonald, 2002; Paige, 2012). In the school setting, protocol-structured discussions are typically conducted under the direction of an instructional coach,

administrator, or a designated school-based leader (Ballock, 2007). The group leader provides directions such as time allotment for discussions, directs questions to the person who will be talking while the rest of the group takes notes, and develops questions for further inquiry.

### **Protocols to Examine Professional Practice**

The practice of teachers holding intentional conversations about teaching and learning through the use of protocols continues to evolve. Protocols promote trust, commitment, and collaborative work (Ballock, 2007). DuFour (2004) asserted that “collaborative conversations call on team members to make public what has traditionally been private – goals, strategies, materials, pacing, questions, concerns, and results” (p. 9). Critical friends groups (CFGs; Ballock, 2007; Burke et al., 2011; Curlette & Granville, 2014; Curry, 2008; Law, 2005; Little & Curry, 2008) as well as structured conversations (Horn & Little, 2010; Lasky et al., 2008; Little, 2003, 2012; Little & Horn, 2007; Timperly & Earl, 2008) provide educators an avenue to engage in continuous professional learning by looking at their instructional practices. They can look at instructional strategies, lesson planning, curriculum design, and ways of assessing student work.

Before learning conversations can be held in schools and across people in education systems, particular structures, tools, and norms must be established to provide foundational conditions that can scaffold learning (Lasky et al., 2008). Timperly and Earl (2008) asserted that “powerful evidence-based conversations require the use of relevant data that will promote deeper understanding; learning conversations that build upon mutual respect; and an inquiry habit of mind to dig deeper into evidence” (pp. 121-126).



Horn and Little (2010) provided a similar framework pertaining to the use of evidence-based conversations. Horn and Little stated “that conversational routines involved normalizing a problem of practice, further specifying the problem, revising the account of the problem (its nature and possible causes), and generalizing to principles of teaching” (p. 193).

Both of these accounts support the work of Law (2005), Curry (2008), Ballock (2007), Burke et al. (2011), and Curlette and Granville (2014) on CFGs. The NSRF (n.d.-b) defines a CFG as “a professional learning community (PLC) consisting of 5-12 members who are committed to improving their practice through collaborative learning and structured interactions (protocols), and meet at least once a month for about 2 hours” (para. 1). A hallmark of CFG work (Curry, 2008), protocol-guided conversations are used to create focused opportunities for members to deliberately and critically explore issues of teaching and learning through the close examination of either published texts or artifacts of classroom practice. This dimension of practice distinguishes CFGs from many other professional development and professional communities settings, yet the use of such conversational tools has been largely ignored in the existing empirical literature. Within professional learning communities, protocol-structured discussions are the work that is being done; what is really important is engaging the staff in continuous learning about their practice. The reliance on protocol structures in CFGs is an interesting phenomenon because the groups see themselves as teacher-driven grassroots entities even as they incorporate tools designed by reform activists external to their schools. According to Curlette and Granville (2014), “The provision of protocols makes CFG work unique among other group-based teacher development modalities” (p. 26). Curry

(2008) supported this assertion when she stated:

Protocols encouraged the de-privatization of practice by requiring CFG members to bring artifacts of their teaching or of their students' learning for collective and public review. Protocols also gave CFG members permission to ask challenging questions, critique the practice of their peers, and offer explicit instructional advice. (p. 764)

### **Protocols to Examine Student Work**

Research conducted by Deuel et al. (2009), Evans (2001), Kazemi and Franke (2003, 2004), Langer and Colton (2005), Little (2007), Little et al. (2003), McDonald (2002), and Paige (2012) on the Looking at Student Work (LASW) protocol provided educators with a unique view of how protocols can lead to improved teaching and learning. “The theory of action for LASW is that by analyzing student work, teachers will reflect on their teaching and formulate an action plan to change their teaching practice” (Evans, 2001, p. 12). Based on this theory, the prevailing concept is that if the developed action plans are implemented effectively, teachers will improve their pedagogy, and consequently increase student achievement (Evans, 2001). Recently, because of the nature of sanctions for schools and school divisions that failed to meet state accreditation and federal standards, organizations are becoming more engaged in professional development and school reform (Little et al., 2003) by bringing teachers together to do collectively what they generally do alone—look at student work and think about their performance. Using this protocol also requires teachers to collaborate in a professional community to share instructional practices and foster an atmosphere where interdisciplinary learning is a standard practice. This process of LASW is relatively

under-utilized for professional development and school reform in the field of education. However, “the good news for advocates of these practices is that there is emerging evidence that some versions of LASW yield benefits for teaching and learning” (Little et al., 2003, p. 186).

According to McDonald (2002), there are three protocols that can be used for looking at student work: (a) protocols for suspending judgment, (b) protocols for tuning judgment, and (c) protocols for extending judgment school-wide. Similarly, Little et al. (2003) asserted that there are three common elements of how LASW contributes to professional development and school reform: (a) bringing teachers together to focus on student learning and teaching practice, (b) getting students’ work on the table and into the conversation, and (c) structuring the conversation (pp. 187-188).

Evans’s (2001) research on LASW provided “a way for teachers to examine the results of their teaching and to consider other ways of teaching in order to get all students reaching high standards” (p. 29). Evans further stated:

LASW includes collaboration and classroom based feedback on teachers’ effectiveness, which research indicates impacts teachers’ self-efficacy and instructional choices. Furthermore, LASW incorporates what is known about effective professional development. The teachers work collaboratively in an effort to improve their practice. This effort is focused and sustained. Having to create an action plan for improving teaching and learning creates an opportunity for teachers to examine their teaching expectations and practice. (p. 29)

Kazemi and Franke (2004) documented the advantages of using student work as a type of professional development for teachers. “Using student work allows teachers to

‘slow down’ their instruction as well as raise questions about professional practice and student learning” (Kazemi & Franke, 2003, as cited in Paige, 2012, p. 28). Protocol-structured conversations enable participants in CFGs to transform small samples of work into evidence of a broader problem of practice (Little & Curry, 2008). The protocol’s built-in constraints on the use of time, the participants’ roles, and the available contextual information arguably help focus attention on the evidence at hand, at least for a sizable chunk of the allotted time.

### **Limitations of Protocol-Based Conversations**

The research conducted by Little and Curry (2008), Little et al. (2003), Timperly and Earl (2008), and Horn and Little (2010) on protocol-based conversations provided a few limitations. Little and Curry (2008) asserted some limitations of protocol-based conversations are that participants will privilege form over substance, resulting in superficial examination of the evidence at hand; the potential for conflicts between “openness” to broad participation or multiple points of view and the need for the kind of clarity that could inform instructional choices; and the tendency for the apparent ease and accessibility of protocol formats to mask the conditions and resources needed for their effective use (pp. 38-39).

Curry’s (2008) research on the use of protocols in CFGs showed that reliance on protocols can constrain learning opportunities in at least two ways. First, the enactment of protocol guidelines can limit the pursuit of important emergent issues. Second, the reliance on guided conversation can engender and reinforce ritualized patterns of discourse that can potentially narrow the depth of CFG inquiry. Timperly and Earl (2008) supported a similar point of view, stating that “while these types of protocols may

assist groups of educators to begin the process of evidence-informed conversations, some of the problems with such protocols is that following protocols could become more important than what is learned” (p. 125).

The LASW protocol also presents challenges to practitioners. In order to facilitate this process effectively, professional development for all participants is essential (Evans, 2001). “The size of the team and external pressures made the work of LASW refract in different ways” (Evans, 2001, p. 222). Teachers often allow conversations to move away from the actual goal of looking at student work and digging deeper into their practice, focusing on more general issues regarding class performance (Evans, 2001; Little et al., 2003). This is related to the fact that in many LASW professional development or school reform movements, the lack of clarity of the purpose forces teachers to construct their own meaning of LASW (Evans, 2001), so it cannot be seen as a square filler because of top-down management mandates. Little et al. (2003) provided three explanations to explain these often seen tendencies: (a) concern for personal comfort and collegial relationships, (b) scarce time, many interests, and (c) uncertainty about what to highlight in looking at student work (p. 191).

To capitalize on the promise of protocols, Little and Curry (2008) provided three key areas of focus for educators:

- Professional learning and instructional improvement anchored in a conversation about evidence
- Resources of subject matter knowledge and subject teaching
- Skilled facilitation

Horn and Little’s (2010) research on two CFGs supported the findings presented

in Little and Curry's (2008) research. According to Horn and Little, based on the evidence developed through ongoing observation and semi-structured interviews with teachers, conditions that varied between the two CFGs and that were evident to greater or lesser degrees in any specific episode of their talk were shared frames of reference, common curriculum, and leadership.

### **Comparative Analysis of Protocols: Improving Professional Practice and Looking at Student Work**

Upon completing a thorough analysis of the literature pertaining to protocol-structured discussions, three general themes emerged related to protocols for improving professional practice and LASW. They are: (a) collaborative work, (b) conversations around student work, and (c) professional practice (Appendix F). The three themes support that when educators are immersed in protocol-structured discussions, the emphasis needs to be centered around collaborative work within CLTs/PLCs, conversations must be structured based on student work and the teacher's professional practice. Whether discussing protocols for professional practice or LASW, one thing that is evident is that the characteristics of both protocols align nicely. The characteristics supported within the literature for both protocols provide key observables that educators need to see when engaged in organizational learning practices. I used the Comparative Analysis of Protocols for Improving Professional Practice and Protocols for Looking at Student Work for my document analysis, specifically with the documents that emerged from the CLT observations.

Based on these three general themes, I decided to combine the characteristics of protocols for improving professional practice and LASW to develop a sample

observation template that educators can utilize to determine the effectiveness of their CLTs/PLCs when they are engaged in organizational learning practices (Appendix K). I took each of the characteristics from the two protocols and aligned them under the three general themes. Each characteristic became a discussion prompt that educators can select if it is observed during a CLT/PLC meeting. In addition to the observable prompts, the Observation Protocol for CLTs allows educators to document evidence to support the observables as well as a reflection component for interactions among teachers, specialists, and administrators.

### **Summary**

The literature pertaining to the theoretical perspectives of organizational learning, loose coupling theory, and culture provided the foundation for the current research on the use of protocol-structured discussions to improve teaching and interdisciplinary learning. The primary focus of each of these bodies of work was that shared systems and expertise, interactions within an organization, collaborative learning, structured and sustained conversations related to mutual interests, and shared beliefs, norms, and values are essential to the growth and development of the organization. Organizational learning is nothing more but the cumulative result of members' learning (Hedberg, 1981). To facilitate the learning that needs to occur in a K-12 education setting, collaborative work and inquiry to foster an environment for teacher learning are essential. Therefore, it is indispensable to develop tools and structured processes with which to engage in group analysis and self-reflection.

Protocol-structured conversations continue to evolve as a tool for professional development, group analysis, and self-reflection during school reform processes.

Protocols to examine professional practice through structured and intentional talk are developing at a rapid pace. CFGs and structured conversations are the two most prominent ways in which educators can engage in such practice. However, the research on protocols for looking at student work is developing at a much slower pace. Currently, only five major research studies (Evans, 2001; Kazemi & Franke, 2003; Little et al., 2003; McDonald, 2002; Paige, 2012) have specifically been designed for looking at student work in a K-12 setting.

Protocol-structured conversations as a tool for professional development, group analysis, and self-reflection during school reform will continue to evolve over time as researchers find more ways to help states and school divisions meet accountability and accreditation benchmarks, whether mandated by NCLB or as a part of the new ESEA flexibility. Similarly, DDDM plays a significant role in any school reform process, as it has become one of the hallmarks of legislation in public education. In order to engage in DDDM, protocol-structured conversations during organizational learning practices in schools will be even more critical. The existing research has shown that protocols to examine professional practice through structured and intentional talk and looking at student work have led to major shifts in the way educators provide support to each other; what is still left to be discovered is the true impact of protocol-structured discussions on teachers' instructional practices in the classroom. This research study was designed to contribute to the body of research on protocol-structured discussions and provide new tools that educators can implement in schools and classrooms during the school reform process.



Chapter three presents the methodology used to help organizations learn during the school reform process at UES from 2012 to 2015. I conducted single-case embedded common qualitative case study to examine the use of various protocols at UES to engage staff in professional learning, DDDM, and look at student work to make changes that benefitted students.

### **CHAPTER III: METHODOLOGY**

In order for public school educators to combat the inequalities that continue to persist, close the achievement gap, and meet the requirements from federal and state accountability measures, they must continue to immerse themselves in organizational learning. One way educators can do this is by using protocols to facilitate professional discussions of teacher practices and the resulting student data. The basic premise of this study was to examine and describe how UES made changes during the school reform process that benefited students and how the school has been promoted throughout the school division and the state for its use of DDDM protocols to facilitate school reform. From 2012 to 2015, UES was recognized for its overall performance and achievement by the state and the school division for its school reform process. UES earned two of the highest designations that could be bestowed upon schools during that time. UES was designated as a School of Excellence by the school division. Upon visiting UES, the governor of the state designated it as a school to watch for exceeding the standards for ELLs. The recognitions conferred upon UES created a buzz within the school division, suggesting the school is a model for other schools that are struggling with similar processes of school reform. The excitement that was generated by the recognitions from the state and division compelled the leaders of many schools in the division to adopt some variation of the UES model.

Chapter three contains a description of the methodology for this single-case embedded common qualitative case study (Yin, 2014) of the DDDM protocols UES used as a tool to help the organization learn during the school reform process. Chapter three also contains explanations of the research questions, an overview of the research process,

and a description and justification for the site selection. In addition, it contains details of the process used to collect and analyze the data, including the units of analysis, the procedures, authenticity and trustworthiness, and any potential researcher bias. Last, the chapter contains a brief review of researcher bias and the ethics of this research, the IRB approval process, and confidentiality.

### **Research Questions**

Three research questions framed the design of this case study (Creswell, 2013; Miles & Huberman, 1994; Yin, 2014). The overarching research question was: How did protocol-structured discussions contribute to organizational learning at UES between 2012 and 2015? Further, this study was guided by the following related questions:

1. How did protocol-structured discussions affect the school culture at UES between 2012 and 2015?
2. What aspects of protocol-structured discussions transferred to teacher practices at UES between 2012 and 2015?

### **Overview of the Research Process**

The research at UES was guided by the use of a single-case embedded common qualitative case study (Creswell, 2009, 2013; Merriam, 2009; Yin, 2014). The focus was on DDDM protocols as a tool to help organizations learn during the school reform process, particularly as it pertains to teacher collaboration on planning instructional unit guides and looking at student work. UES is a school that used protocol-structured discussions as an essential part of its school reform process. To examine the research questions, I conducted interviews with the former principal, the current principal, and the division school improvement planning coordinator; focus group interviews with the

school improvement team and with two CLTs at the school; and document reviews and observations of CLT meetings to note the protocols being utilized at UES to accurately describe and understand how their use promoted organizational learning. The study involved an examination of how each of the collaborative teams at UES reviewed student work and fostered interdisciplinary learning at UES. The observations were critical for providing insight into the school's performance on the state assessments in reading and mathematics. Finally, to address issues of researcher bias, I maintained a reflexivity journal.

### **The Case Study Site: Description and Justification for Selection**

The study took place at a fully accredited, public elementary school. This school was chosen for the study because it was recognized by the state and the school division for its overall performance and achievement from the period of 2012 to 2015. I first learned about the success story of UES at a monthly principal meeting in Joshua County Public Schools (JCPS; a pseudonym). At that meeting, schools were recognized for their achievements on the state standardized assessment results. The practice of recognizing schools for their performance on these assessments put Title I principals at an unfair disadvantage, perhaps discouraging principals who may want to go to Title I schools because most of the recognitions are bestowed upon non-Title I schools. UES was one of the few Title I schools recognized on that day. One solution to address the discouragement of principals could be the use of various protocols to facilitate the meetings.

From 2012 to 2015, there were five schools in JCPS participating in some aspect of the state school improvement planning (SIP). UES was the only school out of the five

to get out of the state SIP process. In the 2014-2015 school year, UES had the highest mathematics performance in the entire school division on the Grade 3 through 5 standards of learning (SOL) tests. Out of the cohort of five schools participating in the state SIP process, comparable student performance data from 2012 to 2015 show that UES rose faster than the other four schools (Appendix W). When reviewing the recognitions and designations, it became apparent that leaders of other schools might be looking into how to make this kind of progress in such a short period of time. In addition to the excitement that was generated from the success of UES, members of the school leadership team have presented their school reform practices at several local and state conferences. Because of the accolades bequeathed on UES, it was chosen as the site for this single-case embedded case study. UES has a Head Start program, a Pre-school Initiative (PI) program, as well as kindergarten through fifth grades. UES is located in a suburban and transient school division in the mid-Atlantic part of the United States with an enrollment of approximately 700 students. It is classified as a Title I school because 50% or more of the student body receives free or reduced lunch. Students represent different ethnicities and socioeconomic levels. Their ethnic backgrounds include White, Black, Hispanic, and Asian. The student population consists of 77% Hispanics of any race, 10% African Americans, approximately 4% Asians, 7% White, and 3% of the student population identifies as two or more races. Approximately 90% of the student population qualifies for free or reduced lunch. In addition, 66% of the student population is classified as limited English proficiency, 6% are labeled as gifted, and 13% are classified as special education. Last, 100% of the student population is classified as Title I because UES uses a school-wide Title I model instead of a targeted assistance model.

In a school-wide model, all students are classified as Title I and therefore can receive remedial services by the Title I teachers in reading and mathematics. In a targeted assistance Title I program, only students who are identified receive services from the Title I teachers. The school-wide Title I model allows for greater flexibility. The school mobility rate at UES is 31%. The average daily attendance is above 95% with approximately 21% of students being absent more than 10 days.

Creswell (2013) suggested selecting cases for a study through purposeful sampling to discover and understand a phenomenon (Merriam, 2009; Patton, 2002; Yin, 2014). For the purpose of this study, I selected the site because of the buzz it created in the school division as opposed to using purposeful sampling. UES was an exemplar site because of the buzz and the accolades it received from the governor for meeting the needs of ELL students. In addition, it earned a School of Excellence award for two consecutive years. Similar to purposeful sampling, this selection strategy was critical because it allowed me to pick a case that was information-rich and would provide the necessary data for in-depth discussions to understand the phenomenon that occurred from 2012 through 2015 (Patton, 2002). This strategy was appropriate for the current study because UES was one of three schools in JCPS participating in the school reform process. It was the only school to exit the school reform process during 2012 through 2015. The research was limited to one school division that was selected prior to the selection of the school. UES had not met the federal AMO targets for several years prior to the appointment of the new principal. During the period of 2012 to 2015, UES was the only school participating in the school reform process that consistently engaged staff in organizational learning through the use of protocols.

UES is known within the school division as a pioneer in leading the school reform process through the use of protocol-structured discussions. The work at UES has become a model for other schools in the school division. Members of the school faculty have presented at several local and state conferences and have been recognized by high-ranking political officials within the state and local governments. As an elementary school principal, I have experience in engaging my staff in the use of protocol-structured discussions to look at student data and plan instructional unit guides. This process began many years ago when we were in the school reform process. Because of my experience in this area, I was intrigued by the work being done at UES as I employed a similar approach when I led the school reform process almost a decade ago using systems and processes for DDDM, RtI, and MTSS.

### **Research Participants**

Participants in the study at UES included the former principal, current principal, current assistant principal, Title I supervisor, former Title I professional development specialist, members of the third grade and fourth grade CLTs, and several ESOL, SPED, reading, and math specialists. The current principal of UES, Lindsay, took over for Howard at the beginning of the 2015-2016 school year. She has 17 years of experience in education, 13 of which were at UES. In addition, several members of the SIP team who were instrumental in the implementation of protocol-structured discussions at UES from 2012 to 2015 participated in the study. These participants' experience in education ranged from 1 year to over 35 years. Table 2 provides further detail on each participant in the study.

Table 2

*Demographic Data for Participants*

Participant Pseudonyms	Position	Previous Position	Years of Service	
			At UES	In Education
Howard	Associate Superintendent	Former Principal of UES	3	16
Lindsay	Principal of UES	Assistant Principal of UES	15	17
Lauren	Assistant Principal	Administrative Assistant	1	18
Jessica	Title 1 and Early Literacy Supervisor	Assistant Principal in JCPS	6	25
Brittany	Assistant Principal	Title 1 Professional Development Specialist	4	23
Mitzy	3rd Grade Teacher	Second Grade Teacher	10	10
Louise	3rd Grade Teacher	3rd Grade Teacher	4	6
Gladys	3rd Grade Teacher	2nd Grade Teacher	9	9
Alyssa	3rd Grade Teacher	3rd Grade Teacher	6	8
Katie	3rd Grade Teacher	3rd Grade Teacher	4	4
Chloe	4th Grade Teacher	3rd Grade Teacher	2	2
Ana	4th Grade Teacher	4th Grade Teacher	4	4
Regina	4th Grade Teacher	3rd Grade Teacher	4	4
Alexis	4th Grade Teacher	Student Teacher	1	1
Juliana	ESOL Specialist	ESOL Specialist	10	10
Jean	ESOL Specialist	ESOL Specialist	6	6
Heather	ESOL Specialist	ESOL Specialist	8	8
Catherine	ESOL Specialist	ESOL Specialist	5	5
Kendall	LD Specialist	LD Specialist	15	15
Tracy	Math Specialist	Classroom Teacher	3	19
Joanne	Reading Specialist	Reading Specialist	15	35

**Units of Analysis**

According to Yin (2014), research questions guide the units of analysis in case study research. Units of analysis are the people, programs, events, occurrences, or



incidents to be studied in case study research (Patton, 2002). Table 3 aligns the research questions with the units of analysis. The main unit of analysis was UES and the embedded units of analysis were the third and fourth grade CLTs. The overarching research question was designed to examine how protocol-structured discussions contributed to organizational learning at UES between 2012 and 2015. Therefore, the embedded units of analysis were the third grade CLT, fourth grade CLT, school-based leaders, and school division supervisors. The second and third research questions were designed to explore how protocol-structured discussions affected the culture at UES and the aspects of protocol-structured discussions that were transferred to teachers' classroom practice between 2012 and 2015. Based on these two questions, the CLTs, school-based leaders, and school division supervisors served as the units of analysis.

Table 3

*Relationship Between Research Questions, Units of Analysis, and Data Sources*

Research Questions	Units of Analysis	Data Sources
1. How did protocol-structured discussions contribute to organizational learning at UES between 2012 and 2015?	3rd Grade CLTs	Individual Interviews
	4th Grade CLTs	Focus Group Interviews
	School-Based Leaders	Observations
	School Division Supervisors	Document Reviews Reflexivity Journal
2. How did protocol-structured discussions affect school culture at UES between 2012 and 2015?	3rd Grade CLTs	Individual Interviews
	4th Grade CLTs	Focus Group Interviews
	School-Based Leaders	Observations
	School Division Supervisors	Document Reviews Reflexivity Journal
3. What aspects of protocol-structured discussions transferred to teacher practices at UES between 2012 and 2015?	3rd Grade CLTs	Individual Interviews
	4th Grade CLTs	Focus Group Interviews
	School-Based Leaders	Observations
	School Division Supervisors	Document Reviews Reflexivity Journal

**Research Design Framework**

During the course of conducting research at UES, I used a qualitative case study approach (Creswell, 2009; Merriam, 2009; Yin, 2014). Creswell (2013) characterized a case study as a “qualitative approach in which the investigator explores real-life, contemporary bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information” (p. 97). Case study research allows a researcher to investigate a current phenomenon in a real-life context (Yin, 2014). According to Yin (2014), there are four types of case study designs a researcher can utilize to conduct a qualitative study: (a) single-case (holistic), (b) single-case (embedded), (c) multiple-case (holistic), and (d) multiple-case

(embedded). Holistic case studies have one single unit of analysis whereas embedded case studies have multiple units of analysis (Yin, 2014). In order to complete single-case studies, Yin posited five rationales: critical, unusual, common, revelatory, and longitudinal (p. 51). According to Yin, “This means the need for a decision, prior to any data collection, on whether you are going to use a single case or multiple cases in your study” (p. 51).

Single-case common case study is described as a case study where “the objective is to capture the circumstances and conditions of an everyday situation” (p. 52). This single-case embedded common qualitative case (Yin, 2014) study research at UES was designed to find common themes that affected organizational learning. This particular case met the criteria for a single-case embedded common case study because the research questions were about one school during a specific period of time. However, I looked closely at several CLTs at UES. The third and fourth grade CLT teams served as the embedded units of analysis. Single-case embedded case study is especially important when a researcher is looking to represent the critical test of a significant theory as well as document the lessons it might provide about the social processes related to some theoretical interest (Yin, 2014). Last, single-case embedded common case study is important because unlike multiple-case studies where more than one case is studied, the possibility of the data collected being diluted is minimal.

A challenge of a single-case embedded case study is the focus on one subunit level; therefore, it fails to return to the larger unit of analysis (Yin, 2014). In addition, getting the scope of the study correct because the study may be broad or narrow in scope is a challenge (Creswell, 2013). Sometimes the research topic may be too narrow, and

the researcher must make a decision pertaining to which bounded system to study (p. 101). In a broad topic, a researcher might use a multiple-case study. According to Creswell (2013), “The study of more than one case dilutes the overall analysis; the more cases an individual studies, the less the depth in any single case” (p. 101). Single-case embedded common case study methodology was chosen for this research because of its importance in establishing the meaning of the phenomenon at UES and because of the reliance on observable occurrences associated with the use of protocol-structured discussions from the viewpoints of the participants (Creswell, 2013; Yin, 2014).

The focus of the research at UES was on the systems and processes of individuals and groups as they engaged in organizational learning through the use of DDDM protocols to facilitate school change. According to Merriam (2009), case study is suitable when there are many potential variables available to understand a phenomenon. In this study, there were a number of potential variables to understand the phenomenon of school change, including the leadership strategies used by division and school-based leaders, organizational structures, group processes, teacher practices, and student test scores.

The concept map in Figure 6 provides an overview of the methods and sources used to collect data to complete this research study. The data from the individual and focus group interviews with the third grade, fourth grade, and SIP team provided further insight into the protocol-structured discussions at UES. In addition to the interviews, I conducted observations of the third and fourth grade CLTs, and analyzed several documents to find common themes that led to the success at UES on the state assessments in reading and mathematics for 3 years. Upon completing this study, the

findings add to the body of research on protocol-structured discussions as a tool in organizational learning, specifically the school reform process.

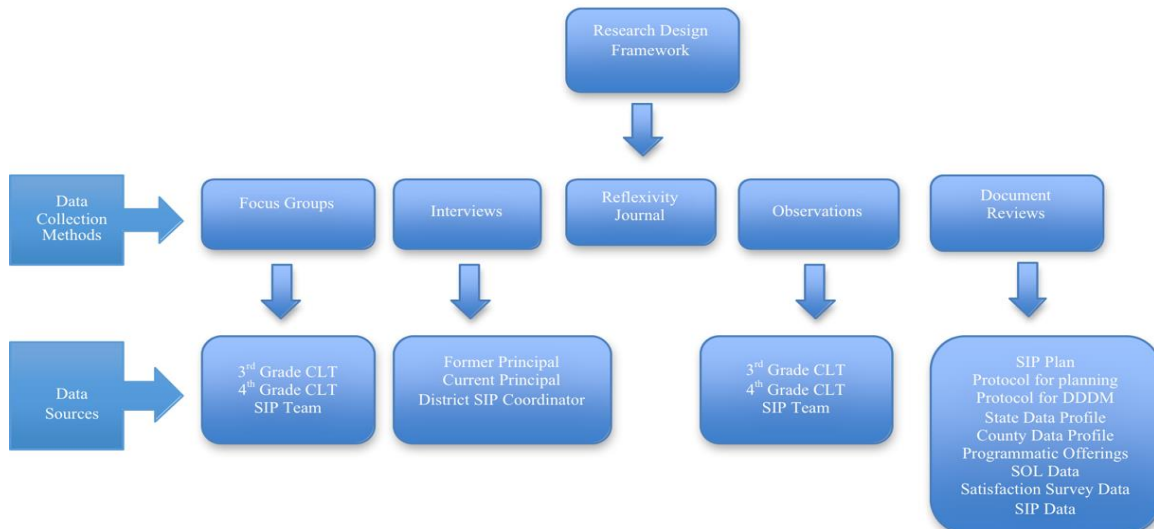


Figure 6. Concept map.

### Data Collection Methods

During case study research, the data collected should come from a variety of sources (Yin, 2014) and must be detailed and in-depth (Creswell, 2013). For this research study, I used a combination of interviews (individual and focus groups), observations, and document reviews to collect the data and maintained a reflexivity journal. I analyzed documents describing programmatic offerings and reviewed the protocols CLTs employed at UES to engage in organizational learning, specifically protocols to improve interdisciplinary learning and looking at student work. In addition, I conducted two observations of the third and fourth grade CLTs. The data collected from the interviews were triangulated to create themes. The themes that emerged from the data served as a basis for the findings of the research and provided insight into areas for further research.

## **Interviews**

The primary method of data collection was a series of interviews (Marshall & Rossman, 2011; Merriam 2009; Yin, 2014) with the leadership team, school-based leaders, teachers, division SIP coordinator, and CLTs to gauge their perspectives on how protocol-structured discussions transformed the school reform process at UES and provide insight into their effects on organizational learning at UES. Interviews were essential in this case study because they provided a rich description of the significant events that happened at UES.

Interview questions were developed based on the research topic. All interviews were completed in semi-structured and open-ended format. The average length of the interviews was 35 to 45 minutes. I developed several guided theme questions for the interviews with the former and current principals. The same processes were followed for the interview questions asked of the division SIP coordinator, the third and fourth grade CLTs, and school-based SIP team.

Patton (2002) outlined six kinds of interview questions a researcher can ask of people when conducting interviews or focus groups: (a) experience and behavior, (b) opinion and value, (c) feeling, (d) knowledge, (e) sensory, and (f) background and demographic. Table 4 provides a brief synopsis of each question type and shows the relationship between Patton's six types of questions to the interview protocols used for the individual and focus group interviews.

Table 4

*Relationship Between Patton’s Six Types of Questions and the Interview Protocol*

Patton’s Question Focus	Interview Questions for Former Principal	Interview Questions for Current Principal	Interview Questions for Division SIP Coordinator
<b>Behaviors/experiences</b>			
These types of questions provide information about a person’s experience, actions, and activities in a manner where the observer would observe if they were present.	What aspects of protocol-structured discussions are transferred to teachers’ classroom practice?	What aspects of protocol-structured discussions are transferred to teachers’ classroom practice?	
<b>Opinions/values</b>			
These types of questions provide information in a cognitive and interpretive manner about opinions, judgments, and values as opposed to actions and behaviors. It helps the interviewer see what the interviewee is thinking.	How has the use of protocols changed learning for teachers, students and administrators at UES?  How do teachers’ thinking change after they engage in protocol-structured discussions?	How has the use of protocols changed learning for teachers, students and administrators at UES?  How do teachers’ thinking change after they engage in protocol-structured discussions?	UES received several recognitions by the state and division during 2012 to 2015. From a central office perspective, what do you think contributed to these recognitions?  How do teachers’ thinking change after they engage in protocol-structured discussions?

(continued)

Table 4 (continued)

*Relationship Between Patton’s Six Types of Questions and the Interview Protocol*

Patton’s Question Focus	Interview Questions for Former Principal	Interview Questions for Current Principal	Interview Questions for Division SIP Coordinator
Knowledge			
These types of questions provide information about a person’s factual information. It helps the interviewer see what the interviewee knows.	<p>Why did you decide to use protocol-structured discussions as a school reform strategy at UES?</p> <p>How would you describe the protocol UES uses to engage teachers in the planning of instructional units?</p> <p>How would you describe the protocol UES uses to engage teachers in Data-Driven Decision-Making?</p> <p>What aspects of protocol-structured discussions are transferred to teachers’ classroom practice?</p>	<p>How would you describe the protocol your school uses to engage teachers in the planning of instructional units?</p> <p>How would you describe the protocol your school uses to engage teachers in Data- Driven-Decision-Making?</p> <p>What aspects of protocol-structured discussions are transferred to teachers’ classroom practice?</p>	<p>How would you describe the data and planning protocols UES uses to engage teachers in DDDM?</p> <p>What aspects of protocol-structured discussions are transferred to teachers’ classroom practice?</p>

(continued)



Table 4 (continued)

*Relationship Between Patton’s Six Types of Questions and the Interview Protocol*

Patton’s Question Focus	Interview Questions for Former Principal	Interview Questions for Current Principal	Interview Questions for Division SIP Coordinator
<b>Background</b>			
These types of questions provide standard background information and help the interviewer understand the interviewee in relation to other people.	How did the use of protocols influence school culture? What evidence do you have to justify the influence on school culture?	What changes, if any, have you made at UES pertaining to the use of protocol-structured discussions?	How has the principal of UES made the use of protocol-structured discussion an integral part of the school reform process?  What supports are provided to schools during the school reform process? Are the supports the same at all schools?

Prior to beginning the research at UES, I tested the interview questions with another administrator and a few teachers in the same division as UES; however, the pilot test did not encompass any teachers from the site where the research was conducted. The interview protocols for the former principal (Appendix A) and current principal (Appendix B) were as follows.

The questions for the former principal included:

1. Why did you decide to use protocol-structured discussions as a school reform strategy at UES?
2. How did the use of protocols influence school culture? What evidence do you have to justify the influence on school culture?
3. How has the use of protocols changed learning for teachers, students, and administrators at UES?

4. How would you describe the protocol UES uses to engage teachers in the planning of instructional units?
5. How would you describe the protocol UES uses to engage teachers in DDDM?
6. How does teachers' thinking change after they engage in protocol-structured discussions?
7. What aspects of protocol-structured discussions are transferred to teachers' classroom practice?
8. Is there anything else you would like to add?

The questions for the current principal included:

1. What changes, if any, have you made at UES pertaining to the use of protocol-structured discussions?
2. How has the use of protocols changed learning for teachers, students, and administrators at UES?
3. How would you describe the protocol your school uses to engage teachers in the planning of instructional units?
4. How would you describe the protocol your school uses to engage teachers in DDDM?
5. How does teachers' thinking change after they engage in protocol-structured discussions?
6. What aspects of protocol-structured discussions are transferred to teachers' classroom practice?
7. Is there anything else you would like to add?

The interview protocol for the division SIP coordinator (Appendix C) was as follows:

1. What supports are provided to schools during the school reform process? Are the supports the same at all schools?
2. UES received several recognitions by the state and division during 2012 to 2015. From a central office perspective, what do you think contributed to these recognitions?
3. How has the principal of UES made the use of protocol-structured discussions an integral part of the school reform process?
4. How would you describe the data and planning protocols UES uses to engage teachers in DDDM?
5. How does teachers' thinking change after they engage in protocol-structured discussions?
6. What aspects of protocol-structured discussions are transferred to teachers' classroom practice?
7. Is there anything else you would like to add?

One of the shortcomings of interviews in qualitative research pertains to trust between the interviewer and interviewee. If trust is not established, the interviewee may not feel comfortable sharing information freely, which prevents the interviewer from collecting the data needed to conduct the study. In addition to trust, another shortcoming is that the interviewer might not ask the appropriate follow-up, elaborating questions to gather additional data (Marshall & Rossman, 2011, p. 145). Marshall and Rossman (2011) described the process of asking follow-up questions as "probes." According to Marshall and Rossman, conducting interviews is valuable because it conveys that the

participants' viewpoints are useful. In order to address the shortcomings of interviews in qualitative research, I used multiple data sources to triangulate the information. I also used member checking (Creswell & Miller, 2000) to ensure validity. I provided each participant in the study an opportunity to review the final interview transcripts before I triangulated the data collected at UES. Lincoln and Guba (1985) noted member checking to be "the most crucial technique for establishing credibility" (p. 314). It improves the validity of the research because it solicits participants' views of the credibility of the findings and interpretations (Merriam, 1998).

### **Focus Groups**

Focus group interviews with the CLTs and SIP team were another primary source of data. Focus group interviews are commonly described as interviews with a group of people who have knowledge about a specific topic (Merriam, 2009). Conducting focus groups yields data in quantity quickly (Marshall & Rossman, 2011). The focus group format also allowed the participants to hear each other's views (Patton, 2002) and provided opportunities for discourse as I collected descriptive data on the use of protocol-structured discussions at UES during the school reform process. In addition, the focus group interviews enhanced the data quality by affording participants the opportunity to provide checks and balances on each other as they engaged in a discussion (Patton, 2002), essentially "weeding out false or extreme views" (p. 386). Some of the limitations of focus group interviews include that the total number of questions that can be asked is restricted in the group setting, response time is restricted, confidentiality cannot be assured, and the format can prevent those with minority viewpoints from speaking freely (Patton, 2002). I worked collaboratively with the school principal to select participants

for the focus group interviews based on the criteria set forth in the research. Participants were contacted by email (Appendix S). Prior to conducting the focus group interviews, I read the focus group introduction, prompting, and closing protocol to each focus group (Appendix T). Each focus group interview lasted approximately 45 minutes to 1 hour. The total number of participants for the focus group interviews was determined by the composition of the CLTs. Table 5 outlines Patton’s (2002) question types and the focus group interview protocol used to conduct the research at UES.

Table 5

*Relationship Between Patton’s Six Types of Questions and the Focus Group Protocol*

Patton’s Question Focus	Interview Questions for 3rd, 4th, and SIP Focus Groups
<p>Behaviors/experiences</p> <p>These types of questions provide information about a person’s experience, actions, and activities in a manner where the observer would observe if they were present.</p>	<p>What aspects of protocol-structured discussions are transferred to teachers’ classroom practice?</p>
<p>Opinions/values</p> <p>These types of questions provide information in a cognitive and interpretive manner about opinions, judgments, and values as opposed to actions and behaviors. It helps the interviewer see what the interviewee is thinking.</p>	<p>How has the use of protocols changed learning for teachers, students and administrators at UES?</p> <p>How do teachers’ thinking change after they engage in protocol-structured discussions?</p>
<p>Knowledge</p> <p>These types of questions provide information about a person’s factual information. It helps the interviewer see what the interviewee knows.</p>	<p>What protocols do you use to plan instructional units? Why is this protocol important?</p> <p>How would you describe the protocol your school uses to engage teachers in DDDM?</p> <p>What aspects of protocol-structured discussions are transferred to teachers’ classroom practice?</p>

(continued)

Table 5 (continued)

*Relationship Between Patton's Six Types of Questions and the Focus Group Protocol*

Patton's Question Focus	Interview Questions for 3rd, 4th, and SIP Focus Groups
<p>Background</p> <p>These types of questions provide standard background information and help the interviewer understand the interviewee in relation to other people.</p>	<p>What is the structure of your CLT meetings? Who is included on the specific CLT?</p>

According to Merriam (2009), having a facilitator who has experience with a topic matters when conducting focus group interviews because it allows the interviewer to ask follow-up questions based on answers provided by the interviewees to collect more in-depth data. In addition to more in-depth data, experience with the subject matter can minimize subtle influences between the interviewer and interviewee. Yin (2014) described this process as *reflexivity*, where the interviewer's perspective unknowingly influences the interviewee's responses (p. 112). My role as an elementary principal with experience in the school reform processes at the state and local division, as well as my understanding of DDDM and the use of protocols to facilitate organizational learning, made me equipped to conduct the focus interviews. Upon collecting the data, I looked for themes regarding the use of DDDM protocols at UES. These themes were triangulated with the themes that emerged from the other data sources. One of the strengths of focus groups is they allow participants to speak freely (Marshall & Rossman, 2011, p. 145), therefore providing information that may present a contrasting view to the individual interviews. The interview protocols for the focus groups (CLTs and SIP team) were as follows (Appendix D):

1. What is the structure of your CLT meetings? Who is included on the specific CLTs?
2. What protocols do you use to plan instructional units? Why is this protocol important?
3. How has the use of protocols changed learning for teachers, students, and administrators at UES?
4. How would you describe the protocol your school uses to engage teachers in DDDM?
5. How does teachers' thinking change after they engage in protocol-structured discussions?
6. What aspects of protocol-structured discussions are transferred to teachers' classroom practice?
7. Is there anything else you would like to add?

### **Document Reviews**

Throughout this study, I collected and analyzed documents and artifacts pertaining to UES (Appendix V). Document review includes an analysis of documents produced in the course of everyday events (Marshall & Rossman, 2011). One of the key advantages of using document reviews is that it affords researchers the opportunity to collect data without causing a major interruption to the learning environment. One weakness of document review lies in the interpretation of the written materials (Marshall & Rossman, 2011) because the researcher determines where the emphasis lies after the data have been collected (pp. 161-162).

Documents related to the topic provided important data and served a critical role (Yin, 2014) in the data collection for this case study. Patton (2002) described this process as getting a behind the scenes look. Some of the contextual documents I collected during the study were state data profiles, school division profiles, UES SIP plan, programmatic offerings, and the various protocols utilized by the CLTs.

Document reviews provided another data source to help triangulate what was said in the individual interviews and focus groups. Marshall and Rossman (2011) described the process of triangulation as compensation for the weakness of another research approach. Merriam (1998) posited that it is essential for the researcher to determine the authenticity as well as origins when working with documents. In addition, purpose, accuracy, author, and context are essential to determining the quality of a document (Merriam, 1998). I used Merriam's Document Analysis Authenticity Protocol (Appendix E) and the Comparative Analysis of Protocols for Improving Professional Practice and Protocols for Looking at Student Work (Table 2; Appendix F) to analyze the authenticity of the documents collected at UES. The same protocols were utilized to determine the authenticity of any related documents outside of UES. The document review protocol included the following questions:

1. What is the history of the document?
2. How did it come into my hands?
3. What guarantee is there that it is what it pretends to be?
4. Is the document complete, as originally constructed?
5. Has it been tampered with or edited?



6. If the document is genuine, under what circumstances and for what purposes was it produced?
7. Who was/is the author?
8. What was (s)he trying to accomplish? For whom was the document intended?
9. What were the maker's sources of information? Does the document represent an eyewitness account, a secondhand account, a reconstruction of an event long prior to the writing, an interpretation?
10. What was or is the maker's bias?
11. To what extent was the writer likely to want to tell the truth?
12. Do other documents exist that might shed additional light on the same story, event, project, program, context? If so, are they available, accessible? Who holds them? (p. 112-122).

In addition to Merriam's (1998) Document Analysis Authenticity Protocol, I used Johnson and Christensen's (2012) protocol entitled, "How to Judge the Quality of Internet Resources," to determine the validity of the document and the information provided in all web-based documents. The components of Johnson and Christensen's protocol are: (a) authority, or the author's role and credentials; (b) accuracy, or name and institution that publishes the page with contacting information; (c) objectivity, which provides accurate and objective information with no little or no advertising; (d) currency, which indicates the webpage and links are updated regularly; and (e) coverage, or the viewing of the information on the webpage without paying fees or additional software (p. 70).

The information gathered from the document reviews was categorized based on content and later utilized in triangulation of the data collected from the interviews with the principal, teachers, and other school-based leaders. Appendix G provides further detail on Johnson and Christensen’s (2012) website analysis protocol. Table 6 provides a comparative analysis of the various protocols I analyzed at UES (See Appendices H, I, and J).

Table 6

*Comparative Analysis of the Protocols Utilized at UES*

Protocols	Characteristics
Unpacking the Standards	<ul style="list-style-type: none"> <li>• Primarily focus on teacher’s understanding of the standards</li> <li>• Alignment of assessment to the standards</li> <li>• Determine skills needed for mastery of the standards</li> <li>• Relationship between state standards and WIDA standards</li> </ul>
Framing the Standards	<ul style="list-style-type: none"> <li>• Development of concept/learning sequence</li> <li>• Mapping of instructional unit plan</li> <li>• Connects the standards and the concept/learning sequence</li> <li>• Provides for on the spot PD</li> <li>• Development of a focus, guided and independent practice lessons</li> </ul>
What, Say what, Now what	<ul style="list-style-type: none"> <li>• Provides teachers an avenue to reflect on classroom practices</li> <li>• Provides teachers an avenue to look at student work and assessment results</li> <li>• Allows teachers to determine next steps for remediation and enrichment</li> </ul>

## **Observations and the Reflexivity Journal**

Observation is central to qualitative research (Marshall & Rossman, 2011). Observations entail the systematic notation and recording of events as well as behaviors and artifacts where the research is being conducted (Marshall & Rossman, 2011). While conducting the observations of the third and fourth grade CLTs, I documented my notes in a specific reflexivity format (See Appendix K). I focused on the interactions of the teachers with each other during the planning of a unit guide and the disaggregation of a given assessment. In addition to the focus on teacher interactions, I documented the process the CLTs used to make use of certain protocols during the planning and DDDM processes. In order to remain non-judgmental, I maintained a reflexivity journal throughout the entire study. The reflexivity journal provided me a means of emphasizing the importance of self-awareness, political/cultural consciousness, and ownership of one's perspective (Patton 2002, p. 64). Patton (2002) asserted that "the qualitative analyst owns and is reflective about her or his own voice and perspective" (p. 494).

A researcher with a credible voice conveys to the participants authenticity and trustworthiness (Patton, 2002). In order to accomplish this, I used the Field Notes Reflexivity Protocol (Patton, 2002). I focused on self-reflexivity, reflexivity about participants, and reflexivity about audience. While conducting this qualitative research study, it was important for me to continue to reflect on my own practice to observe and eliminate biases, values, and experiences (Creswell, 2013) to ensure the data collection process remained objective. Figure 7 and Appendix L contain a sample of the Field Notes Reflexivity Protocol I used during the study.

**Date:**

**Participants:**

**Location:**

**Facilitator:**

### **Field notes /Reflexivity Protocol**

1.) "The penseive" (Gerstl Pepin & Patrizio, 2009; Rowling, 2000):

2.) Thick, rich description (including context):

3.) Notable Quotes:

4.) **Self-Reflexivity**

*Prompts:* "What do I know? How do I know what I know? What shapes and has shaped my perspective? How have my perceptions and my background affected the data I have collected and my analysis of those data? How do I perceive those I have studied? With what voice do I share my perspective? What do I do with what I have found?" (Patton, 2001, p. 495)

5.) **Reflexivity about participants**

*Prompts:* "How do those studied know what they know? What shapes and has shaped their world view? How do they perceive me, the inquirer? Why? How do I know?" (p. 495)

6.) **Reflexivity about audience**

*Prompts:* "How do those who receive my findings make sense of what I give them? What perspectives do they bring to the findings I offer? How do they perceive me? How do I perceive them? How do these perceptions affect what I report and how I report it?" (p. 495).

*Figure 7.* Field notes reflexivity protocol.

### **Data Collection**

The data collection consisted of three individual interviews and three focus groups. In addition to the three focus group interviews conducted with the third grade,

fourth grade, and SIP team, I conducted two observations at UES. The first observation was with the fourth grade CLT as they planned math unit 9. The second observation was with the third grade CLT as they engaged in a DDDM process to review student assessment results from math unit 6. My last observation was with the fourth grade CLT team. During this observation, I was able to see how the CLT disaggregated data from the math unit 9 they had planned during my first observation. All observations, interviews, and focus groups were collected during the months of March and June of 2016. Table 7 provides an overview of the data sources and participant information.

Table 7

*Overview of Data Sources and Participant Information*

Data Sources	Position	Pseudonym	Embedded Case #
Observation #1	Principal	Lindsay	001
	4th Grade Teacher	Chloe	001
	4th Grade Teacher	Ana	001
	4th Grade Teacher	Regina	001
	4th Grade Teacher	Absent	001
	LD Teacher	Kendall	001
	ESOL Teacher	Juliana	001
	Math Specialist	Tracy	001
Observation # 2	Assistant Principal	Lauren	002
	3rd Grade Teacher	Mitzy	002
	3rd Grade Teacher	Louise	002
	3rd Grade Teacher	Gladys	002
	3rd Grade Teacher	Alyssa	002
	3rd Grade Teacher	Katie	002
	ESOL Teacher	Heather	002
	ESOL Teacher	Jean	002
	Math Specialist	Tracy	002

(continued)

Table 7 (continued)

*Overview of Data Sources and Participant Information*

Data Sources	Position	Pseudonym	Embedded Case #
Interview # 1	SIP Coordinator	Jessica	003
Interview # 2	Former Principal	Howard	004
Interview # 3	Current Principal	Lindsay	005
Focus Group # 1	4th Grade Teacher	Chloe	006
	4th Grade Teacher	Ana	006
	4th Grade Teacher	Absent	006
	4th Grade Teacher	Absent	006
	ESOL Teacher	Juliana	006
Focus Group #2	3rd Grade Teacher	Mitzy	007
	3rd Grade Teacher	Absent	007
	3rd Grade Teacher	Gladys	007
	3rd Grade Teacher	Absent	007
	3rd Grade Teacher	Katie	007
	Math Specialist	Tracy	007
Focus Group #3	ESOL Teacher	Catherine	008
	Math Specialist	Tracy	008
	Reading Specialist	Joanne	008
	LD Specialist	Kendall	008
	Former Title 1 Specialist/Assistant Principal	Brittany	008
Observation #3	Principal	Absent	009
	4th Grade Teacher	Chloe	009
	4th Grade Teacher	Absent	009
	4th Grade Teacher	Regina	009
	4th Grade Teacher	Alexis	009
	LD Teacher	Kendall	009
	ESOL Teacher	Juliana	009
	Math Specialist	Absent	009

### **Data Analysis Procedures**

Merriam (1998) defined data analysis as “the process of making sense out of the data . . . it involves consolidating, reducing, and interpreting what people have said and what the researcher has seen and read-it is the process of making meaning” (p. 178). Similarly, Yin (2014) defined data analysis as “consisting of examining, categorizing, tabulating, testing or otherwise recombining evidence, to produce empirically based findings” (p. 133). Qualitative analysis renovates data into conclusions (Patton, 2002). Table 8 outlines the relationship of the three research questions of the study and the data sources collected and analyzed to depict the phenomenon at UES.

Table 8

*Alignment of Research Questions and Data Sources*

Research Questions	Data Sources
1. How did protocol-structured discussions contribute to organizational learning at UES between 2012 and 2015?	<ul style="list-style-type: none"> <li>• Former principal interview</li> <li>• Current principal interview</li> <li>• Division SIP Coordinator Interview</li> <li>• 3rd grade CLT focus group interview</li> <li>• 4th grade CLT focus group interview</li> <li>• SIP team focus group interview</li> <li>• 3rd grade CLT observation</li> <li>• 4th grade CLT observation</li> <li>• School data profile</li> <li>• State data profile</li> <li>• Protocol for planning</li> <li>• Protocol for DDDM</li> <li>• Reflexivity journal</li> </ul>
2. How did protocol-structured discussions affect school culture at UES between 2012 and 2015?	<ul style="list-style-type: none"> <li>• 3rd grade CLT focus group interview</li> <li>• 4th grade CLT focus group interview</li> <li>• SIP team focus group interview</li> <li>• 3rd grade CLT observation</li> <li>• 4th grade CLT observation</li> <li>• Document reviews</li> <li>• Reflexivity journal</li> </ul>
3. What aspects of protocol-structured discussions transferred to teacher practices at UES between 2012 and 2015?	<ul style="list-style-type: none"> <li>• 3rd grade CLT focus group interview</li> <li>• 4th grade CLT focus group interview</li> <li>• SIP team focus group interview</li> <li>• 3rd grade CLT observation</li> <li>• 4th grade CLT observation</li> <li>• Document reviews</li> <li>• Reflexivity journal</li> </ul>



UES served as the main unit of analysis, while the third and fourth grade CLTs served as embedded units of analysis. The data from the state and local data profiles as well as the interviews with the SIP team, former principal, current principal, and the division SIP coordinator were used to define the main unit of analysis. Data from the focus group interviews, document reviews, and the observations of the CLTs were collected from the embedded units of analysis. Upon collecting the data from the main unit of analysis and the embedded units of analysis, I began the data analysis process.

According to Patton (2002), “The challenge in qualitative analysis lies in making sense of massive amounts of data” (p. 432). In order to make sense of the data collected at UES, I needed to be able to reduce the volume of the raw data by distinguishing what was trivial from what was significant, identify patterns, and develop a framework for communicating the meaning of the data (Patton, 2002). All individual and focus group interviews were digitally transcribed. The information gleaned from the individual interviews, focus groups, and any pertinent information from the CLT observation notes and document reviews was labeled and entered into NVivo 11 Pro. I created five internal folders in NVivo 11 Pro to store the appropriate data transcripts: (a) Document Reviews, (b) Focus Groups, (c) Interviews, (d) Observation Notes, and (e) Observation Transcripts. Once I received the transcription from the transcriber, I immediately stored it in the appropriate internal folder in NVivo 11 Pro. This tool assisted in determining whether any meaningful patterns were emerging. It also allowed me to keep the data organized, allowing for easier manipulation to establish patterns and themes.

After transcribing the individual and focus group interviews, I used a process of thematic emergence to identify themes in the data collected. Yin (2014) defined *thematic*

*emergence* as “searching [for] patterns, insights, or concepts that seem promising” (p. 135). In this research study, I used the constant comparative analysis method (Merriam, 1998, 2009) to determine themes in the data collected at UES. *Constant comparison* is commonly defined as a process whereby a researcher decides on the type of data that will be collected, therefore assigning categories, finding relationships between each category, and then comparing the findings to the data collected (Merriam, 1998).

I started the process of thematic emergence by coding the data in distinct categories: (a) third and fourth grade CLTs, (b) principal and former principal, (c) SIP team, and (d) SIP coordinator. Thereafter, I began highlighting key observables in the data and creating nodes in NVivo 11 Pro. One of the key observables during this process was the way some key information was standing out. Patton (2002) described this as *interocular significance*, or important information that hits the researcher in the face while analyzing data. I initially created 22 different nodes (Appendix U), and then combined the nodes because several patterns began to develop. I created a Word document to categorize all 22 nodes into four primary nodes. The primary nodes that were created set the stage for the themes that derived from my research. Several other themes developed from the data pertaining to organizational learning. These themes were not directly referenced by participants; however, they were indirectly stated in the participants’ responses to the research questions during triangulation. Some of the key observables from the data were assigned to multiple nodes if applicable. Table 9 provides a detailed description of the four major nodes and the number of times they were referenced in the different data sources. I also utilize the research questions to establish the final findings discussed in Chapter four.

Table 9

*Relationship Between Nodes, Themes, and Data Sources*

Nodes	Themes	Number of Times Referenced	Number of Data Sources
Organizational Learning	Organizational Learning Structure	111	9
	Leadership Influences on the Implementation and Sustainance of Organizational Learning Structure	78	9
	Developing a Professional Learning Model	Not Directly Referenced	-
	Impact of Professional Learning Model on Organizational Learning and Teacher Leadership	Not Directly Referenced	-
Culture	Effect of Protocols on School Culture	126	9
	Collaboration	191	5
Protocols Changed Learning	Protocols Changed Professional Learning and Instructional Practices	175	9
Protocols Effect on Teacher Thinking	Reflective Practices	70	7
	Classroom Practice	75	8

The data also included document reviews of the specific protocols teachers and school-based leaders used to engage in interdisciplinary learning and look at student work. All document reviews were linked to the node pertaining to the overall organizational structure of UES. The interviews and focus groups helped me understand the initial school change process. Observations of teacher meetings helped me to learn more about the sustainability aspect of school change. More specifically, I was able to see how protocol-structured discussions shaped teacher thinking and identify which aspects of those protocol-structured discussions carried over to classroom practices.

In Tables 10 through 13, I outline the three research questions of the study to the individual and focus group interview questions. As can be seen from the tables provided, the data collected from these interviews explicitly addressed each research question.

Table 10

*Alignment of Research Questions and Former Principal (FP) Interview Questions*

	FP Q1	FP Q2	FP Q3	FP Q4	FP Q5	FP Q6	FP Q7
How did protocol-structured discussions contribute to organizational learning at UES between 2012 and 2015?	X	X	X	X	X		
How did protocol-structured discussions affect school culture at UES between 2012 and 2015?		X	X			X	X
What aspects of protocol-structured discussions transferred to teacher practices at UES between 2012 and 2015?				X	X	X	X

Table 11

*Alignment of Research Questions and Current Principal (CP) Interview Questions*

	CP Q1	CP Q2	CP Q3	CP Q4	CP Q5	CP Q6
How did protocol-structured discussions contribute to organizational learning at UES between 2012 and 2015?	X	X	X	X		
How did protocol-structured discussions affect school culture at UES between 2012 and 2015?		X			X	X
What aspects of protocol-structured discussions transferred to teacher practices at UES between 2012 and 2015?			X	X	X	X

Table 12

*Alignment of Research Questions and Focus Group (FG) Interview Questions*

	FG Q1	FG Q2	FG Q3	FG Q4	FG Q5	FG Q6
How did protocol-structured discussions contribute to organizational learning at UES between 2012 and 2015?	X	X	X	X		
How did protocol-structured discussions affect school culture at UES between 2012 and 2015?		X	X		X	X
What aspects of protocol-structured discussions transferred to teacher practices at UES between 2012 and 2015?			X	X	X	X

Table 13

*Alignment of Research Questions and SIP Coordinator (SC) Interview Questions*

	SC Q1	SC Q2	SC Q3	SC Q4	SC Q5	SC Q6
How did protocol-structured discussions contribute to organizational learning at UES between 2012 and 2015?	X	X	X	X		
How did protocol-structured discussions affect school culture at UES between 2012 and 2015?			X		X	X
What aspects of protocol-structured discussions transferred to teacher practices at UES between 2012 and 2015?			X	X	X	X

**Authenticity and Trustworthiness**

Traditionally, concerns pertaining to trustworthiness or goodness and authenticity in qualitative research evolved from experimental sciences (Marshall & Rossman, 2011). In a qualitative research study, the main criterion for a researcher is to establish reliability, validity, objectivity, and generalizability to judge the soundness of the research (Creswell, 2013; Marshall & Rossman, 2011). To accomplish the soundness of qualitative research, Guba and Lincoln (2000) suggested four models: (a) credibility or truth-value, (b) dependability or consistency, (c) conformability or neutrality, and (d) transferability or applicability. Similarly, Yin (2014) provided four criteria for judging the quality of qualitative research designs: (a) construct validity, (b) internal validity, (c) external validity, and (d) reliability (p. 45). While the research of Guba and Lincoln (2000) is well known in the field of qualitative research, I used Yin’s (2014) model for judging the quality of qualitative research as a basis for the current research. During this

study, I focused on triangulation of the data sources and the use of member checking to strengthen the credibility of the research. In addition to triangulation and member checking, I utilized my reflexivity journal to conduct ongoing self-reflection to clarify researcher bias, made use of peer review or debriefing, and incorporated rich, thick description of findings so any preconceived notions would not be a factor in the data collection process and analysis.

*Triangulation* is a “validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study” (Creswell & Miller, 2000, p. 126). Similarly, Patton (2002) defined triangulation as “comparing and cross-checking the consistency of information derived at different times and by different means within qualitative study” (p. 559). Triangulation strengthens a study through the use of different data sources or inquiry methods to test for consistency in the research findings (Patton, 2002). This research involved the use of triangulation in a number of places.

Triangulation was built into this research study because of the different perspectives gathered from the school leaders, division SIP coordinator, focus groups, document reviews, and the reflexivity journal. Another unique aspect of the study is that it included the views of two different principals, two different grade level focus groups, a central office perspective, and the perspectives of several teachers and specialists as members of the SIP team. This unique view provided for even better triangulation. Each of the data sources related directly to the different themes that emerged from the research. Each of the participant groups provided similar insights into the phenomenon that occurred at UES from 2012 to 2015.

The interviews with the former principal and the current principal provided a unique view of the overall understanding and implementation of protocol-structured discussions during the school reform process from two different perspectives. They also provided some insight into how the current principal might or might not have made changes to the process upon assuming the post after the promotion of the former principal. Another area where triangulation existed in this research pertained to Research Questions 2 and 3, whereby teachers, CLTs, the SIP team, and other school-based leaders validated the work done by the principal in Research Question 1. Interviewing the teachers and conducting observations provided a good view of the implementation process. Finally, triangulation existed in this study by virtue of including an examination of student performance in teachers' individual classrooms on state assessments as well as the overall school performance.

Member checking (Creswell, 2013; Merriam, 2009; Yin, 2014) was utilized as a procedure to check the validity of the research by specifically focusing on the lens of the participants in the study. During member checking, I worked directly with the administrative team to review any outcomes, check for accuracy in the data, and get a better understanding of the data collected. All participants were afforded the opportunity to review the transcriptions from the data collected for accuracy and formulate further questions and or concerns pertaining to the research.

In addition, I worked closely with two external peer reviewers throughout the research. I provided copies of the de-identified data from the three focus groups and asked the first reviewer to provide specific feedback on what she believed were the big themes that emerged from the data. She sent me a copy of her notes via e-mail. After



reviewing her notes, we met for about an hour to compare and contrast our findings. I also provided this external peer reviewer copies of the de-identified data from the former principal, principal, and SIP coordinator interviews and asked her to identify the major themes in the data. We met a second time to discuss her findings. The second peer reviewer had the specific task of reviewing the data analysis component of the research. I shared a draft of the first two themes, followed by the other themes in the study, with him and asked for feedback pertaining to structure and content. Once I received the feedback, I made the necessary changes I felt were critical for the study. Dr. Patrizio, Dissertation Chair, and other members of the dissertation committee reviewed the coding themes from the information gathered from the individual and focus group interviews to ensure there was proper alignment with the research questions.

### **Validity**

Creswell and Miller (2000) defined *validity* in qualitative research studies as the accuracy and credibility of a researcher's account to represent each participant's reality. Credibility in qualitative inquiry depends on several factors. Patton (2002) outlined three main areas when looking at credibility during qualitative research: (a) rigorous methods for doing fieldwork, (b) the credibility of the researcher, and (c) the philosophical belief in the value of qualitative inquiry. Rigorous methods pertain to the data collection and analyzing process. The credibility of the researcher is dependent on training, experience, previous track record conducting research, how a person presents him or herself, and status (Patton, 2002). Philosophical belief in the value of qualitative research pertains to the researcher's value of naturalistic inquiry, qualitative methods, sampling strategies, holistic thinking, and inductive analysis (Patton, 2002).

In order to increase researcher credibility or validity in qualitative research, Creswell (2013) outlined a series of strategies and recommendations to check the accuracy of a researcher's findings: (a) prolonged engagement and persistent observation; (b) triangulation of data sources; (c) peer review or debriefing; (d) negative case analysis; (e) clarifying researcher bias; (f) use of member checking; (g) use of rich, thick descriptions of findings; and (h) external audits. This study encompassed five out of the eight strategies Creswell suggested: triangulation of data sources, member checking, self-reflection, peer debriefing, and the use of rich, thick descriptions of findings.

### **Internal Validity**

*Internal validity* provides the researcher an avenue to explore the relationships between different events in the study (Yin, 2014). Miles and Huberman (1994) asserted that internal validity pertains to questions such as, "Do the findings of the study make sense? Are they credible to the people we study and to our readers? Do we have an authentic portrait of what we were looking at?" (p. 278). The data in the current study were collected from a variety of sources, including interviews, focus groups, document reviews, protocols used, and the maintenance of a reflexivity journal. These sources helped strengthen the study and revealed any inconsistencies in the data.

Triangulation of data sources is a validity approach qualitative researchers utilize to determine the accuracy of findings in a research study (Creswell, 2013). It helps strengthen a qualitative case study through the use of multiple data sources or inquiry methods to test for consistency in the findings (Patton, 2002). For my research, I triangulated data collected from the individual interviews with the former principal, current principal, and SIP coordinator with data from the focus group interviews with the

school-based SIP team and the third and fourth grade CLTs to ensure there was internal validity. Similarly, the document reviews and the observations of the third and fourth grade CLTs provided data to ensure internal validity. These sources provided the necessary data to portray a precise picture of the best practices at UES.

### **External Validity**

*External validity* is commonly described as how well the findings of a study might be applied to other situations (Merriam, 2009). It provides for generalizations and opportunities for replication (Yin, 2014). This study had several limitations. One of the key limitations was that the study took place in a single Title I elementary school in a suburban school division. Another limitation was that the principal who began the process of using DDDM protocols as a tool during the school reform process was no longer the principal. The study was conducted to observe the phenomenon that occurred from 2012 to 2015. The current principal, who was appointed in 2015, was the former assistant principal and therefore had historical knowledge about the process and its inception. The new principal is considered to be an “insider.” Other limitations relate to the generalization of the results because the study was limited to one school that implemented protocol-structured discussions and DDDM processes. This does not mean that all schools that embark on a journey to infuse protocol-structured discussions into their school reform process or as part of the day-to-day operations of running a school will experience the same results. There are many other factors that lead to successful school reform processes. If another researcher decides to replicate the study at another elementary school, it is essential for the researcher to maintain vivid descriptions of the study as well as the reader’s interpretation of the findings (Yin, 2014). Based on my

capacity to document and convey the rich detailed descriptions of the data collected from the individual and focus group interviews and observations, the transferability of the findings will enable readers of the research and other researchers to interpret the findings. In order to maintain these vivid descriptions, I kept a reflexivity journal (Creswell, 2013; Creswell & Miller, 2000; Marshall & Rossman, 2011) to document my role as a researcher.

### **Construct Validity**

*Construct validity* certifies that the appropriate operational procedures are developed and followed throughout the study. Yin (2014) defined construct validity as “identifying correct operational measures for the concepts being studied” (p. 46). Construct validity in case study research is strengthened when the researcher employs multiple data sources, establishes a chain of evidence, and provides a thorough review of key informants (Yin, 2014). I used triangulation (Creswell, 2013; Creswell & Miller, 2000; Merriam, 2009; Patton, 2002; Yin, 2014) to determine the consistency of findings at UES. My research encompassed student achievement data on standardized assessments; this data source strengthened the qualitative data that I collected, thereby enhancing the construct validity of the study. One limitation of construct validity is researcher bias. To avoid researcher bias in this study, I looked at the data through a non-biased lens to the best of my ability and used the research journal as an opportunity to surface and examine my biases.

### **Reliability**

*Reliability* often refers to the stability of responses to multiple coders of data sets (Creswell, 2013). The objective of reliability is to ensure that if another researcher

follows the same series of procedures used by a previous researcher as well as conducts the same exact study, the researcher should arrive at the same findings (Johnson & Christensen, 2012; Yin, 2014). This is typically done when the new researcher follows the exact procedures from the earlier case. To avoid issues of reliability, I used case study protocols to address any issues with documentation (Yin, 2014). Throughout the duration of this research, I used the Document Analysis Authenticity Protocol (Merriam, 1998) and the Field Notes Reflexivity Protocol (Patton, 2002) to avoid issues of reliability. These protocols allowed for transparency by not allowing my personal experiences and professional judgments to affect the research. In addition to the two protocols mentioned above, the research at UES involved the use of statistical data from end-of-year state assessment results in reading and mathematics to provide another lens to the research being conducted. I made use of a professional transcriber to assist with the transcriptions of qualitative data from the individual and focus group interviews and made use of the reflexivity journal to document any potential biases.

### **Researcher Bias**

I have several years of experience working on school reform practices at JCPS. Because of my knowledge of the school reform processes in JCPS, I was consistently aware of this bias. Some of the advantages I have as a former participant in the school reform process in JCPS are: (a) I have first-hand knowledge of the struggles of UES prior to the appointment of the new principal, (b) I have knowledge of some of the systems and processes the former and current principal implemented since their appointments to the position, (c) I know some of the key personnel in the division to help me conduct the research, and (d) I have an excellent understanding of protocol-structured discussions as

it is a process I utilize at my school. The use of protocol-structured discussions to engage the staff at UES during the school reform process brought a certain affirmation to the work that I began several years ago. This type of learning continues to be an integral part of my leadership to this day. In order to eliminate my biases, I worked with the principal to identify the school-based leaders, CLTs, and SIP team members to interview. I utilized the reflexivity journal to ensure any potential blind spots did not affect the research at UES.

In addition to the school reform experience at JCPS, I have 3 years of experience with school reform processes as a classroom teacher in another mid-Atlantic state. This knowledge allowed me the opportunity to make connections, predictions, and probe for additional clarification in certain situations. As an elementary principal with 10 years of experience in JCPS, I have some thoughts, values, and experiences that I may not necessarily know exist. These biases did not surface until I actually began the research. If I was a researcher coming in to conduct the research at UES or had to go out and conduct the research at another school where I had no prior experiences, my views would be very different. While conducting the research, I needed to be conscientious about the construct from which I operate as compared to what a researcher from outside will bring to the table. Member checks and peer reviews were used throughout the study, further reducing any potential biases I brought to the table.

Despite the knowledge described above, it should be noted that I have never worked at UES nor do I have any direct relationship with the student body and faculty. In order to ensure the bias described above did not interfere with my research, I took several approaches to address this concern: (a) triangulation of all data collected

(Creswell, 2013; Creswell & Miller, 2000; Yin, 2014); (b) collected quantitative data on UES end-of-year summative assessments; (c) utilized the Document Review Analysis Protocol (Merriam, 1998) to review all documents; (d) maintained a reflexivity journal (Creswell, 2013; Creswell & Miller, 2000; Marshall & Rossman, 2011; Patton, 2002); (e) conducted member checks (Merriam, 2009) throughout the study; (f) used peer debriefing; and (g) followed the research design described in this chapter to document the rich, thick descriptions of the findings.

### **Ethics, IRB Approval, and Confidentiality**

During this research study, I followed the research guidelines set forth by the Institutional Review Board (IRB) at Virginia Tech (VT; See Appendix M). I followed a specific protocol of informed consent to safeguard the rights and confidentiality of all participants in the study (See Appendix N). Creswell (2013) posited that the ethical researcher assures the confidentiality of participants by refraining from identifying the individuals participating in the study. This was achieved by ensuring that I complied with the informed consent. The VT IRB approved the protocol I used for informed consent prior to the collection of any data during this study. I also followed all guidelines, approval procedures, and any protocols required by the school division's research board in the Office of Accountability. To protect the identities of the division, schools, and individuals, I used pseudonyms throughout the research.

I notified each participant orally and in writing of the goals of the study as well as the methods of data collection and analysis utilized in the study. All participants in the study were afforded the opportunity to ask questions and raise any concerns pertaining to the study. Participants had the opportunity to ask questions during the informed consent

process, and were also given my contact information and that of my dissertation advisor, Dr. Kami Patrizio, so they could ask any questions after the interview. I made available all written transcripts of the interviews conducted as well as provided member checking opportunities to gather feedback or any relevant comments or statements the participants felt were valuable to the study. I ensured that all participants knew of their rights to withdraw from the study (interviews, focus groups, or observation) at any point without prejudice or bias. My external peer editors only had access to the de-identified versions of the data and followed the guidelines set forth by the VT IRB and the school division's IRB to protect participants' confidentiality.

The data that were assembled were only accessible to my advisor, Dr. Kami Patrizio, and myself. Digital copies of the data were stored electronically in a password-protected computer in a separate unidentified folder. Additionally, an electronic copy of the data was stored on an encrypted external hard drive with a password-protected login. The password-protected encrypted external hard drive was stored in a secure location under lock and key. A hard copy of the data, research paper, and all transcripts from interviews, observations, documents, and a copy of the reflexivity journal are being stored in a locked cabinet. I will erase all electronic copies of the data collected and shred hard copies of all other data 3 years after the initial collection process.

Data collection began once the VT IRB and the school division's IRB approved my research. The next step in the planning process was to create a letter to introduce myself as the researcher and explain the goals and procedures of the study at UES. Once my dissertation chair, Dr. Kami Patrizio, and the other members of my dissertation committee approved the letter, I presented it to the principal of UES. Upon her approval,



the letter was distributed to the other school-based leaders, CLTs, teachers, members of the SIP team, and the division SIP coordinator.

### **Summary**

The goal in conducting this single-case embedded common qualitative case study was to examine and describe how UES made changes during the school reform process that benefited students. This chapter encompassed the rationale for the methodology as well as the rationale for a qualitative case study. In addition, it contained a vivid description of the data collection process. Qualitative data collection methods include interviews, focus groups, observations, document reviews, reflexivity journal notes, and peer debriefing. The data collected were triangulated to determine themes from the embedded units (i.e., third and fourth grade CLTs) and UES to determine the findings that benefitted students. This chapter also addressed issues pertaining to validity, reliability, and bias. The goal of this study was to provide further insight into the use of protocol-structured discussions as a tool to promote organizational learning during the school reform process and add to the body of work on protocol-structured discussions and the use of protocols as learning tools for educators.

## CHAPTER IV: FINDINGS

In the previous chapters, I presented a justification for this research based on the fact that the Black–White achievement gap continues to exist in public school divisions across the country. Despite all of the legislation that has been enacted, the Black–White achievement gap has not closed. In addition, inequities continue to exist, forcing educational leaders to look at alternate methods to address school reform processes.

In Chapter two, I provided a comprehensive review of the research on organizational learning theory, culture, DDDM, and protocols as tools to facilitate school reform practices. The literature pertaining to protocols showed that protocols for improving professional practice and looking at student work have limitations (Horn & Little, 2010; Little & Curry, 2008; Little et al., 2003; Timperly & Earl, 2008). Similarly, studies by Earl and Katz (2006), Mandinach and Honey (2008), Wu (2009), and Mandinach (2012) showed that a principal’s lack of training in DDDM and understanding in data literacy can have an adverse effect on the implementation of DDDM practices during school reform processes. Because they lack understanding in data literacy, principals are not able to elevate their teams to function at a high level of interdisciplinary learning.

The study conducted at UES was designed to contribute to the limited knowledge that exists in K-12 education regarding the use of protocol-structured discussions as a school reform strategy. In Chapter three, I shared the methodology for the study. A single-case embedded common qualitative case study (Creswell, 2009, 2013; Merriam, 2009; Yin, 2014) was chosen because it allows for rich, descriptive data to be collected. I shared the research questions, provided an overview of the research process, and shared a

description and justification for the site selection. I also provided details of the process used to collect and analyze the data, including the units of analysis, the procedures, authenticity, and trustworthiness. I concluded the chapter by addressing any potential researcher bias, addressed the ethics of the research, the IRB approval process, confidentiality, and a summary to address my research questions regarding the phenomenon that occurred at UES from 2012 to 2015.

This chapter presents the findings of the research conducted at UES. It is organized based on the three research questions and the themes that emerged from the data. The evidence to support the results came from three individual interviews (current principal, former principal, and SIP coordinator), three focus groups (third grade CLT, fourth grade CLT, and SIP team), two CLT observations (third and fourth grade CLTs), and several document reviews. Document reviews included an analysis of the state report card data from 2012 to 2015 and all relevant protocols collected during the observations. The basic premise of the study was to provide a description of how UES implemented various protocols during the school reform process from 2012 to 2015 to immerse the staff in practices that promoted organizational learning. Research findings include a description of the school staff participating in the study, their perceptions on the research questions, and other relevant questions during the data collection process. The overarching research question was: How did protocol-structured discussions contribute to organizational learning at UES between 2012 and 2015? The sub-questions used to guide the study were:

1. How did protocol-structured discussions affect the school culture at UES between 2012 and 2015?

2. What aspects of protocol-structured discussions transferred to teacher practices at UES between 2012 and 2015?

### **Description of the Case Study Site**

This single-case embedded common qualitative case study (Creswell, 2009, 2013; Merriam, 2009; Yin, 2014) depicts the phenomenon of school improvement at UES from 2012 to 2015. The study took place at a fully accredited, public elementary school in the mid-Atlantic United States. This school was chosen for the study because it was recognized by the state and the school division for its overall performance and achievement from 2012 to 2015. After reviewing the recognitions, designations, and student achievement at the school, it became apparent that leaders of other schools might be interested in learning about how UES made such impressive progress in such a short period of time. In addition to the excitement that was generated from the success of UES, members of the school leadership team have presented their school reform practices at several local and state conferences. I chose UES as the site for this case study because of the dramatic learning gains and attention it received throughout the school division.

During the 2012-2013 school year, JCPS introduced a new principal, Howard, to lead UES's school reform process. Prior to becoming the principal of UES, Howard was the principal of a minority-majority elementary school, Alston Elementary School (AES; a pseudonym), in Octave County Public Schools (OCPS; a pseudonym), serving pre-K through sixth grade for 4 years. Howard described AES as a place where "minority students were achieving at a rate of about 15% pass rate on the standards of learning assessments." AES experienced tremendous gains in student achievement and went from being one of the lowest performing schools to one of the highest performing schools in

OCPS. Howard attributed the success at AES to the use of various protocols and DDDM.

He described the process as:

The way we turned the tides and sea of achievement was to implement protocols. And by that, I mean that the protocols—that meetings were structured and focused on curriculum, focused on assessment data, and what we were doing with individual kids.

Upon taking the helm at UES, Howard knew the lessons he had learned about organizational structures and protocols for DDDM at AES would be critical.

From 2012 to 2015, UES enrolled approximately 700 students. The ethnic backgrounds of the overall student population were 77% Hispanic of any race, 10% African American, 7% White, 4% Asian, and 3% of the student body identified as two or more races. A total of 66% of the student population was considered LEP, 13% SPED, and 6% gifted. In addition, approximately 90% of the student population qualified for free or reduced lunch and 100% of the student population was considered Title I because of the use of the school-wide Title I model.

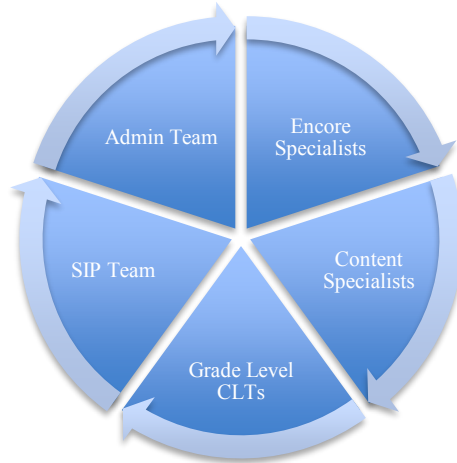
UES had a history of poor student achievement and was identified as a focus school by the state. During his first year as principal, Howard took two major actions to begin facilitating school reform at UES. First, he organized the school into collaborative groups. The collaborative groups were organized based on grade level, content specialty, and area of expertise. Second, he introduced the use of protocol-structured discussions as a school reform strategy. Within 3 years, UES went from a focus school to a School of Excellence for two consecutive years and was recognized by the governor for its use of instructional practices to meet the needs of ELL students.

One of the key initiatives implemented by Howard upon taking the helm as principal of UES was the use of protocol-structured discussions as a school reform strategy to immerse the staff in organizational learning practices to benefit students. CLTs used various protocols to plan instructional units, gain a better understanding of standards, and disaggregate data. The discussions and actions that derived from the CLTs allowed teachers to adjust their instruction to meet the needs of all students.

Upon examining the responses from the individual interviews, focus groups, observations, and document review of materials collected at UES, six major themes emerged: (a) identifying and establishing an organizational learning structure, (b) leadership influences on the implementation and sustenance of organizational learning structure, (c) developing a professional learning model, (d) impact of professional learning model on organizational learning and teacher leadership, (e) effect of protocols on school culture, and (f) protocols changed professional learning and instructional practices. The six themes helped me to organize the major findings in the research study at UES.

### **Organization of Staff into Organizational Learning Structures**

Finding one related to the organization of the staff into organizational learning structures to create a uniform system of continuous improvement. To immerse the staff in the use of protocol-structured discussions as a school reform strategy, Howard organized the school into specific organizational structures. These organizational structures consisted of collaborative groups, including the administrative team, the SIP team, CLTs in kindergarten through fifth grade, content specialists, and encore specialists. Figure 8 provides a visual of the organizational structures at UES.



*Figure 8.* Organizational structures at UES.

The state mandated all schools undergoing a reform process to have an SIP team. This team at UES consisted of teachers from various grade level CLTs, the administrative team, and content specialists.

CLTs are groups of people focused on designing, teaching, and reflecting on instruction and assessment at the level of classroom practice. The term CLT can be used interchangeably with professional learning communities (PLCs), communities of practice, or grade level teams. The CLTs consisted of the general education teachers, the ELL and LD specialists assigned to the grade level CLT, math specialist, reading specialist, Title I professional development specialist, and a member of the administrative team. CLT members volunteered for specific roles and responsibilities. Teachers and specialists had common planning time to work within CLTs. The focus in the current study was on the third and fourth grade CLTs because of their performance on the mathematics and language arts end-of-year summative assessments from the state. These two CLTs were at the center of most discussions in the school division. The governor visited several classrooms in third and fourth grade upon visiting UES.

Howard created these specific organizational structures because he wanted to ensure that each member of the CLT had a voice during DDDM discussions and the planning of instructional units. Howard stated, “When I took over as principal at the school, there was very little efficacy with teachers.” In order to change the culture that existed prior to his appointment as principal, Howard believed the organizational structures as well as the protocols that he implemented to facilitate discussions “provide[d] freedom to have a better flow of ideas amongst people and amongst teachers.” The encore specialists met as a CLT to infuse content area objectives from the CLT units into the art, music, physical education, library, and technology curricula. Content specialists planned instructional units with grade level CLTs. They provided on the spot professional development on a particular skill or concept when necessary during the planning of instructional units.

Grade level CLTs were the heart and soul of the organizational structure at UES. During these meetings, teachers engaged in a series of steps and utilized several protocols to plan instructional units in math and reading. Some CLTs also met to plan instructional units in science and history even though Howard did not mandate it. The SIP team was the liaison between all of the CLTs and the administrative team. It was responsible for implementing the state improvement plan and met on a monthly basis to review assessment data, track monthly progress toward SIP goals, review and assess indicators from the school improvement plan, and respond to recommendations from state coaches. The SIP team and the administrative team worked collaboratively to ensure compliance with all state SIP expectations. The encore specialists, content specialists, grade level CLTs, and SIP team were loosely coupled with the administrative team because it



allowed for continuity and stabilization in the programs and services UES provided during the school reform process. The leadership and work of each CLT fit into one puzzle; that is, the effective use of protocols to engage staff in organizational learning.

### **Leadership Influence on Organizational Learning Structures**

Finding two was that leadership was a key element influencing the overall success of UES through expectations for CLTs, leading change by operationalizing collaborative learning with protocols, and teacher leadership by supporting a vision for collaboration. During the research conducted at UES, participants provided through their comments arguments to support how leadership influenced the organizational learning structures, professional learning, and CLT collaboration. The leadership influenced student learning outcomes and changed the school culture. The protocols established under Howard's leadership provided the CLTs a concrete model to follow in the planning of instructional units and while engaging in DDDM processes. As a result of these protocols, teachers were able to build capacity at the CLT meetings to enhance classroom practices. Several factors emerged across participant responses during the focus groups and individual interviews to support leadership influences on organizational structure. The leadership influences identified were: (a) expectations for CLTs, (b) leading change: operationalizing collaborative structures with protocols, and (c) teacher leadership: supporting a vision for collaboration.

### **Expectations for CLTs**

Evidence from the third and fourth grade focus groups and the individual interviews showed that expectations were one of the strong leadership influences. The data collected included several references regarding the expectations from Howard. He

believed the previous operating system did not provide all teachers an opportunity to share their expertise willingly. To that end, he added the “Say Something” component to the team-planning template. He also mandated that all content specialists who served the respective CLTs be present at all planning and DDDM meetings. During the interview with Howard, he was very intentional about what he believed needed to happen at UES in order to move the school forward. Because UES was a school participating in the state SIP process, Howard believed some changes needed to be made immediately. These immediate changes involved the manner in which CLTs operated at UES. Some of the main expectations Howard established for the staff as they engaged in CLTs were: (a) increase efficacy among CLT members; (b) provide evidence to show that what teachers did at CLTs worked; (c) create a structure to conduct efficient meetings; (d) provide a voice to all CLT members; and (e) create a process to delve deeper into curriculum, assessment, and standards.

Participants validated the administrative team’s expectations. Document reviews conducted on the protocols from the CLT meeting showed that the protocols were designed to provide opportunities for teachers to share their thoughts on a unit prior to planning (Appendix V). The “Say Something” component of the unit planning template and the Unpacking of Standards Protocol allowed each member to share an observation from the standards. The deliberate intent of the “Say Something” component supported Howard’s expectation of providing a voice to all CLT members. Similarly, the assessment component of the unit planning template allowed the CLTs to look at diagnostic assessments from the previous grade level as well as the performance of the

team on the same unit from the previous year. Brittany, a Title I specialist, provided further evidence to support the expectations set forth by Howard. She asserted:

Howard felt very strongly that set protocols needed to be put in place . . . and the structure of the meeting needed to be there so that teams could take that and own it. Without those structures, what happens is teams end up waiting for the specialists to lead the meeting . . . That encourages the talking Howard wanted to see at the CLT meetings.

Joanne, a reading specialist, supported Brittany's comments. She shared:

I think that the structures that were put in place especially . . . were very important because we did have team meetings and team planning before that time, but they weren't always productive. With the new structures, everyone felt like their opinion was valued and that they had something to contribute.

The comments shared by members of the SIP team and the observations from the document reviews were reflected in two distinct categories. The first was leading change: operationalizing collaborative structures with protocols, and the second was teacher leadership: supporting a vision for collaboration

### **Leading Change: Operationalizing Collaborative Structures with Protocols**

When asked why he decided to use protocol-structured discussions as a school reform strategy at UES, Howard reflected on what he experienced when he first arrived at the school:

There was very little efficacy with teachers. They said that they got together to plan and to talk about students and data, but there was very little evidence to show that what they were doing was effective . . . To have an efficient meeting that

would drive the participants deeper into curriculum, deeper into looking at assessments and what it is students were expected to know and be able to do . . . we had to have protocols in place. I believe it provided freedom to have a better flow of ideas amongst people and amongst teachers.

Howard believed that true collaboration among CLTs was essential to the success of a school. He described the reasons for his choice to use protocols more specifically:

First, to ensure that everybody in a team had a voice. Second, to make sure that the voice was heard. And then third, to be able to really, in an organized manner, look at curriculum, look at the standards of learning, and focus on the right things . . . This gave parameters to our meeting and gives a purpose to our meetings and a structured environment to have conversations around kids and curriculum.

Howard, Brittany, or Lindsay were present at all CLT meetings as they unpacked standards, framed units, and engaged in DDDM. Prior to Howard's tenure, there were no formal organizational learning structures in place. Juliana, an ELL teacher, described the meetings as follows:

I feel like usually we didn't have CLTs basically. We had [what were more] like grade level meetings. And, the meeting was mostly about things that we needed to do, field trips . . . It wasn't so much focused on the curriculum and the planning piece. The planning piece came when you went back to your room and you planned alone.

Mitzy, a third grade teacher, shared a similar point of view. She reflected that the previous group process "wasn't structured. The meetings were nothing compared to this. We didn't look at objectives. It just was different compared to this one." She continued:

We would meet . . . I think we looked at data more than we did planning of the lessons. I can remember talking about the data . . . I remember doing data talks, but what are we doing with it after, and what's next, that would not be done.

Howard's leadership and vision to use protocol-structured discussions as a school reform strategy were met with some resistance. Mitzy shared her thoughts on the matter:

When our new principal who started this came, I can remember that we were all mad at him. Teachers asked: "Why do you want us to do all of this?" We did not want to meet . . . We were coming into these meetings all saying, "why do I have to talk?" We were resistant to him until gradually we saw the difference and said okay.

Gladys, a third grade teacher, had a different perspective than Mitzy. She explained:

We were very organized in second grade. We had a pacing guide that I did that was week to week that listed every objective that we would cover, the materials that we would use for language arts, math . . . My problem was that I was the lead teacher and it was my responsibility to get people to meetings, and that was not easy . . . we did discuss the pacing guide and specifically what we were addressing. We would also discuss data but the problem was I felt like the meetings could have been more structured.

Gladys was also excited to begin using protocols. She asserted:

When we switched to this system, I was relieved that I was no longer the lead teacher. I was relieved that everybody had to come to the meetings on time. I felt like we were all responsible, instead of just me.

Tracy, a math specialist, expounded on Howard's decision to lead change by using protocols:

When I was hired here, it was my first time being a math specialist . . . the principal [Howard] at that time was very honest and open with what his expectations were, what his vision was and what the protocol that the school was using [was] and how the first year, there was that pushback from it. He wanted a more structured, cohesive data conversation that what K discusses is the same thing as what fifth grade discusses.

The practice of using protocols in CLTs continued after Howard left. During the third and fourth grade CLT observations, Lindsay and Lauren were present during group DDDM and instructional planning processes. They both provided feedback and shared pertinent data while the CLTs planned the instructional unit or disaggregated data. The leadership displayed by Lindsay and Lauren continued the culture of collaborative work expectations that Howard and Brittany established in 2012. Participants of the third and fourth grade CLT and SIP focus groups shared their impressions on the administrative leadership at UES. Chloe stated, "I feel like with them being in our meetings, it helps us be more transparent as teachers. They know exactly what we're doing in class and what we're teaching and how we're teaching it." Ana supported Chloe's assertion that administrator attendance at CLT meetings was valuable, but for slightly different reasons, stating, "I think it makes us feel good to know that they're that involved as well." Juliana further supported the leadership at CLTs when she explained, "I feel like when they visit in the classroom, they can visit any fourth grade classroom and they know what they're going to expect to see." Facilitating change through the use of protocols, while marked

by some resistance, ultimately created a lasting difference in the culture of CLT meetings.

### **Teacher Leadership: Supporting a Vision of Collaboration**

Howard did not believe in the idea of having grade level lead teachers or a leadership team. While the school had an SIP team, it was mandated by the state. This group was created to manage school-level administrative functions. Howard believed in allowing each member of the CLT to take on a role to support the overall learning. Teachers were empowered to be instructional leaders. Katie described how this leadership occurred in the CLTs:

Depending on the subject, we say, “we’re going to need these things to teach,” especially for reading because we have four or five different professional books that we use. We have two people in charge of a particular book . . . At the beginning of the year, we sit down and say, “Here are the jobs that we need as a team. Who’s willing to do that job?”

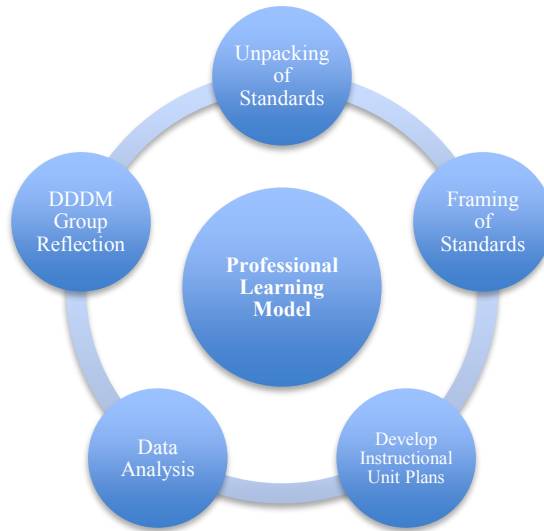
While conducting the observations (See Appendix O) in the third and fourth grade CLT meetings, leadership qualities were displayed by several of the CLT members on several occasions. During unpacking, one member of the CLT was responsible for preparing the vertical alignment. Another member was responsible for creating and sharing the World-Class Instructional Design and Assessment (WIDA) Can Do descriptors while another took the liberty to pull any released test items from the state’s website. The facilitator of the CLT planning or DDDM meeting guided the group discussion by allowing ideas to flow freely while typing notes on the CLT planning document. When Howard began this process, CLTs were required to meet two times a

week. However, over time, CLT members volunteered their time to meet three to five times a week because of the high quality discussions. In order to keep staff universally engaged in the same process throughout all grade levels, Howard developed a new professional learning model, as discussed in the following section.

### **Organizing Protocols to Create a Professional Learning Model**

Finding three was that protocols can be organized into a professional learning model to promote organizational learning in schools and affect instructional practices for student learning. Protocols are an important part of operationalizing collaborative structures and empowering teachers to be instructional leaders. Howard was very intentional in the use of protocols, which often have a specific purpose and can help groups make different decisions during the course of instructional planning. He utilized several protocols within the professional learning model. The model consisted of five essential components: (a) unpacking of standards, (b) framing of standards, (c) developing instructional unit plans, (d) data analysis, and (e) DDDM group reflection (Figure 9). This particular professional learning model included numerous protocols in different ways. CLTs used three main protocols to engage in professional learning: Unpacking; Framing; and What, So what, Now what. These three protocols were utilized on a weekly basis to engage teachers in the planning of meaningful lessons and disaggregate data to determine next steps after an assessment.





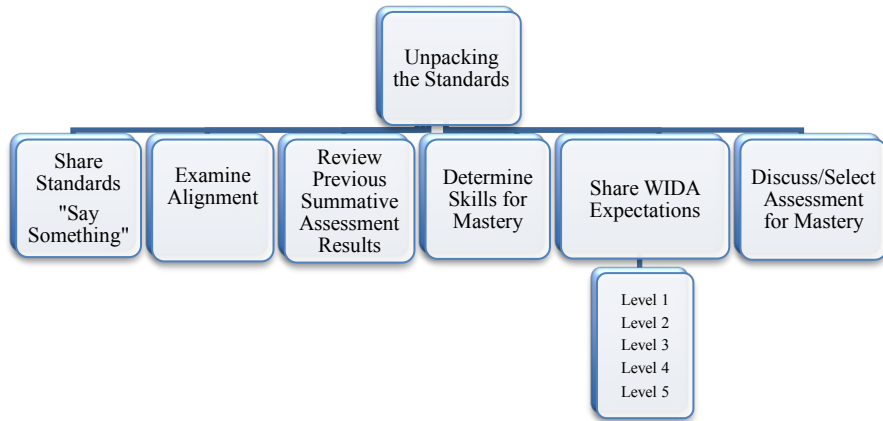
*Figure 9.* Professional learning model of UES.

### **Unpacking the Standards**

To gain a conceptual understanding of the state standards and the school division’s curriculum, teachers engaged in a process of unpacking and framing the standards when planning an instructional unit. During the planning of a unit, members of the CLT used the Unpacking the Standards Protocol at the first phase of the planning process. During the unpacking process, teachers, specialists, and administrators gathered together to conduct an in-depth analysis of standards prior to creating a unit plan. Figure 10 (See Appendix H) provides an overall view of the unpacking the standards protocol process. There were six steps to this process. The first step was the “Say Something” protocol whereby each member of the CLT shared his or her thoughts on the standards being taught on the particular unit. It was an open-ended session where group members could come to common understandings regarding specific standards. During this process, members of the CLT team read and interpreted each of the state standards and essential knowledge in detail so there was a common understanding of the expectations. The second step of unpacking the standards was the examination of the instructional

alignment (See Appendix P). Members of the CLT looked at the standards for the unit from the current grade level as well as how they aligned with pre and post grade levels. Each objective was color coded across each grade level to show the alignment and how each grade level standard built on each other. Step three of the unpacking the standards protocol involved an in-depth look at the end of unit formative assessment and released test questions from the state. During this step, members of the CLTs reviewed the previous year's performance on the unit to determine areas of concern and strength prior to teaching the unit. Under step four, members of the CLT determined skills; identified materials, resources, key vocabulary and language; and selected the cognitive strategies that were necessary for students to master the curriculum objectives and state standards.

The last two steps of the unpacking the standards protocol were step 5, share the WIDA Can Do descriptors, and step 6, Discuss/select assessment for mastery. The WIDA Can Do descriptors were used by ELL teachers to teach general education teachers how to differentiate instruction for ELLs. As the expert in language, it was the ELL teacher's responsibility to share the expectations for an ELL level 1 to an ELL level 5 student. In addition to setting the instructional expectations, the ELL teacher was responsible for providing instructional strategies to the CLTs to meet each ELL student at his or her instructional level (See Appendix R). The last step of the unpacking the standards protocol was to discuss and select the assessment that would be used to measure student progress once teachers had completed the teaching of the unit. Upon completing the unpacking of the standards protocol on the first day of the unit planning, the CLT transitioned to the second phase of the planning process. The second phase involved framing the standards.



*Figure 10.* Unpacking the standards protocol.

### **Framing the Standards**

The second phase of the professional learning model was entitled framing the standards. During this stage, CLTs planned their instructional units using the Framing the Standards protocol (Figure 11; Appendix I). The three steps of framing included: (a) discussion and revision of common formative assessment (CFA) draft, (b) developing a concept sequence, and (c) mapping of the unit. During the discussion and revision of the CFA draft, members of the CLT utilized the task analysis generated from the previous CLT discussion.

The second step in the framing of standards protocol was concept sequence. During the concept sequence, members of the CLT made decisions regarding how to teach the specific curriculum objectives and state standards. The CLTs determined the order in which each objective within the unit would be taught. The third step was the mapping of the unit to connect the standards and concept sequence and identify any potential professional development (PD) needed. The on the spot PD was led by the reading, mathematics, ELL, and learning disabilities specialists who were present at the

CLT meeting or any member of the CLT who had knowledge on how to teach a particular skill.

Mapping of the unit involved three steps: (a) developing the focus lesson, (b) developing a guided practice lesson, and (c) developing independent practice activities for students. The focus lesson addressed a particular skill. After teaching the focus lesson, teachers pulled students to work on guided practice within the construct of the classroom. While teachers were immersed in guided instruction, other students in the classroom were involved in independent practice. During the independent practice, students participated in instructional activities focused on the teacher observables from the focus or guided practice lesson, or any relevant focus lessons and activities previously taught by the classroom teacher.

Howard explained, “I would describe it as a protocol system that was based on making sure that everybody has a voice, to make sure that every voice was heard.” When unpacking the standards, CLTs engaged in an in-depth discussion about standards and assessment. Howard described the unpacking process as:

More about how they look at the curriculum and say something which stands up to them and that is important for them; they wanted everybody to have either something that they wondered, something that they noticed, something that they realized they need to teach better this year.

Anna, a fourth grade teacher, echoed Howard’s perspectives, describing framing more specifically as “creating the actual lessons from beginning to end on a calendar or creating a big map for the unit and then a day-by-day map of the unit.” Brittany, a former

Title I specialist at UES, asserted “the overall structure of the unpacking and framing of the standards was created based on the understanding by design structure.”

Wiggins and McTighe (1998) developed the Understanding by Design (UbD) framework. This framework allows educators to get a handle on standards, align programs to assessments, and guide educators in the implementation of standards-based curriculum that leads to student understanding of standards and achievement. Similarly, during the CLT discussions about the “Understanding of the Standards” and the “Mapping of the Instructional Pedagogy,” the unpacking of the standards and the framing of the standards process at UES allowed teachers to create meaningful lessons, gain a better understanding of curricula and standards, and increase collaboration among staff, which eventually led to better instructional practices to benefit students at UES from 2012 to 2015.

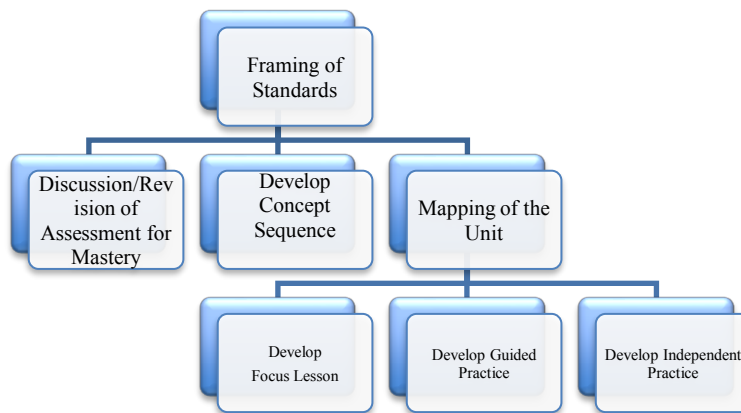


Figure 11. Framing the standards protocol.

### **Develop Instructional Unit Plans**

The Unpacking the Standards and the Framing the Standards protocols were used together in a 2-day process. When combined, they allowed members of the CLT to learn from each other as they produced a completed road map to teach, assess, and evaluate the

curriculum standards and state objectives to ensure all students were receiving high quality instruction daily. At the end of this 2-day process, members of the CLT walked away with a completed unit plan to teach a particular standard. The unit plan was broken down by the week. It covered the state standards, curriculum objectives, instructional goals, activities for spiral review, warm-up activities, learning strategies, graphic organizers, and other learning tools. It also had a vocabulary focus and a reflection or assessment closure activity. Depending on the length of the unit, instructional unit plans from the CLTs could cover multiple objectives over several weeks. Appendix Q, unit 9-measurement planning unit, shows an in-depth view of this process.

### **Data Analysis and DDDM Group Reflection Process**

Upon completing an assessment, CLTs had a 2-day turnaround policy to look at the data. During DDDM processes, CLTs utilized a unit test data analysis protocol as a discussion point to look at trends in the data (See Appendix J). One member of the CLT prepared it in advance. This protocol listed student performance by each question and teacher. In addition, it listed the standards and the corresponding questions from the assessment that matched each of the standards assessed. The last section of the protocol provided an overall percentage of the class average by teacher and an overall grade level average as well as the total number of students in each class that took the assessment.

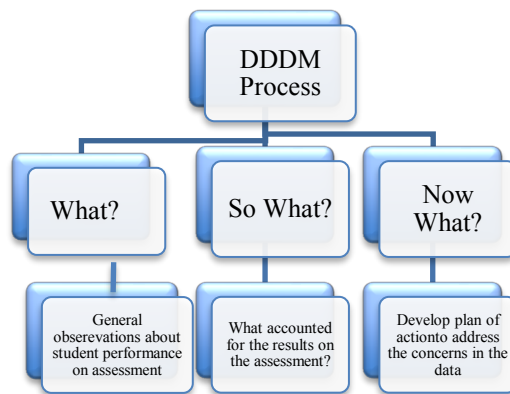
The third protocol CLTs used at UES was the What, So what, Now what protocol. This protocol was utilized during the DDDM group reflection. Figure 12 provides a detailed view of the What, So what, Now what protocol process. Upon looking at the trends in the data, the CLTs utilized the What, So what, Now what protocol to determine

next steps. There were three steps in the DDDM protocol: (a) What, (b) So what, and (c) Now what.

During the “What” component of the protocol, CLTs delved into the data to look for trends as well as document other observables from students during the administration of the assessment. Ana, a third grade teacher, described the “What” component as “what we see as a CLT in the data.” Chloe, a third grade teacher, described the “What” as “the things that we see right away as we review the assessment results.” The “So what” component of the protocol was a thinking and sharing session by the CLTs. During the “So what” session, CLTs determined the root causes of student performance by asking specific questions related to student performance and teacher practice. Anna, a third grade teacher, described this process as “it is kind of why that happened in the data.” Similarly, Tracy described the process as “We’ve grown with that, where our ‘so what’ has become more of a huge brainstorming of, we could do this; we could do that; where before when we first started it, there was not much talking at all.” During the DDDM observation, teachers took turns looking at student work samples on part A of the math assessment, student responses on part B (multiple-choice questions), and engaged in professional discourse regarding patterns in student responses from each class. In addition, teachers engaged in professional discourse regarding alternative viewpoints on the strategies that were used to teach math unit 9 and identify new strategies to re-teach the concepts students did not master.

The last step of the DDDM protocol was entitled “Now what.” In the “Now what” section of the protocol, CLTs created a plan of action. The plan of action guided the next steps and addressed concerns that arose from the data. According to Anna, a

third grade teacher, the “Now what” served two purposes. She stated the section was there to address “what are we going to do now to fix the situation, or what are we going to do next if we missed something in our teaching?” In reference to the “Now what” step of the DDDM reflection, Joanne, a reading specialist, asserted, “So, I think we’re really focusing on the child. What does this child need? Is there a pattern in the class, across the team, and across the school?” During this step, CLTs created a plan of action to address concerns in their teaching practices as well as provide strategies for remediation and enrichment.



*Figure 12.* What, So what, Now what protocol.

Howard identified several key organizational structures at UES. He developed a professional learning model by utilizing several protocols to meet the vision, mission, and establish a culture of expectations at UES from 2012 to 2015. The protocols that were established empowered teachers to take ownership of the work by taking specific roles within the CLTs as they engaged in unpacking the standards, framing the standards, and engaged in DDDM practices. These processes created a cultural shift at UES. New leaders emerged as a result of the process.



## **Impact of Professional Learning Model on Organizational Learning and Teacher Leadership**

Finding four was that the professional learning model developed at UES had a profound impact on organizational learning and teacher leadership. Participants of the SIP and CLT focus groups shared their perspectives of how teacher leadership had grown since the implementation of the professional learning model in 2012. Using this model distributed leadership responsibilities and improved accountability within the group. Katie described her growth as teacher since arriving at UES as: “When I came to UES from . . . I was a good teacher. But I’m a better teacher here based on what we do because it goes back to what we share.” She further explained:

Over the last 3 years, working at UES has made me a better teacher because I get to interact with my colleagues and have more constructive conversations. So, I think back to myself a lot of times, those poor children I didn’t get to before I came here, I hope they’re surviving . . . this process [CLTs] has transformed all of us in 3 years.

Mitzy, a third grade teacher, described the work of the third grade CLT as:

Each teacher is responsible for one area. That, the load of the work is not on just one teacher. We have our dear Katie who has been our typist all year. We have a teacher who’s responsible for the test . . . we have teachers who are responsible to bringing in materials, one who sets the agenda. So it’s everyone doing something.

Kendall, a learning disabilities specialist, described the process as:

It keeps everybody accountable and responsible for their job . . . Everybody has something that they’re supposed to do . . . so, when you come to the meeting, it’s

usually done beforehand so that the meeting can just flow . . . when we get there, it's just a good quality discussion with everyone at the table.

Tracy supported Kendall's point by sharing, "And if it's not done, then that person usually takes ownership and says, 'I didn't do it.' And, then the team makes a decision on what will we talk about that next time or can we pull up last year's." Joanne explained:

I think what's also good about the roles is that the roles rotate. So you're not the assessment expert and I'm not the resource person. I like that rotation of roles so that you can learn different aspects of the process. And, that way you feel empowered instead of just thinking that one person is in charge and carries the knowledge.

My observations at UES substantiated these participant responses. During the observations, CLTs engaged in a free-flowing discussion by utilizing the "Unpacking the Standard" protocol. The "Say Something" component of the protocol allowed teachers to share ideas and thoughts about the unit prior to planning the unit. Ana led one of the CLT discussions. She began the group discussion by stating:

Ana: Today, we're unpacking our new math unit for measurement. I typed the standards here, but if we could all look at our standards also. We're going to do the Unpacking the Standards Protocol by completing the "say something" section. I think it would be best if we kind of read each section and then say something because there's four distinct parts in this unit. So if we want to look at 4.6 first- that's for weight and mass.

Juliana: Right away, I see the word benchmarks over and over again and how it's important to use benchmarks for real life to explain estimation.

Regina: I also see that 4.6b is identifying equivalent measurements, and I know this is something new for 4th grade. They didn't have that in 3rd.

Chloe: And, also they have to do that. It's always in the U.S. customary or all within the metric system. They don't have to go between them, but they have to know the difference between the customary and the metric.

Ana: I think from past years, they have a hard time with the conversions, they have an easier time than with actually estimating or saying which unit would you use. So it's kind of they struggle with like the big concepts in measurement.

Chloe: It shows you what they need to know using a variety of measurement and also objects, so it could be like anything.

Lindsay: It just reminds me that we have benchmarks that we used last year in the posters. We have got to get those up again, okay. I completely forgot about that.

Tracy: I would like to see the difference, just because every grade level implemented that last year. So, I'm wondering if that concern you guys have will be stronger this year.

The free-flowing of ideas by the fourth grade CLT was similar to the DDDM observation from the third grade CLT team. During that observation, the third grade CLT discussed the performance of their students on math unit 6 by utilizing the "What, So what, Now what" protocol. Lauren, the assistant principal, opened the discussion by stating the purpose of the meeting. Tracy jumped in and asked the group to look at the lowest test questions. Katie posted a copy of the "Data Analysis Sheet" on the SMART

interactive board so the group could see a complete visual of the grade level performance, individual teacher performance, and the performance of students on each question and objective. As the group studied the results, a discussion ensued on question #10. Louise shared her thoughts:

Number 10 on the original test was a three-digit number. The ones place was left off on the actual computer paper. There were a couple of different ways that we discussed within classrooms and obviously figured it out after the fact. I know some people, myself included, just said children try. What you get is what you get. Let it go. I think some people said just skip it. So we decided—I think as a consensus—to take that question out.

The third grade CLT engaged in a discussion about question 10 for about 3 minutes. Thereafter, the decision was made to remove the question from the overall result. Several members of the third grade CLT team suggested using the question as an exit ticket or a quick check during the morning math routines. The level of discussion by the CLTs as well as the problem-solving by all members was in line with the leadership expectations that Howard established at UES in 2012. Catherine, an ESOL teacher shared her thoughts on the leadership expectations. She posited:

I remember Howard saying that we don't need the outside people . . . the knowledge is here and we were empowered. And that really stuck with me because there are brilliant people here and we can, together all this experience we have. This was a turning point in how we progress from individuals to a CLT.

Lindsay, the current principal, described the impact of the various protocols on organizational learning and teacher leadership. She surmised:

We have seen over the last 6 years a decrease in behavior from about 258 referrals to down in the 50s . . . the expectations are tight, the instruction is tight, and kids are engaged. So, you see a higher number of students engaged in their learning, you see a higher number of students working with teachers and not just . . . they're fully engaged in standards-based activities in learning because teacher leadership has grown immensely due to the systems Howard put in place at CLTs. At the CLT meetings, each teacher had a voice; everyone's voices were heard and, most importantly, the conversations that took place were organized in a structured manner because of the use of the three protocols. Together, these protocols transformed the culture of UES.

### **Impact of Protocols on School Culture**

Finding five was that the implementation of protocols had a positive effect on school culture at UES. At UES, the principal trained the staff to use specific protocols to engage in professional learning and DDDM. The process of using these protocols empowered teachers to work with data and engage in discussions to adjust their instructional practices to meet the needs of all students. Two contrasting views developed during the process of data analysis: (a) culture related to planning prior to and after the implementation of protocols, and (b) culture related to DDDM prior to and after the implementation of protocols.

Participants provided two contrasting views pertaining to the overall culture of the school. During the focus groups and interviews, some of the participants gave a distinct picture of the culture at UES prior to the appointment of Howard as principal. This distinct view was not very positive. Teachers described UES as a school lacking basic

structures for planning, professional learning, and DDDM processes. Similarly, other comments supported the affirmative culture that I observed during the research study.

### **Culture of UES Prior to the Implementation of Protocols**

Teacher collaboration, continuous professional learning, trust, and the sharing of instructional ideas were not well established at UES. Howard provided an astute overview of the culture at UES when he posited:

I think initially when I went into Uprising Elementary School, it was very much individual. A teacher would do kind of what they wanted to do. It was, teachers that they would get together to plan and they would go and teach what they wanted to teach or you had situations where one teacher would plan the lesson for the whole grade level. They would take turns. They would do a lot of isolation, but yet they were still meeting. And so, there wasn't a lot of ownership, in my opinion, about what was happening with kids.

He further asserted, "The other thing that I had heard is that the meetings were a waste of time, that they were not productive, they were not leading to any student achievement."

The comments shared by Howard extended to the various CLTs during the focus group and the SIP team interviews. Their comments on school culture focused on the DDDM model and planning.

### **Planning Prior to the Implementation of Protocols**

Planning of instructional units is one of the fundamental expectations of CLTs. As standards change and accountability in education increases, CLTs are expected to share their expertise with one another to meet the needs of the diverse learners in their classrooms. At UES, this practice was somewhat evident prior to the appointment of

Howard as principal but it became a standard practice once Howard established a new learning model. Catherine shared her perspective on the culture as follows:

Prior to this CLT process, we in second grade were teaching measurement units that were not really part of the standard. When we looked at them closely, we realize, “Oh you know what, we don’t need to do feet or kilometers.” And, so that was really because we looked closely.

Another description of the pervasive mindset of teachers prior to CLTs came from Brittany. She described the previous culture by stating, “Because there were previously established team leads, when that role was distributed across the team, there were some team members that had a problem with that.” That problem also manifested when CLTs engaged in DDDM processes.

### **DDDM Prior to the Implementation of Protocols**

In order to accurately plan instruction that will be beneficial for all students, CLTs must trust the knowledge and skills of each member (Ballock, 2007). This is especially important when engaging in DDDM to plan remediation and enrichment activities for students based on assessment results. Brittany described the previous structure by saying, “Basically, there was none; teachers collected data, they looked at it in isolation, and made decisions for their class. There was no team discussion and next steps.” Mitzy, a third grade teacher, supported the assertions from Brittany when she elaborated on the teacher mindset pertaining to DDDM, stating, “It’s my classroom. I’m not sharing what I’m doing in here with my data.”

This mentality seemed to permeate throughout the other CLTs. Juliana articulated, “It’s like everyone went to their room and they did their plans, look at their

own data, but we just came together for an overall view.” Similarly, Tracy shared, “I think I’ve seen like in my 3 years a progression of more ownership of not just individual teachers but as a team. From what I heard, this was not the culture here.” Perhaps the best statement to describe the mentality at UES prior to the implementation of protocol-structured discussions as a tool for professional learning was shared by Mitzy. She asserted, “I remember doing data talks, but what are we doing with it after? And, what’s next that would be done. We weren’t prepared with anything.” The statement from Tracy was the beginning of a revolution at UES. Upon establishing the various learning structures and developing a professional learning model at UES, the conversation around the use of data and planning changed drastically.

### **Culture of UES After the Implementation of Protocols**

Howard implemented protocol-structured discussions to ensure each teacher had a voice during CLTs. He wanted each teacher’s voice to be recognized and valued during the planning of instructional units as well as during DDDM discussions. UES presented a united affirmative school culture that was strongly supported by the work Howard did as principal from 2012 to 2015. This affirmative culture was displayed during my visits to UES. There was a culture of high expectations for student learning, collaboration, accountability to each member of the CLTs, and most importantly, a culture of continuous learning. During the two observations I conducted at UES, I observed teams executing their respective roles in advance to have more efficient meetings. The Data Guru disaggregated for the entire CLT based on student performance on each question as well as by teacher. This allowed for discussions around the data and determining next steps regarding instructional practices and support to occur in a more efficient manner.



When disagreements arose, members of the CLT could validate each other's concerns and moved on without disrupting the overall goal of the CLT. During the planning of instructional units, content specialists and classroom teachers conducted on-the-spot PD when necessary to help other members of the CLT teach a standard. The natural flow of the CLT planning meetings and DDDM sessions showed that the process of using specific protocols to engage in professional learning and looking at student work was a standard practice at UES.

### **Planning After the Implementation of Protocols**

The cultural shift that occurred at UES was noticeable in the way each participant glowed when describing the changes that Howard put into practice. Participants could not wait to share their comments regarding the transformation of the school. Ana expressed her thoughts on the implementation of protocol-structured discussions by sharing the following:

I can say generally speaking, the protocols were really tough at first. It was kind of like almost too many protocols. How do I follow this? You're afraid to do something wrong, but now after 4 years, it's almost like you're grateful they're there. They guide the meeting. They guide our planning. They guide the next step. It's like a safe place almost.

Chloe supported Ana's comments and stated, "Yeah, it's scary to even think about going to another school and what would you do? What if you don't have a CLT?" The comments by Ana and Chloe were echoed in the third grade CLT and the SIP focus group discussions. Teachers described the utilization of the unpacking of standards and framing

of standards protocols as pivotal tools in the transformation that occurred at UES. Katie described the planning process a way of keeping the end in mind:

You can see what's required of not only us but also the children . . . it gives me a clear understanding of where I'm going through each process. The unpacking portion go in order of the way we discuss things. It provides a structure that was not in existence.

The unit planning document utilized by the CLTs consisted of several components. Each component allowed the CLTs to strategically engage in a discussion about the standards, specifically, the interpretation and common understanding. Mitzy expressed her views on the cultural shift as follows:

I'm passionate about this one . . . the planning was way different. It wasn't structured. The meetings were nothing compared to this. We didn't look at objectives . . . Now, we have a voice; we share openly. We look at standards; create assessments, and lessons as a team.

Members of the SIP team shared consistent viewpoints to support the assertions shared by CLTs pertaining to transformation of the culture with regard to planning. Joanne shared:

I think that the structures that were put in place, within the last 3 or 4 years were very important. We had team meetings and team planning before that time but they weren't always productive. People kept still, didn't voice their opinion . . . because they felt they weren't as knowledgeable. With the new structures, everyone felt like their opinion was valued. As they ask the questions, everyone was learning from the question asked.

The comments shared regarding the changes in the planning structures after Howard became principal showed a dramatic shift in teacher thinking during planning. This shift saw teachers move away from a system of isolation to one of collaboration. Engaging in DDDM showed a similar shift. Teachers credited that shift to the use of the What, So what, Now what protocol.

### **Culture on DDDM After the Implementation of Protocols**

The structure of the What, So what, Now what protocol to engage CLTs in DDDM made it easy to engage all staff members in discussions about results on assessments. The mere nature whereby each teacher's scores were reported by an overall pass rate and a detail breakdown of each question by teacher on the standards allowed teachers to dig deeper and ask questions about their planning and student learning. Tracy summarized the current culture at UES around DDDM:

In my 3 years here, I've seen a progression of more ownership of not just individual teachers but as a team. I heard a lot of "How can we fix this or what did you do that was slightly different with that?" . . . Now, it's just been more of, "okay as a whole, what do we need to do to remediate or to maintain this? How can we extend it? How can we remediate it?"

Joanne contributed to Tracy's thoughts on the cultural shift on DDDM. She asserted, "One of the things is that after an assessment, we have a 2-day turnaround time where we're going to discuss the data . . . We also talked about the assessment by name of the child and by need."

This new mindset was developed and honed under Howard's leadership. Brittany, a Title I professional development specialist who helped develop and implement

the protocol-structured discussions at UES, recalled how the process evolved. She explained:

At the very beginning when we first started looking at data, it would go back to these protocols. We gave the teams a specific protocol to use and a specific form. Each teacher recorded their children's answers item by item . . . and, then we use a protocol of here's what, so what, now what. It guided the conversation in that structure initially. Now, it sounds like it's taken on a new meaning with teachers digging deeper into student data.

Joanne shared:

I see at some teams. This is what they say. "So really and truly that question wasn't properly phrased. So next year if we decide to use this, let's put a red note . . . to fix that question or change that question." That's the kind of conversation that's happening with the data. In all of years at Uprising, that level of discussion never happened.

Howard summarized the cultural shift that occurred at UES when he explained:

I would think they [protocols] positively influence the culture in couple of ways. I think first, teachers started to feel better about what it is they were doing . . . it fostered a sense of mutual accountability amongst teammates . . . it fostered a climate and a culture of in order for our kids to achieve high levels, I need to depend on you as my teammate.

The professional learning model and the cultural shift that occurred at UES provided opportunities for teachers who previously did not have a voice under the old structure to take on leadership roles within the CLTs. It also provided a voice to teachers

who traditionally remained reserved at CLT meetings. These processes had a profound impact on organizational learning, specifically professional learning, on teachers, administrators, and students. During this study, the changes in professional learning were perhaps the greatest observation I witnessed. Teachers, specialists, and administrators beamed as they reflected on their personal transformations.

### **Protocol-Structured Discussions Changed Professional Learning**

Finding six was that the strategic implementation of protocol-structured discussions as a school reform strategy at UES transformed learning for teachers, administrators, and students.

The implementation of the various protocols provided staff a specific structure with which to engage in organizational learning practices. The unpacking and framing of standards protocols gave teachers a specific tool to plan instructional units. The What, So what, Now what protocol provided CLTs a tool to engage in DDDM in order to make adjustments to the curriculum and determine the next steps after an assessment.

Together, the three protocols engaged CLTs and administrators in a different way of thinking. They allowed everyone to look at curriculum, standards, and best practices through one lens. Classroom practices changed as a result of this new learning. This systematic process changed learning for teachers, administrators, and students.

### **Changed Learning for Teachers**

Protocol-structured discussions changed learning for teachers. One of the most significant changes that was consistently mentioned by all participants pertaining to the professional development of teachers was the manner in which the protocols empowered teachers to look at standards and curriculum. The protocols allowed teachers to look at

the essential questions and state standards before engaging in any other aspects of planning. The “Say Something” component made this process easier because it provided a non-judgmental voice to everyone. Novice teachers were not afraid to ask questions. Howard believed this process was most significant for novice teachers. He described the effects on novice teachers:

It became a huge safety net for our new teachers . . . it was a great way to support new teachers. We had many new teachers over the 3 years that I was there; they stabilized. We had very few teachers year three to year four, but you would hear teachers say that, “I don’t know how I would’ve made it through my first year . . .” Having protocols in place, number one, allowed there to be a structured way to help them understand curriculum, data, and ways to teach specific standards at the rigorous level in alignment.

In addition to the effects on novice teachers, other members of the CLT benefitted from the expertise provided by the content specialists. Chloe described her first year experience by stating:

Last year was my first year teaching and I never felt like a first year teacher. I had other people that graduated at the same time teaching in the county and they were very stressed out their first year, but I felt like I learned so much because I was working in a group.

Tracy shared her views on the effects on classroom teachers:

Well, I know one thing I can think of off top, the idea of the teachers sharing strategies. I know for me I have a chance to work with third, fourth, and fifth . . . they may ask, what did they use in third grade? What strategies did you all use in

third grade that we can adopt? What are the kids coming with? What should they know . . . sometimes the grade levels tend to use it [strategies] and then adopt it for the needs of their grade level.

Brittany, a Title I professional development specialist, supported the comments made by Tracy. She contributed to the discussion about the sharing of strategies by asserting:

It also allows for sometimes-immediate professional development of some teachers not feeling comfortable with the strategy. With the protocols, it's kind of allowed people to say, "I'm not sure what to do with that . . ." That's where I think it's changed for my first year to now. Teachers are stepping up and saying "this is how I do it . . ." they ask questions to one another. Then you'll hear someone say, "I did it slightly different. I did it this way."

This new form of collaboration had a direct correlation with classroom practices. Ana described her team as "more focused." She elaborated on this assertion by stating:

I've noticed as the years have gone by following this process, I'm much more likely to bring that into my classroom and to actually either post it [objective] in the room or tell my students . . . whereas, a few years ago I might not have told them the objective for the day or used those words that came from the curriculum. But, because I'm so well-versed . . . I'm more likely to share that with kids so they know what they're expected to do.

Chloe added to Ana's comments by stating:

Something else I notice is that I don't get side tracked like last year . . . I feel like this year since I am in the same grade, teaching the same standards, I know

exactly what I'm teaching and I feel like I never get confused about what I'm teaching. There's no wasted time.

Juliana provided an overall positive view of what she believed had been the greatest impact on classroom practices:

What helps me out is I go from one class to another and I do a lot of co-teaching. I can go into Chloe's class and then go into another teacher's classroom and then we're like right there . . . I know what's happening.

Administrators were also beneficiaries of protocol-structured discussions. The organizational structures established allowed administrators to gain a better understanding of curriculum, standards, and assessment. The mere presence of an administrator at all CLT meetings gave teachers the confidence that the work they were doing was valued and beneficial to meet the needs of all students. Teachers believed the administrator's presence allowed teachers to be transparent. They believed that a common understanding of the standards and how they were going to be delivered in the classroom was developed at the CLT meetings. Therefore, when administrators visited classrooms, they knew exactly what to look for and that expectation was the same for all teachers. As a result of their participation in the CLT meetings, administrators gained new perspectives about teaching and learning.

### **Changed Learning for Administrators**

Protocol-structured discussions changed learning for administrators. Learning for administrators took many forms. Howard described his learning as follows:

I can speak for myself and say that over the last 7 years as a principal, implementing protocols in the two schools have helped me understand and learn



curriculum. It helped me to be a better instructional leader because I was sitting there . . . I learned about different grade level curriculum. I learned about best practices in teaching.

Lindsay, the current principal of UES, described how protocols changed her learning.

Similar to Howard, she explained:

It was what I had always been looking for . . . I'm kind of a protocol person. I like to have a process and I think human beings by nature like to have processes . . . as an administrator, just being a part of the meetings, I know what they're doing. I can walk into a classroom and I see it in action. I've become a more active participant in lots of ways. It just has strengthened the bond between administrators, teachers, and students.

Members of the SIP team and the third and fourth grade CLTs shared their views on how protocols had changed learning for their administrators. Chloe shared:

At other schools, like when I did my student teaching and the principal came in like once a month . . . but, here the principal is in our meeting, so we know if she didn't think we're doing the right thing, she would say something then and not wait until she visits.

Brittany described her learning as a central office administrator as follows: "As an administrator sitting in on CLT meetings, I've developed a stronger understanding of the standards vertically because I understand how children progress and I can help support teachers in building their knowledge." Joanne shared:

I would say that we're confident the administrator knows what should be taught, how it should be taught . . . we're confident that the administrations are aware.

And, when they do instructional rounds of the various kinds that they actually know what they're looking for.

The biggest beneficiaries of the work done by the staff were the students. The leadership structures developed by Howard and the various protocols utilized at CLT meetings to engage in professional learning had a direct correlation to the delivery of high quality and engaging lessons in the classroom. As a result of the high quality and engaging lessons, students were provided multiple strategies to solve problems. Learning for students changed considerably during 2012 to 2015, resulting in improved student performance on state assessments.

### **Changed Learning for Students**

Protocol-structured discussions changed learning for students. Tracy described how learning changed for students from 2012 to 2015:

I think in the past few years, the students are starting to take more ownership of their learning because we're presenting different strategies. They're picking a strategy that they feel comfortable with using. That wouldn't have happened if we haven't talked about it as a team . . . In math, I see some kids coming up with their own way to solve problems, which is kind of nice. I also see our ELL students getting a better grasp of the sentence stems and they're naturally just using them without any prompting.

According to Mitzy, students "know they had to be more accountable for their own learning . . . the students know what they are learning and why they are learning it."

Gladys, a third grade teacher, shared a similar thought:

You can go from class to class; one thing that you will see is that the lessons being taught are the same even though each teacher may present it differently.

This helps students as they move from one class to another because we now have consistency at our CLT meetings, which positively impacts our students.

This positive impact could be seen beyond the classrooms. The effects of protocol-structured discussions transferred to other parts of the school. Mitzy recalled one of these experiences:

Another thing that's great is like at the end of the school or lunch, recess, you hear my kids saying the same thing on the playground or going home. It's the same conversation that the kids are having in other classrooms . . . That to me is so powerful.

During the observation of the fourth grade CLT, they unpacked and framed the standards. Teachers were intentional in addressing all learners. The discussion around the WIDA Can Do's for the unit on measurement provided a glance at the work CLTs do on a weekly basis. Teachers developed strategies, selected appropriate materials, and differentiated the weekly lessons to meet the needs of each ELL level. In addition, during the DDDM session, CLTs reviewed student performance on each question by grade level, teacher, and student. They also looked at each question by the standard and developed an action plan to remediate the students who did not master a particular objective. This level of data disaggregation changed learning for students because it went from a more general understanding to a more targeted approach.

CLTs spent a considerable amount of time looking at the current, prior, and upcoming standards during planning. This level of planning changed learning for

students because they were coming to the next grade level better prepared. Lindsay, the current principal, summarized how learning changed for students. She posited, “I see how our students function day-to-day, our behavior concerns have decreased tremendously because the instruction has gotten better. Student achievement has risen tremendously for us, so we see it in our students’ data.”

A comparison of student performance data on the state summative assessment from 2009 to 2012 and 2012 to 2015 supported Lindsay’s statement regarding student performance. Table 14 provides a comparative analysis of 3-year trend data in Grades 3 through 5 in reading and mathematics prior to the appointment of Howard in 2012. Table 15 provides a 3-year comparative analysis during the period of this research study when Howard was principal.

Table 14

*Three-Year Comparative Data Analysis Prior to the Appointment of the Principal*

Grade	Subject	2009-2010	2010-2011	2011-2012*
3	Reading	73%	68%	69%
4	Reading	69%	69%	63%
5	Reading	82%	72%	63%
3	Math	86%	94%	46%
4	Math	83%	85%	49%
5	Math	92%	80%	48%

*Note.* \*New rigorous standards of learning test in mathematics began.

Table 15

*Three-Year Comparative Data Analysis During the Research Study and Current Results*

Grade	Subject	2012-2013**	2013-2014	2014-2015	2015-2016
3	Reading	59%	63%	73%	71%
4	Reading	49%	64%	92%	63%
5	Reading	43%	67%	64%	78%
3	Math	55%	78%	89%	82%
4	Math	56%	93%	98%	94%
5	Math	54%	74%	92%	94%

*Note.* \*\*New rigorous standards of learning test in reading began.

Data from 2012 to 2015 showed students made considerable gains, particularly in math achievement, in Grades 3 through 5. The results in reading did not progress at the same rate as math; however, the third and fourth grade CLTs made some considerable gains during that time period. From 2012 to 2015, the third grade CLT had a 14-point gain. Fourth grade had a 43-point gain during that same period. In math, the results were staggering. The third and fourth grade CLTs had a 34-point and 42-point gain, respectively. Based on the performance of third and fourth graders in reading and math, it is evident that the structures, systems, and processes established under Howard's leadership provided educators with a more defined lens for school reform practices.

### **Summary**

Upon examining the qualitative data and conducting a comparative analysis of the assessment results from 2009 to 2011 and 2012 to 2015 at UES, six major findings emerged: (a) organization of staff into organizational learning structures, (b) leadership influence on organizational learning structures, (c) organizing protocols to create a professional learning model, (d) impact of professional learning model on organizational learning and teacher leadership, (e) impact of protocols on school culture, and (f)

protocol-structured discussions changed professional learning. The qualitative data collected from the former principal, current principal, Title I, and early literacy supervisor and the focus group interviews with the SIP team and the third and fourth grade CLTs provided rich descriptive data to support the phenomenon that occurred at UES from 2012 to 2015. The observations and the document review also supported the phenomenon. The results on the state standardized assessments portrayed a slightly different story in the area of reading. From 2012 to 2015, the fourth grade CLT outperformed the third grade CLT at three times the rate during that same time. In math, the rate of growth was not as significant. The CLTs had a 31-point and 41-point gain during that same time. The variance on these assessment results and the qualitative data collected led to the discussion in Chapter V related to the findings of the study and their relation to the literature. In addition, I discuss the implications for practice and research. The chapter concludes with a discussion on recommendations for the future and a summary.

## CHAPTER V: DISCUSSION

In Chapter one, I discussed the Black–White achievement gap and the educational inequalities that continue to exist in the U.S. school system despite the legislation that has been enacted to ensure equity for all students. To close the achievement gap and combat the inequities that exist in schools, protocol-structured discussions and DDDM emerged as school reform strategies. This chapter sets the basis for the purpose of the study.

Chapter two provided a comprehensive review of the research on organizational learning theory, culture, DDDM, and protocols as tools to facilitate school reform practices. Chapter two presented an overview of the literature pertaining to the history of protocol-structured discussions as a school reform strategy.

In chapter three, I described the methodology for the study. I further described the purpose of the study, shared the research questions, provided an overview of the research process, and shared a description and justification for the site selection. Within this chapter, I discussed the processes used to collect and analyze the data, including the units of analysis, the procedures, authenticity, and trustworthiness. Chapter three also addressed potential researcher biases, ethics, the IRB approval process, and confidentiality.

Chapter four began with a description of the site and participant information. In this chapter, I discussed the six primary findings based on the themes that emerged from the data during triangulation. The data collected from the three individual interviews, three focus groups, two observations, and document reviews allowed me to create several nodes in NVivo 11 Pro. I combined the nodes to create four distinct themes. Two other

themes emerged from the data during triangulation. These six themes allowed me to extrapolate the findings for this research study.

The findings in this study were consistent with the existing literature on organizational learning theory, culture, DDDM, and protocols to improve professional practice and looking at student work. The first two key findings were consistent with the research of Brown and Campione (1994), Edmondson and Moingeon (1998), Glassman (1973), Hedberg (1981), Lave and Wenger (1991), Rogoff (1994), Weick (1976), Wenger (1998), and Wenger and Snyder (2000). The third and fourth key findings support the work of Boudette, Murnane, et al. (2005), Breiter and Light (2006), Brunner et al. (2005), Hamilton et al. (2009), Ikemoto and Marsh (2007), Mandinach (2012), Mandinach and Honey (2008), and Mandinach et al. (2006) on DDDM, and those of Ballock (2007), Burke et al. (2011), Curlette and Granville (2014), Curry (2008), DuFour (2004), Horn and Little (2010), Lasky et al. (2008), Law (2005), Little (2007), Little and Curry (2008), McDonald and Klein (2003), Nelson et al. (2008), and Timperly and Earl (2008) on protocols to look at professional practice and student work. Last, the final two findings support the research on culture conducted by Bush and Middleton (2005), Deal (1985), Dimmock and Walker (2000), Hofstede (1991), Karlsen and Gottschalk (2004), and Schein (1990).

Findings from this research study add to the body of research on using protocol-structured discussions to engage staff in organizational learning by providing detailed information on how a principal's vision during school reform can transform organizational learning practices. The information garnered from this study may be vital to district-level administrators, school-based leaders, teachers, and other stakeholders as



they engage in similar processes. In addition, the findings provide further opportunities to other researchers to prioritize protocol-structured discussions as a legitimate school reform strategy.

Chapter five connects the findings of the study to the literature. The discussion is arranged by the findings found in the data collected from UES. Chapter five also contains implications for educational leaders, teachers, and central office personnel. It concludes with some recommendations for future studies to support the use of protocol-structured discussions during school reform processes.

### **Findings Related to the Literature**

The research findings for this single-case embedded case study depict the journey of a new principal and his staff as they engaged in school reform practices from 2012 to 2015. During this journey, the principal and members of the various CLTs created an environment of shared leadership, collective inquiry, and collaborative decision-making. The themes that emerged from the interviews, focus groups, observations, and document reviews revealed six findings for consideration. The findings are related to the themes in the literature review.

#### **Finding One**

Organization of the staff into organizational learning structures created a uniform system of continuous improvement at UES. When Howard was appointed as the new principal of UES, he organized the staff into several specific organizational structures. The structures established by Howard was similar to the theory of “communities of practice” (Lave & Wenger, 1991; Wenger, 1998; Wenger & Snyder, 2000) as well as the theory of “community of learners” (Brown & Campione, 1994; Rogoff, 1994). Wenger

and Snyder (2000) described the concept of communities of practice in organizations as “groups of people informally bound together by shared expertise and passion, coming together for a joint enterprise” (p. 139). People in communities of practice share their experiences and knowledge in free-flowing, creative ways that foster new approaches to problem-solving (p. 140). Similarly, Curry (2008) shared, “Common to each of these theories is the premise that teachers learn through situated and social interactions with colleagues who possess distributive expertise and with whom they have opportunities for sustained conversations related to mutual interests” (p. 738).

Each of these theories supports the role of collaboration in organizational development to transform interdisciplinary learning. Under Howard’s leadership, UES had a system in place to engage staff in collaborative inquiry. This system included the use of various protocols by kindergarten through fifth grade CLTs. One thing that remained constant regardless of the organizational learning structure was that the use of protocols was evident in all facets of the school. This consistency was similar to what Glassman (1973) and Weick (1976) described as loose coupling. Coupling signifies that the interdependent elements are “linked and preserve some degree of determinacy” (Orton & Weick, 1990, p. 204). By “loose coupling,” Weick (1976) intended to convey the image that coupled events within an organization may or may not be responsive to each other, but that each event also preserves the characteristics of its cultural identity and some indication of its physical or logical distinction. By identifying and establishing a specific organizational structure, the foundation for success during school reform practices will be present from the third grade CLT to the fourth grade CLT or from one school to another as long the organization preserves the established structures.

Once there was a professional learning model in place, it was also essential to establish specific protocols to guide staff discussions. Protocols can change the school culture because of the common understandings that are developed at CLT meetings. They force deeper understanding and allow teachers to provide critical feedback to each other during planning. This can have a direct impact on classroom-level practices because teachers can adjust their instruction based on what they learned from colleagues and during the on the spot professional development that occurs at CLT meetings.

### **Finding Two**

Leadership was a key element influencing the overall success of UES through expectations for CLTs, leading change by operationalizing collaborative learning with protocols, and teacher leadership by supporting a vision for collaboration. The influence of the school-based leaders was critical in the implementation and sustenance of the organizational learning structures at UES. Former principal, Howard, was instrumental in establishing the use of protocol-structured discussions to engage staff in professional learning. Lindsay, the current principal, continued this process to date. In addition, teacher leadership continued to play an important role in continuing professional learning; members of the CLTs continued to take on leadership roles and hold each other accountable for completing the assigned sections of the unit plan based on the responsibilities assigned to each CLT member.

The relationships between the administrative leadership and teacher leadership were operationalized by the expectations for CLTs and the collaborative structures of CLTs established by the use of the protocols. Some of the recent studies that have been published (Ikemoto & Marsh, 2007; Mandinach & Honey, 2008; Wayman, 2005; Young,

2006) showed that leadership from the principal is essential in implementing an effective DDDM at a school. The What, Say what, Now what protocol was one of the three protocols CLTs utilized within the professional model established by Howard to engage staff in DDDM processes. Wayman (2005) affirmed that school leaders are the key in building a culture of data use within their schools. In a study on teacher use of data in the areas of loose coupling, agenda setting, and team norms, Young (2006) found principals to be the single most important factor in setting the goals for data use within a school. The current study was consistent with Young's findings. The principal or the assistant principal was always present at the CLT meetings. Their presence at the meetings as a participant observer allowed teachers to stay on task and dig deeper into their work.

### **Finding Three**

Protocols can be organized into a professional learning model to promote organizational learning in schools and affect instructional practices for student learning. Much of the literature reviewed for this research study focused on the effect of protocols on professional practice, student work, and DDDM. The literature on organizational learning provided several conceptual frameworks for DDDM (Boudette, City, et al., 2005; Breiter & Light, 2006; Ikemoto & Marsh, 2007; Mandinach, 2012). Based on the research of Mandinach (2012), Boudette, City, et al. (2005), Breiter and Light (2006), and Ikemoto and Marsh (2007) on DDDM, I developed a new conceptual model (Figure 5) to engage staff in DDDM by incorporating components of all four models. The new conceptual model involves four steps upon collecting the data: (a) disaggregate, (b) synthesize, (c) act, and (d) revise (action). The cyclical nature of the model enables practitioners to engage in DDDM at any given time because they can move from one

phase to another depending on needs as well as lessons learned from the ongoing data collection.

Similar to the DDDM models, Howard developed a professional learning model consisting of several protocols. The five-step model included: (a) unpacking of standards, (b) framing of standards, (c) develop instructional unit plans, (d) data analysis, and (e) DDDM group reflection. Within that model, CLTs utilized three main protocols to guide the discussions: unpacking of standards protocol; framing of standards protocol; and What, So what, Now what protocol. These protocols helped guide the CLTs in discussions to look deeper into curriculum, standards, assessment, and instructional alignment, and, most importantly, select instructional strategies to meet the various needs of students. This level of work is done under the direction of an instructional coach, administrator, or a designated school-based leader (Ballock, 2007). Unlike the DDDM models, this model focuses on instructional planning and assessment.

#### **Finding Four**

The professional learning model developed at UES had a profound impact on organizational learning and teacher leadership. In addition to the leadership influence of the principal, teacher leadership played a significant role in the implementation and sustenance of organizational learning structures. CLTs at UES were responsible for engaging in DDDM group discussions and reflections about their data. According to Earl and Katz (2006), educational leaders “often have no idea what the data mean or how to use it” (p. 17).

Howard was able to elevate the CLTs at UES because he came from a school where he had the opportunity to deploy similar reform practices. Based on his

experiences, he knew what worked and needed to work to move UES forward. Howard knew that in order to move a school forward, he had to provide a structure for planning whereby CLTs would dig deeper into curriculum, standards, and assessment. The use of these protocols elevated ordinary teachers to extraordinary levels of leadership. Teachers wanted to be a recognizable force at the CLT meetings because the CLTs were seen as non-threatening. They were allowed to share their expertise without criticism from colleagues. Joanne, a reading specialist, asserted:

So, there's a lot more modeling instead of just saying and talking about modeling not just specialists, by the teachers themselves showing each other how to teach, not just what to teach.

Mitzy, a third grade teacher, perhaps had the best statement to support the non-threatening environment Howard created at UES from 2012 to 2015:

I remembered this new principal; you wanted to do it for him because he brought it over and he made you realize why you're doing it. It's all about the students. So, when I think of this question I laughed when I saw it because I feel so passionate about old Uprising of 2002, or 2005, 2006 to 2012 to the new Uprising.

The atmosphere created by Howard made it possible for several emerging leaders to rise and take ownership of the work that needed to get done to do what was best for students. In addition, teachers took on specific roles to make CLT meetings run more efficiently. Some of the roles included: (a) Facilitator, (b) Vertical Alignment Guru, (c) Assessment Guru, (d) Agenda Queen/King, (e) Historian, and (f) WIDA Expert. The roles rotated

throughout the school year, thus allowing teachers to grow their skills in all aspects of the CLT process.

Howard viewed his role as that of a resource provider, facilitator, and problem-solver. He did not want to be a primary decision-maker unless he was called upon to play that role; rather, he empowered teachers to undertake this leadership activity. He modeled the desired expectations for CLTs and allowed them to assume the responsibilities while being a participant observer during the unpacking of standards, framing of standards, and DDDM discussions. Howard and Lindsay attended all weekly CLT meetings. They modeled and reinforced the desired expectations for all teachers and specialists. Their presence at the meetings gave confidence to the CLTs. Chloe, a third grade teacher, shared:

I feel like with them [administrators] being in our meetings, it helps us be more transparent as teachers. We feel like if they [administrators] didn't think we're doing the right thing, they would say something then and not wait until they visit the classroom.

Catherine, an ESOL teacher, further supported the presence of the administrators in the CLT meeting when she posited, "Their presence in the meetings sends a message of this is something that is important because they're there at the table." CLTs were able to get immediate feedback and clarification. Consequently, Howard and Lindsay's presence benefitted their own learning experiences because they could dig deeper into the curriculum, which allowed them to get a better understanding of the standards and how to teach the standards so they were meaningful and engaging for all students. Principal leadership (Ikemoto & Marsh, 2007; Mandinach & Honey, 2008; Wayman, 2005; Young,

2006) is the key to establishing a vision for the work at CLTs, whether that is establishing a vision for DDDM, creating a positive culture that is conducive to professional learning, or setting goals for the use of data in schools.

### **Finding Five**

The implementation of protocols had a positive effect on the school culture at UES. Bush and Middleton (2005) and Schein (1990), in their research on organizational culture, posited that leaders can influence culture by virtue of their own beliefs and values. From the beginning, it was clear that Howard held established values and core beliefs because of his prior experience as the principal of AES. Because of his accomplishments and success at AES, Howard knew one of his core values at UES would be the implementation of protocols to engage staff in professional learning. He described the process as “the way we turned the tides.”

Another central tenet of developing organizational culture is shared norms and meaning (Bush & Middleton, 2005). The CLTs made the development of norms one of their tenets as well. At the beginning of each school year, all CLTs created norms at the first meeting. The norms provided a framework for the work that would be done throughout the school year. In order to work efficiently, Howard developed a professional learning model consisting of five components. This strategic process created a culture where the contributions of all members were recognized and valued. The implementation of the various protocols created a culture that was inviting, non-judgmental, and allowed for vulnerability. As a result of the rich professional discussions, sharing of ideas, and the new learning at the CLT meetings, teachers began to meet for additional CLTs to plan for science and history. The minimum expectation



was for CLTs to plan twice a week for mathematics and language arts; however, because of the learning that was occurring, CLT members decided to hold additional meetings. This became part of the fabric of UES. To date, all CLTs meet four to five times a week even though neither the school principal nor division mandate this frequency.

From the beginning, it was evident that Howard's vision to use protocols as a means to engage in DDDM and professional learning was clear because it was focused on teachers. The key to building a culture of data use is principal leadership (Wayman, 2005). Young (2006) reported that principals are the single most important factor in setting the goals of data use within a school. Based on the strategic use of data and a specific protocol to engage in DDDM, teachers were able to change their instructional practices.

### **Finding Six**

The strategic implementation of protocol-structured discussions as a school reform strategy at UES transformed learning for teachers, administrators, and students. According to DuFour (2004), collaborative conversations call on team members to make public what has traditionally been private—goals, strategies, materials, pacing, questions, concerns, and results (p. 9). The strategic use of the unpacking and framing standards protocols provided a structure for CLTs to use to engage in professional learning practices. Protocols promote trust, commitment, and collaborative work (Ballock, 2007). Engaging in this type of learning allowed the CLTs to develop unit plans and engage in DDDM practices. These specific roles aligned with the research of Lasky et al. (2008) pertaining to the fact that particular structures and norms must be established to provide conditions that can scaffold learning.

The alignment of the learning process facilitated common understandings of classroom practices. All members of the CLT taught the same standard even though the delivery of the instruction could differ from one classroom to the next. Assessments were administered by all teachers on the same day or in most cases within the same testing window. Upon assessing students, CLTs engaged in DDDM practices. During this process, CLTs looked at student performance, classroom performance, and teacher performance on the assessments. Students who did not master the objectives taught were assigned to remediation groups, while those who mastered the objectives were provided enrichment activities. Teachers took turns enriching and remediating students throughout the school year. This process supported the research of Evans (2001). By looking at student work (LASW), teachers will reflect on their teaching and formulate an action plan to change their teaching practice (Evans, 2001). Similarly, Kazemi and Franke (2004) investigated the advantages of LASW as one type of professional development for teachers. The use of student work allows teachers to slow down instruction and raise questions about their own professional practice and student learning (Kazemi & Franke, 2003).

The process at UES engaged teachers in discussions about assessment results. One area that needs particular attention is the formulation of action plans to change their teaching practices (Deuel et al., 2009; Evans, 2001; Kazemi & Franke, 2003, 2004; Langer & Colton, 2005; Little, 2007; Little et al., 2003; McDonald, 2002; Paige, 2012). More research is needed in the area of allowing teachers to look at student work collectively to examine their teaching practices.

## **Implications for Practice and Research**

The data collected during this single-case qualitative case study into the school reform process at UES generated six findings that should be of interest to leaders in schools, businesses, and other organizations who decide to use protocol-structured discussions to improve teaching and inter-disciplinary learning. I selected UES for this study because it was evident that the school reform practices implemented under Howard's leadership benefited student learning, specifically as it related to the overall buzz created in the school division and overall performance on state assessments. As federal accountability measures continue to increase for states and local school divisions because of the gap that exists among various groups of students, school leaders must continue to be innovative in their approach to school reform practices. To that end, I believe the following implications for practice and research are critical for administrators and central office staff if they are to close the Black–White achievement gap that continues to exist in the U.S. public school system:

- Establish a vision for school reform practices and communicate that vision clearly to ensure all stakeholders know the expectations.
- Identify and establish an organizational structure whereby all members of the faculty participate in the school reform process. All members of the organizational structure should be assigned a role or be placed in a specific domain for school reform discussions and next steps.
- Develop a professional learning model to focus on unpacking and framing standards, develop instructional unit plans, engage staff in data analysis strategies, and engage in DDDM reflection.

- Within professional learning, principals should identify protocols to provide a voice to all CLT members in the processes of unpacking standards, framing standards, unit planning, and DDDM.
- Identify specific roles for CLT members. The roles must correlate with the responsibilities from the unit planning template so discussions about teaching, planning, and assessment can occur in an efficient manner.
- Build internal and external capacity by developing and nurturing teacher leadership to communicate and execute the vision as well as empower teachers to make instructional decisions and determine next steps after assessments in a collaborative environment. Whenever possible, principals should build external capacity by engaging central office support during the school reform process.
- Engage in the learning process with the staff during CLT meetings. This will build an understanding of curriculum, standards, assessment, and best practices. In addition, it builds a positive culture within the organization because the administrator is there doing the work alongside the staff.
- Visit classrooms to look for evidence to support the work developed at CLT meetings. When finding the evidence, make sure to take time to validate the teacher's efforts by providing feedback based on observations.

### **Recommendations for Future Research**

The focus of this research was on the implementation of protocol-structured discussions during the school reform process in a Title I school that benefited students in a large suburban division in the mid-Atlantic region of the United States. I investigated

the work of CLTs as they engaged in professional learning and looked at student work using specific protocols. This study should be replicated at middle and high schools with similar demographics that are participating in school reform practices to determine whether the outcomes would be the same. Similarly, this study should be replicated in a non-Title I school. Replicating the study at a middle school and high school with similar demographics and in a non-Title I school will allow researchers to truly determine the effectiveness of the use of protocol-structured discussions as a legitimate school reform strategy.

Another potential area where this study should be replicated is to explore how the UES model of school reform might be applied within the entire school division for all schools participating in school reform practices. It can be applied at all elementary schools as this was the main focus of the current study.

Perhaps the most significant recommendation that derived from this research study is the need for further research into allowing teachers to look at student work collectively to examine their teaching practices. LASW is an under-utilized practice of professional development. Little et al. (2003) posited three common elements related to how LASW contributes to professional development: (a) bringing teachers together to focus on student learning and teaching practice, (b) getting students' work on the table and into the conversation, and (c) structuring the conversation (pp. 187-188). Engaging in LASW allows teachers to move away from more general issues, such as class performance. Instead, when teachers are engaged in LASW, they dig deeper into their practice. Teachers at UES utilized the What, So what, Now what protocol to engage in DDDM, though the process of delving further into looking at each student's work and

determining next steps based on the analysis of each student's work was not prevalent. One way to do is by engaging in CFGs. Research into CFGs (Ballock, 2007; Burke et al., 2011; Curlette & Granville, 2014; Curry, 2008; Law, 2005; Little & Curry, 2008; McDonald, 2002) showed they allow for deeper conversations that are needed at CLT meetings by strategically looking at artifacts and creating focused opportunities for members of CFGs to deliberately and critically explore their own practices through a close examination of published texts and artifacts from the classroom. To do this effectively, McDonald (2002) outlined three protocols educators can use to look at student work—protocols for suspending judgment, protocols for tuning judgment, and protocols for extending judgment school-wide.

### **Summary**

The review of literature and research findings support the significance of CLTs as they engage in organizational learning practices during the school reform process. This study confirmed the original premise that protocol-structured discussions may be the missing link during school reform processes. Based on the findings of this research, one thing that became clear is that a case can be made that the effective use of protocols to engage staff in professional learning and to a certain degree looking at student work is a key component of school reform practices.

In conducting this study, I strengthened my understanding that teachers need to have structures, routines, and procedures in place to guide their learning when engaged in school reform practices. The leadership of administrators, specifically a specific vision by the principal, is critical to student success. Teachers must be empowered to fully engage in the process. This can be done by developing a professional learning model.

Administrators must provide opportunities for teachers to take on leadership roles at CLT meetings and provide an avenue whereby free-flowing ideas and vulnerability were permissible to get the hard work done. As I listened to the teachers expressing their support of one another as well as the support they received from the administrative staff, it affirmed my belief that all stakeholders must be involved for school reform practices to be effective.

As an elementary school principal of 11 years, I have had the unique opportunity to participate in school reform practices in two separate school divisions. During my first stint, I primarily relied on the systems, processes, and protocols that I created and shared with my staff. Howard was further along in his learning and understanding of what it takes to lead a school participating in school reform. His organization and strategic thinking affirmed the work I did in my previous position as principal. School leaders and central office supervisors can learn from the findings from this research study. If division leaders could find a way to implement the UES model at all levels, perhaps they could make greater strides to close the Black–White achievement gap that I discussed in Chapter one. The U.S. public education system continues to undergo changes. As states finalize guidelines from the newly enacted ESSA, perhaps the use of protocol-structured discussions as a school reform strategy during organizational practices will gain more acceptance.

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## **APPENDICES**

APPENDIX A: INTERVIEW PROTOCOL FORMER PRINCIPAL

APPENDIX B: INTERVIEW PROTOCOL CURRENT PRINCIPAL

APPENDIX C: INTERVIEW PROTOCOL DISTRICT SIP COORDINATOR

APPENDIX D: INTERVIEW PROTOCOL FOCUS GROUP, CLTS, SIP TEAM, AND OTHER-SCHOOL BASED LEADERS

APPENDIX E: DOCUMENT ANALYSIS AUTHENTICITY PROTOCOL

APPENDIX F: COMPARATIVE ANALYSIS OF PROTOCOLS FOR IMPROVING PROFESSIONAL PRACTICE AND PROTOCOLS FOR LOOKING AT STUDENT WORK PROTOCOL

APPENDIX G: WEBSITE ANALYSIS AUTHENTICITY PROTOCOL

APPENDIX H: UNPACKING THE STANDARDS PROTOCOL

APPENDIX I: FRAMING THE STANDARDS PROTOCOL

APPENDIX J: UNIT TESTS DATA ANALYSIS SHEET/WHAT, SO WHAT, NOW WHAT PROTOCOL

APPENDIX K: OBSERVATION PROTOCOL

APPENDIX L: FIELD NOTES REFLEXIVITY PROTOCOL

APPENDIX M: IRB APPROVAL DOCUMENTS

APPENDIX N: INFORMED CONSENT FOR PARTICIPANTS

APPENDIX O: COMPLETED CLT OBSERVATION FORM FOR MATH UNIT 9

APPENDIX P: UNIT 9 MEASUREMENT VERTICAL ALIGNMENT SHEET

APPENDIX Q: UNIT 9 MATH MEASUREMENT

APPENDIX R: WIDA CAN DO'S FOR UNIT 9

APPENDIX S: IRB APPROVED E-MAIL TO PARTICIPANTS

APPENDIX T: FOCUS GROUPS INTRODUCTION/PROMPTS/CLOSING

APPENDIX U: NODES COMPARED BY NUMBER OF CODING REFERENCES

APPENDIX V: LIST OF DOCUMENT REVIEWS

APPENDIX W: COMPARABLE SCHOOLS DATA PARTICIPATING IN STATE SIP  
PROCESS FROM 2011-2016

## APPENDIX A: INTERVIEW PROTOCOL FORMER PRINCIPAL

Interview Case Number: \_\_\_\_\_

Interviewee position: \_\_\_\_\_

Date of Interview: \_\_\_\_\_

Former Principal:

1. Why did you decide to use protocol-structured discussions as a school reform strategy at UES?
2. How did the use of protocols influence school culture? What evidence do you have to justify the influence on school culture?
3. How has the use of protocols changed learning for teachers, students, and administrators at UES?
4. How would you describe the data protocol system UES uses to engage teachers in the planning of instructional units?
5. How would you describe the data protocol system UES uses to engage teachers in DDDM?
6. How does teachers' thinking change after they engage in protocol-structured discussions?
7. What aspects of protocol-structured discussions are transferred to teachers' classroom practice?
8. Is there anything else you would like to add?

## APPENDIX B: INTERVIEW PROTOCOL CURRENT PRINCIPAL

Interview Case Number: \_\_\_\_\_

Interviewee position: \_\_\_\_\_

Date of Interview: \_\_\_\_\_

1. What changes, if any, have you made at UES pertaining to the use of protocol-structured discussions?
2. How has the use of protocols changed learning for teachers, students, and administrators at UES?
3. How would you describe the data protocol system your school uses to engage teachers in the planning of instructional units?
4. How would you describe the data protocol system your school uses to engage teachers in DDDM?
5. How does teachers' thinking change after they engage in protocol-structured discussions?
6. What aspects of protocol-structured discussions are transferred to teachers' classroom practice?
7. Is there anything else you would like to add?



## **APPENDIX C: INTERVIEW PROTOCOL DISTRICT SIP COORDINATOR**

Interview Case Number: \_\_\_\_\_

Interviewee position: \_\_\_\_\_

Date of Interview: \_\_\_\_\_

1. What supports are provided to schools during the school reform process? Are the supports the same at all schools?
2. UES received several recognitions by the state and division during 2012 to 2015. From a central office perspective, what do you think contributed to these recognitions?
3. How has the principal of UES made the use of protocol-structured discussions an integral part of the school reform process?
4. How would you describe the data protocol and planning protocol system UES uses to engage teachers in DDDM?
5. How does teachers' thinking change after they engage in protocol-structured discussions?
6. What aspects of protocol-structured discussions are transferred to teachers' classroom practice?
7. Is there anything else you would like to add?

**APPENDIX D: INTERVIEW PROTOCOL FOCUS GROUP, CLTS, SIP TEAM,  
AND OTHER-SCHOOL BASED LEADERS**

Interview Case Number: \_\_\_\_\_

Interviewee position: \_\_\_\_\_

Date of Interview: \_\_\_\_\_

1. What is the structure of your CLT meetings? Who is included on the specific CLTs?
2. What protocols do you use to plan instructional units? Why is this protocol important?
3. How has the use of protocols changed learning for teachers, students, and administrators at UES?
4. How would you describe the data protocol system your school uses to engage teachers in DDDM?
5. How does teachers' thinking change after they engage in protocol-structured discussions?
6. What aspects of protocol-structured discussions are transferred to teachers' classroom practice?
7. Is there anything else you would like to add?

## APPENDIX E: DOCUMENT ANALYSIS AUTHENTICITY PROTOCOL

Date:

Document Analyzed:

### Document analysis authenticity protocol

Questions for determining authenticity

- √ What is the history of the document?
- √ How did I get it?
- √ What guarantee is there that it is what it pretends to be?  
Is the document complete, as originally constructed?
- √ Has it been tampered with or edited?  
If the document is genuine, under what circumstances and for what purposes was it produced?
- √ Who was/is the author?
- √ What was he trying to accomplish? For whom was the document intended?  
What were the maker's sources of information? Does the document represent an eyewitness account, a secondhand account, reconstruction of an event long prior to the writing, an interpretation?
- √ What was or is the maker's bias?  
To what extent was the writer likely to want to tell the truth?
- √ Do other documents exist that might shed additional light on the same story, event, project, program, context? If so, are they available, accessible? Who holds them? (Merriam, 1998, p. 122) citing (Lincoln & Guba, 1981) citing Clark (1967, pp. 238-239)

**APPENDIX F: COMPARATIVE ANALYSIS OF PROTOCOLS FOR  
IMPROVING PROFESSIONAL PRACTICE AND PROTOCOLS FOR  
LOOKING AT STUDENT WORK PROTOCOL**

<b>Table 2:</b>	
<i>Relationship between Protocols for Improving Professional Practice and Looking at Student Work</i>	
<u>Protocols for Improving Professional Practice</u>	<u>Protocols for Looking at Student Work (LASW)</u>
<p>-Promote trust, commitment, collaborative work</p> <p>-Calls on team members to make what has been traditionally private-creation of goals, strategies, materials, pacing, questions, concerns, and results</p> <p>-Allow educators to look at instructional strategies, lesson planning, curriculum design, and assessing student work</p> <p>-Use of relevant data that will promote deeper understanding; learning conversations that build upon mutual respect and inquire a habit of mind to dig deeper into evidence</p> <p>-Normalize a problem of practice-further specifying the problem, revising the accounts of the problem (its nature and possible causes) and generalizing to principles of teaching</p> <p>-Seek to create focused opportunities for members to deliberately and critically explore issues of teaching close examination of either published texts or artifacts of classroom practice</p> <p>-Engaging staff in continuous learning about their practice</p> <p>-Encourage de-privatization of practice by requiring staff bring artifacts of teaching or their student's learning for collective and public review</p> <p>Gives permission to ask challenging questions, critique the practice of their peers, and offer explicit instructional advice</p>	<p>-Provides a unique view of how protocols can lead to improve teaching and learning</p> <p>-Analyzing student work allows teachers to reflect on their practice and formulate an action plan to change their practice</p> <p>-If actions plans are implemented properly then teachers will improve pedagogy and consequently student achievement</p> <p>-There is some emerging evidence that LASW yields benefits for teaching and learning</p> <p>-Some protocols for LASW:            1. Suspending judgment            2. Tuning judgment            3. Extending judgment school-wide</p> <p>-Bringing teachers together to focus on student learning and teaching practice</p> <p>-Getting students' work on the table and into the conversation</p> <p>-Structuring the conversation</p> <p>-Includes collaboration and classroom based feedback on teacher effectiveness, which indicates impact on teacher self-efficacy and instructional choice</p> <p>-Allows teachers to slow down their instruction as well as raise questions about professional practice and student learning</p> <p>-Transform small samples of work into evidence of a broader problem of practice. Helps focus attention on the evidence at hand during the allotted time.</p>
<p><u>Themes:</u></p> <p>GREEN: Collaborative Work</p> <p>BLUE: Conversations around student work</p> <p>ORANGE: Professional practice</p>	

## APPENDIX G: WEBSITE ANALYSIS AUTHENTICITY PROTOCOL

### How to Judge the Quality of Internet Resources

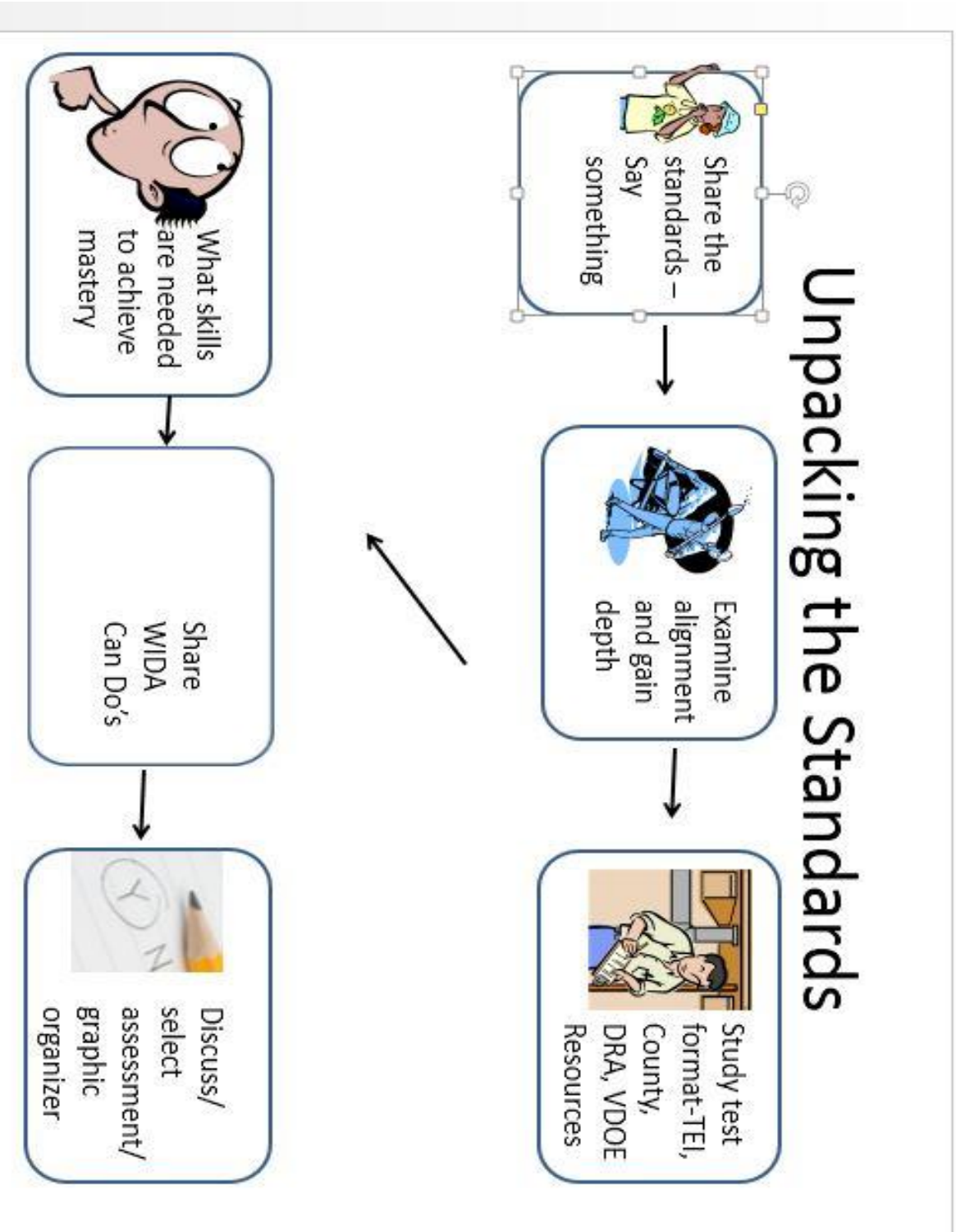
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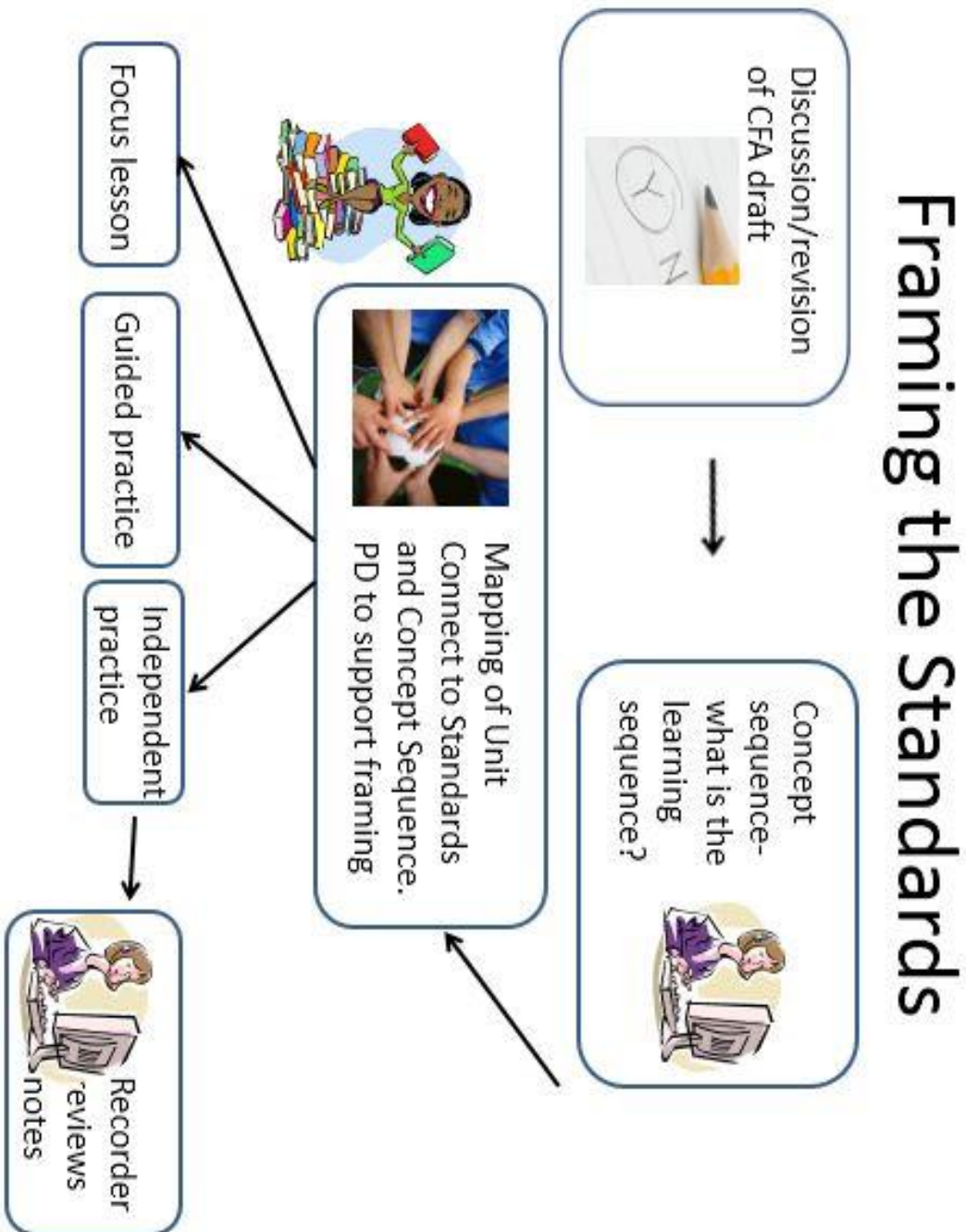
The main problem with the public Internet is determining the validity of the information provided because anyone can establish a website. The follow criteria can help differentiate good information from bad.

1. **Authority:** Authority exists if the webpage lists the author and his or her credentials and the address has a preferred domain such as: .edu, .org, or. gov. Therefore, to assess the site’s authority, you should do the following:
  - a. Find the source of the document. A URL ending in .edu is a form an institution of higher education, .gov is from some branch of the U.S. federal government, .org is from some nonprofit organization such as the American Psychological Association, .com is from a commercial vendor, and .net is from anyone who can afford to pay for space on a server.
  - b. Identify the qualifications of the publisher of the web document. You can get some of the information from the website itself by reading the “about us”, “mission”, or “who we are” sections.
  
2. **Accuracy:** Accuracy is the highest when the webpage lists the author and institution that publishes the page and provides a way of contacting the author. To assess the accuracy, you should do the following:
  - a. Look at the credentials of the person who write the webpage and check for a link or an e-mail address that will permit you to contact this person.
  - b. Identify the purpose of the information. Is it public services announcement, advertisements, sales pitch, news release, or a published research study? The purpose may suggest that a certain bias exists in the information.
  - c. Determine if there is acknowledgement of the limitations of the information, particularly if the information is the report of some study.

3. Objectivity: Objectivity is highest when the webpage has little or no advertising and provides accurate and objective information. Therefore, you should do the following:
  - a. Identify if there is any evidence of some sort of bias in the information presented.
    - i. Is the information traceable to factual information presented in some bibliographic or Internet reference? Such information may be less biased.
    - ii. Do the authors express their own opinion? Authors' opinions suggest bias.
4. Currency: Currency exists when the webpage and any links it provides are updated regularly. This means that you should determine the following information.
  - a. When the webpage was produced
  - b. When the webpage was updated and how up-to-date the link (if any) are.
5. Coverage: Coverage is good when you can view the information on the webpage without paying fees or having additional software requirements. (Johnson & Christensen (2012)).

APPENDIX H: UNPACKING THE STANDARDS PROTOCOL







**APPENDIX J: UNIT TESTS DATA ANALYSIS SHEET/WHAT, SO WHAT,  
NOW WHAT PROTOCOL**

Unit Tests Data Analysis Sheet

Grade: 4 Unit: 9 Measurement Date: 5/11/12

For each question, write the number of students that did not show mastery.

Part A						Part B					
Question	Number of Non-Mastery					Question	Number of Non-Mastery				
Question	Teacher A	Teacher B	Teacher C	Teacher D	Total	Question	Teacher A	Teacher B	Teacher C	Teacher D	Total
1.(2points)	0	0	5	1	6	5.	3	2	5	8	18
1.(1 point)	8	8	4	6	26	6.	9	7	9	8	33
1.(0points)	0	0	0	0	0	7.	6	5	10	5	26
2.(2points)	2	1	4	8	15	8.	7	11	13	12	43
2.(1 point)	0	1	4	0	5	9.	8	7	6	13	34
2.(0points)	0	2	1	0	3	10.	1	1	0	1	3
Part B						11.	6	5	3	3	17
1.	5	3	0	2	10	12.	5	2	2	7	16
2.	5	6	1	5	17	13.	2	3	4	9	18
3.	5	6	2	1	14	14.	1	3	3	7	14
4.	2	9	5	9	25	15.	3	1	3	6	13

Benchmarks:

Benchmarks	Corresponding Questions	
	Part A	Part B
4.6A Estimate & measure Weight/Mass		1, 2, 3, 5
4.6B Equivalentents Weight/Mass	2	4

<b>4.7A Estimate &amp; measure Linear</b>	1	6, 7, 8, 9
4. 7A Equivalents Linear	2	
4. 8A Estimate & measure Liquid Volume		10, 11
4. 8B Equivalent Liquid Volume	2	
4.9 Elapsed Time		12, 13, 14, 15

Class Averages							
Teacher	Number of students that took test	Part A number of student that got a 1.5 - 4	Part A %	Part B number of student that got 70% or higher	Part B %	Grade level Average	
						Total Number of students	
						Part A	Part B
Teacher A	26	26	100%	22	85%	Part A	Part B
Teacher B	23	23	100%	18	78%		
Teacher C	24	24	100%	21	87%		
Teacher D	26	26	100%	20	77%		

**What?**

Part A, #1 – Student do not know how read a ruler to the nearest quarter inch.

Part B, #4 – Students are capable of completing conversions, but were unable to think about if the conversion is less than 1 (using fractions and decimals in conversions)

Part B, #6 – Students were not successful when measuring something in the middle of the ruler.

Part B, #7 - Students were confusing centimeters and inches.

Part B, #8 – Students are estimating incorrectly.

Part B, #9 – Students did not correctly read a ruler if the unit was not listed on the ruler. (Ruler said CM, but they needed to measure in MM)

**So What?**

Part A, #1 – Students need more exposure and practice to measuring objects to the nearest quarter inch.

Misunderstanding that a ruler is a number line.

Part B, #4 – There is still a weakness in decimal and fraction equivalencies.

Part B, #6 Students are not understanding that the ruler is a number line (especially when not starting at 0)

Part B, #7 – Students used wrong benchmarks (pinky / thumb) to estimate object.

Part B, #8 – Students are not visualizing benchmarks correctly.

Part B, #9 – Students are understanding a process to answer this type of question, but not truly

understanding how to read a metric ruler and converting back and forth between the different units.

**Now What?**

Part A, #1 – Mini review of a ruler (how to read, how to connect to #line, color code), Add to spiral review (MC)

Part B, #4 – Show students a model and ask for the decimal and fraction equivalencies.

Part B, #6 – We will relate measuring on a ruler to the number line when an object doesn't start at 0.

Part B, #7 – Teachers need to review real-life benchmarks for all units of measurement (length, volume, weight)

Part B, #8 – Need more practice visualizing benchmarks with real-life examples.

Part B, #9 – Spiral Review – Ruler exposure – There are different units.

# APPENDIX K: OBSERVATION PROTOCOL

## Observation Protocol for CLT Observations Created by Clint Mitchell for Dissertation Observations

**Purpose of this tool:** This protocol serves as an observation tool to depict the work schools do as they engage in organizational learning practices. The information contained in this tool is based on the literature review on protocol-structured discussions. For my research study at Virginia Tech, I will be observing two Collaborative Learning Teams (CLTs) as they engage in different processes to look at student work and engage in professional learning.

### Part 1: Background Information:

Observer: \_\_\_\_\_ Observation Date: \_\_\_\_\_  
Observation Start Time: \_\_\_\_\_ Observation End Time: \_\_\_\_\_  
School Name/District: \_\_\_\_\_ CLT: \_\_\_\_\_  
Total # of participants in CLT: \_\_\_\_\_ Subject: \_\_\_\_\_  
Participants Names/Title: \_\_\_\_\_

### Part 2: Observation Notes:

#### Evidence of Collaborative Work

1. Do members of the CLTs share ideas freely? (Creation of goals, strategies, materials, pacing, questions, concerns, and results): \_\_\_\_\_
2. Is there trust and commitment among CLT members? \_\_\_\_\_
3. Do members of the CLTs allow for members to deliberately and critically explore issues of teaching? \_\_\_\_\_
4. Do members of the CLTs critique the practice of their peers, and offer explicit instructional advice? \_\_\_\_\_
5. Are the CLTs focusing lessons on appropriate standards? \_\_\_\_\_

Provide evidence to support observations:

## Observation Protocol for CLT Observations Created by Clint Mitchell for Dissertation Observations

#### Evidence of Conversations around Student Work

1. Student work (artifacts) is available for CLTs to review from individual teachers: \_\_\_\_\_
2. CLTs have relevant data available to gain deeper understanding and dig deeper into evidence: \_\_\_\_\_
3. Teachers raise questions about student learning: \_\_\_\_\_
4. CLTs engage in continuous learning about their practice: \_\_\_\_\_
5. Teacher action plans (Units plans, DDDM protocols) are developed based on standards and assessment results: \_\_\_\_\_
6. Do they create SMART goals based on current data? \_\_\_\_\_

Provide evidence to support observations:

#### Evidence of Professional Practice

1. Do members of the CLTs analyze student work in order to reflect on their practice? \_\_\_\_\_
2. Is there evidence and documentation (protocol) to document conversations during the CLT meetings? \_\_\_\_\_
3. Are CLT meetings focused on student learning and teacher practice? \_\_\_\_\_
4. Are the CLT meetings focused on lesson planning, curriculum design, differentiation, and instructional strategies? \_\_\_\_\_
5. Is there evidence of normalizing problems, revising accounts of the problem, and developing of action plans? \_\_\_\_\_

Provide evidence to support observations:

**Observation Protocol for CLT Observations**  
*Created by Clint Mitchell for Dissertation Observations*

***Part 3: Interactions between Teachers and Specialists and Teachers and Administrators***

How do members of the school community interact with one another when engaged in organizational learning? Capture examples of questions asked among the groups as well as responses to the questions.

<b>Interactions between Teachers and Specialists</b>	<b>Interactions between Teachers and Administrators</b>
What do you see?	What do you see?
What did you hear?	What did you hear?
What did you think?	What did you think?

## APPENDIX L: FIELD NOTES REFLEXIVITY PROTOCOL

Date:

Participants:

Location:

Facilitator:

### Field notes /Reflexivity Protocol

1.) "The penseive" (Gerstl Pepin & Patrizio, 2009; Rowling, 2000):

2.) Thick, rich description (including context):

3.) Notable Quotes:

4.) Self-Reflexivity

*Prompts:* "What do I know? How do I know what I know? What shapes and has shaped my perspective? How have my perceptions and my background affected the data I have collected and my analysis of those data? How do I perceive those I have studied? With what voice do I share my perspective? What do I do with what I have found?" (Patton, 2001, p. 495)

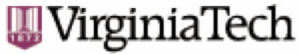
5.) Reflexivity about participants

*Prompts:* "How do those studied know what they know? What shapes and has shaped their world view? How do they perceive me, the inquirer? Why? How do I know?" (p. 495)

6.) Reflexivity about audience

*Prompts:* "How do those who receive my findings make sense of what I give them? What perspectives do they bring to the findings I offer? How do they perceive me? How do I perceive them? How do these perceptions affect what I report and how I report it?" (p. 495).

## APPENDIX M: IRB APPROVAL DOCUMENTS



**Office of Research Compliance**  
Institutional Review Board  
North End Center, Suite 4120, Virginia Tech  
300 Turner Street NW  
Blacksburg, Virginia 24061  
540/231-4606 Fax 540/231-0959  
email [irb@vt.edu](mailto:irb@vt.edu)  
website <http://www.irb.vt.edu>

### MEMORANDUM

**DATE:** March 14, 2016  
**TO:** Kami M Patrizio, Clint Michael Mitchell  
**FROM:** Virginia Tech Institutional Review Board (FWA00000572, expires January 29, 2021)  
**PROTOCOL TITLE:** ORGANIZATIONAL LEARNING: Protocol-structured discussions to improve teaching and interdisciplinary learning  
**IRB NUMBER:** 16-143

Effective March 14, 2016, the Virginia Tech Institution Review Board (IRB) Chair, David M Moore, approved the New Application request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

<http://www.irb.vt.edu/pages/responsibilities.htm>

(Please review responsibilities before the commencement of your research.)

### PROTOCOL INFORMATION:

Approved As: **Expedited, under 45 CFR 46.110 category(ies) 5,6,7**  
Protocol Approval Date: **March 14, 2016**  
Protocol Expiration Date: **March 13, 2017**  
Continuing Review Due Date\*: **February 27, 2017**

\*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

### FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

*Invent the Future*

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY  
*An equal opportunity, affirmative action institution*

**MEMORANDUM**

**DATE:** March 22, 2016  
**TO:** Kami M Patrizio, Clint Michael Mitchell  
**FROM:** Virginia Tech Institutional Review Board (FWA00000572, expires January 29, 2021)  
**PROTOCOL TITLE:** ORGANIZATIONAL LEARNING: Protocol-structured discussions to improve teaching and interdisciplinary learning  
**IRB NUMBER:** 16-143

Effective March 21, 2016, the Virginia Tech Institutional Review Board (IRB) Chair, David M Moore, approved the Amendment request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

<http://www.irb.vt.edu/pages/responsibilities.htm>

(Please review responsibilities before the commencement of your research.)

**PROTOCOL INFORMATION:**

Approved As: **Expedited, under 45 CFR 46.110 category(ies) 5,6,7**  
Protocol Approval Date: **March 14, 2016**  
Protocol Expiration Date: **March 13, 2017**  
Continuing Review Due Date\*: **February 27, 2017**

\*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

**FEDERALLY FUNDED RESEARCH REQUIREMENTS:**

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The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

*Invent the Future*



## **APPENDIX N: INFORMED CONSENT FOR PARTICIPANTS**

### **VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY**

#### **Informed Consent for Participants in Research Projects Involving Human Subjects**

##### **IRB Consent Form-Current Principal Interview**

**Title of Project: Organizational learning: Protocol-structured discussions to improve teaching and interdisciplinary learning**

**Investigator: Clint M. Mitchell                      clint13@vt.edu                      (phone number)**

**VT Sponsors: Kami Patrizio, Ed. D                      kpatrizi@vt.edu                      703-538-8324**

#### **I. Purpose of this Research Project**

This single common qualitative case study will examine and describe how Uprising Elementary School has made changes during the school reform process that benefited students. Uprising Elementary is an excellent school to study because it has been promoted throughout its school division and the state for its use of Data-Driven Decision-Making (DDDM) protocols to facilitate school reform. It is part of my dissertation, which is partial fulfillment of the requirements for the degree of Doctor of Education in Education Leadership and Policy studies at Virginia Tech University. School-based leaders, central office leaders as well as classroom teachers will participate in this research. Information gained from the study at Uprising will be disseminated to the school-based leaders to validate or inform their practices as well as add to the body of work on protocol-structured discussions and the use of protocols as learning tools for educators.

#### **II. Procedures**

I will be asking you to engage in an interview that will take forty-five minutes to one hour in duration. You will be asked to answer seven questions pertaining to the use of protocols at Uprising Elementary, the impact of protocols on teacher practice, and your role regarding the implementation and maintenance of such protocols as a school reform strategy at Uprising Elementary. We will engage in the interview at a place and time that is mutually convenient. Copies of your interview transcription will be shared with you upon your request. The deidentified data may be used for teaching purposes at Virginia Tech.

#### **III. Risks**

The risks associated with this study are considered minimal. Any potential risk will be no more than what you would encounter from your daily job. If you do not wish to participate in the study, you may opt-out without any prejudice.

**IV. Benefits**

While there is no guarantee of benefits, any benefits of this study are to inform the body of research regarding the use of protocol-structured discussions to improve teaching and interdisciplinary learning. You are not receiving any promises or guarantees of benefits for participating in this study.

**V. Extent of Anonymity and Confidentiality**

The data collected in this study will be confidential. Pseudonyms will be used to protect the confidentiality of the school division, Uprising Elementary, and your participation in the study. Your interview will be digitally recorded in order to have accurate transcriptions. I will be taking hand written notes during your interview. You will be given the opportunity to review your individual interview transcript. The option to engage in this review will be indicated on the consent form. I will destroy all data 3 years from the defense of my dissertation. The Virginia Tech (VT) Institutional Review Board (IRB) may view the study’s data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

**VI. Compensation**

There is no compensation associated with participation in this study.

**VII. Freedom to Withdraw**

You are free to withdraw from this study at any time without prejudice.

**VIII. Subject’s Consent**

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent:

\_\_\_\_\_ Date \_\_\_\_\_  
Subject signature

\_\_\_\_\_  
Subject printed name

\_\_\_\_\_ Date \_\_\_\_\_  
Investigator signature

\_\_\_\_\_  
Investigator printed name

\_\_\_\_\_ Date \_\_\_\_\_  
Dissertation Chair signature

Dissertation Chair printed name

       I would like to review transcripts. I understand that I have 10 business days to review the transcripts from the date they are emailed to me to review.

       I do not want to review the transcripts.

**IX. Questions or Concerns**

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document. Should you have any questions or concerns about the study's conduct or your rights as a research subject, or need to report a research-related injury or event, you may contact the VT IRB Chair, Dr. David M. Moore at [moored@vt.edu](mailto:moored@vt.edu) or (540) 231-4991.

-----  
(Note: each subject must be provided a copy of this form. In addition, the IRB office may stamp its approval on the consent document(s) you submit and return the stamped version to you for use in consenting subjects; therefore, ensure each consent document you submit is ready to be read and signed by subjects.

## **IRB Consent Form-Former Principal Interview**

**Title of Project: Organizational learning: Protocol-structured discussions to improve teaching and interdisciplinary learning**

**Investigator: Clint M. Mitchell**                      **clint13@vt.edu**                      **(phone number)**

**VT Sponsors: Kami Patrizio, Ed. D**                      **kpatrizi@vt.edu**                      **703-538-8324**

### **I. Purpose of this Research Project**

This single common qualitative case study will examine and describe how Uprising Elementary School has made changes during the school reform process that benefited students. Uprising Elementary is an excellent school to study because it has been promoted throughout its school division and the state for its use of Data-Driven Decision-Making (DDDM) protocols to facilitate school reform. It is part of my dissertation, which is partial fulfillment of the requirements for the degree of Doctor of Education in Education Leadership and Policy studies at Virginia Tech University. School-based leaders, central office leaders as well as classroom teachers will participate in this research. Information gained from the study at Uprising will be disseminated to the school-based leaders to validate or inform their practices as well as add to the body of work on protocol-structured discussions and the use of protocols as learning tools for educators.

### **II. Procedures**

I will be asking you to engage in an interview that will take forty-five minutes to one hour in duration. You will be asked to answer eight questions pertaining to the use of protocols at Uprising Elementary, the impact of protocols on teacher practice, and your role regarding the implementation and maintenance of such protocols as a school reform strategy at Uprising Elementary. We will engage in the interview at a place and time that is mutually convenient. Copies of your interview transcription will be shared with you upon your request. The deidentified data may be used for teaching purposes at Virginia Tech.

### **III. Risks**

The risks associated with this study are considered minimal. Any potential risk will be no more than what you would encounter from your daily job. If you do not wish to participate in the study, you may opt-out without any prejudice.

### **IV. Benefits**

While there is no guarantee of benefits, any benefits of this study are to inform the body of research regarding the use of protocol-structured discussions to improve teaching and interdisciplinary learning. You are not receiving any promises or guarantees of benefits for participating in this study.

**V. Extent of Anonymity and Confidentiality**

The data collected in this study will be confidential. Pseudonyms will be used to protect the confidentiality of the school division, Uprising Elementary, and your participation in the study. Your interview will be digitally recorded in order to have accurate transcriptions. I will be taking hand written notes during your interview. You will be given the opportunity to review your individual interview transcript. The option to engage in this review will be indicated on the consent form. I will destroy all data 3 years from the defense of my dissertation. The Virginia Tech (VT) Institutional Review Board (IRB) may view the study’s data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

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**VII. Freedom to Withdraw**

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**VIII. Subject’s Consent**

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent:

\_\_\_\_\_ Date \_\_\_\_\_  
Subject signature

\_\_\_\_\_  
Subject printed name

\_\_\_\_\_ Date \_\_\_\_\_  
Investigator signature

\_\_\_\_\_  
Investigator printed name

\_\_\_\_\_ Date \_\_\_\_\_  
Dissertation Chair signature

\_\_\_\_\_  
Dissertation Chair printed name

\_\_\_\_\_ I would like to review transcripts. I understand that I have 10 business days to

review the transcripts from the date they are emailed to me to review.

       I do not want to review the transcripts.

**IX. Questions or Concerns**

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document. Should you have any questions or concerns about the study's conduct or your rights as a research subject, or need to report a research-related injury or event, you may contact the VT IRB Chair, Dr. David M. Moore at [moored@vt.edu](mailto:moored@vt.edu) or (540) 231-4991.

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(Note: each subject must be provided a copy of this form. In addition, the IRB office may stamp its approval on the consent document(s) you submit and return the stamped version to you for use in consenting subjects; therefore, ensure each consent document you submit is ready to be read and signed by subjects.

## IRB Consent Form-District SIP Coordinator

**Title of Project: Organizational learning: Protocol-structured discussions to improve teaching and interdisciplinary learning**

**Investigator: Clint M. Mitchell**                      **clint13@vt.edu**                      **(phone number)**

**VT Sponsors: Kami Patrizio, Ed. D**                      **kpatrizi@vt.edu**                      **703-538-8324**

### **I. Purpose of this Research Project**

This single common qualitative case study will examine and describe how Uprising Elementary School has made changes during the school reform process that benefited students. Uprising Elementary is an excellent school to study because it has been promoted throughout its school division and the state for its use of Data-Driven Decision-Making (DDDM) protocols to facilitate school reform. It is part of my dissertation, which is partial fulfillment of the requirements for the degree of Doctor of Education in Educational Leadership and Policy studies at Virginia Tech University. School-based leaders, central office leaders as well as classroom teachers will participate in this research. Information gained from the study at Uprising will be disseminated to the school-based leaders to validate or inform their practices as well as add to the body of work on protocol-structured discussions and the use of protocols as learning tools for educators.

### **II. Procedures**

I will be asking you to engage in an interview that will take forty-five minutes to one hour in duration. You will be asked to answer seven questions pertaining to the use of protocols at Uprising Elementary, the impact of protocols on teacher practice, and your role during the school reform process at Uprising Elementary. We will engage in the interview at a place and time that is mutually convenient. Copies of your interview transcription will be shared with you upon your request. The deidentified data may be used for teaching purposes at Virginia Tech.

### **III. Risks**

The risks associated with this study are considered minimal. Any potential risk will be no more than what you would encounter from your daily job. If you do not wish to participate in the study, you may opt-out without any prejudice.

### **IV. Benefits**

While there is no guarantee of benefits, any benefits of this study are to inform the body of research regarding the use of protocol-structured discussions to improve teaching and interdisciplinary learning. You are not receiving any promises or guarantees of benefits for participating in this study.

**V. Extent of Anonymity and Confidentiality**

The data collected in this study will be confidential. Pseudonyms will be used to protect the confidentiality of the school division, Uprising Elementary, and your participation in the study. Your interview will be digitally recorded in order to have accurate transcriptions. I will be taking hand written notes during your interview. You will be given the opportunity to review your individual interview transcript. The option to engage in this review will be indicated on the consent form. I will destroy all data 3 years from the defense of my dissertation. The Virginia Tech (VT) Institutional Review Board (IRB) may view the study’s data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

**VI. Compensation**

There is no compensation associated with participation in this study.

**VII. Freedom to Withdraw**

You are free to withdraw from this study at any time without prejudice.

**VIII. Subject’s Consent**

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent:

\_\_\_\_\_ Date \_\_\_\_\_  
Subject signature

\_\_\_\_\_  
Subject printed name

\_\_\_\_\_ Date \_\_\_\_\_  
Investigator signature

\_\_\_\_\_  
Investigator printed name

\_\_\_\_\_ Date \_\_\_\_\_  
Dissertation Chair signature

\_\_\_\_\_  
Dissertation Chair printed name

\_\_\_\_\_ I would like to review transcripts. I understand that I have 10 business days to review the transcripts from the date they are emailed to me to review.

\_\_\_\_\_ I do not want to review the transcripts.



## **IX. Questions or Concerns**

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document. Should you have any questions or concerns about the study's conduct or your rights as a research subject, or need to report a research-related injury or event, you may contact the VT IRB Chair, Dr. David M. Moore at [moored@vt.edu](mailto:moored@vt.edu) or (540) 231-4991.

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(Note: each subject must be provided a copy of this form. In addition, the IRB office may stamp its approval on the consent document(s) you submit and return the stamped version to you for use in consenting subjects; therefore, ensure each consent document you submit is ready to be read and signed by subjects.

## **IRB Consent Form-CLT Observations**

### **VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY Informed Consent for Participants in Research Projects Involving Human Subjects**

**Title of Project: Organizational learning: Protocol-structured discussions to improve teaching and interdisciplinary learning**

**Investigator: Clint M. Mitchell                      clint13@vt.edu                      (phone number)**

**VT Sponsors: Kami Patrizio, Ed. D                      kpatrizi@vt.edu                      703-538-8324**

#### **I. Purpose of this Research Project**

This single common qualitative case study will examine and describe how Uprising Elementary School has made changes during the school reform process that benefited students. Uprising Elementary is an excellent school to study because it has been promoted throughout its school division and the state for its use of Data-Driven Decision-Making (DDDM) protocols to facilitate school reform. It is part of my dissertation, which is partial fulfillment of the requirements for the degree of Doctor of Education in Education Leadership and Policy studies at Virginia Tech University. School-based leaders, central office leaders as well as classroom teachers will participate in this research. Information gained from the study at Uprising will be disseminated to the school-based leaders to validate or inform their practices as well as add to the body of work on protocol-structured discussions and the use of protocols as learning tools for educators.

#### **II. Procedures**

I will be asking you to participate in a Collaborative Learning Team (CLT) observation that will take forty-five minutes to one hour. Your observation will be conducted at one of your CLT meetings that is mutually convenient for your CLT and the school principal. Observations of your CLT meeting will be conducted in a manner that will be unobtrusive to the school environment. Copies of your CLT observation will be shared with you upon request. The de-identified data may be used for teaching purposes at VT.

#### **III. Risks**

The risks associated with this study are considered minimal. Any potential risk will be no more than what you would encounter from your daily job. If you do not wish to participate in the study, you may opt-out without any prejudice.

#### **IV. Benefits**

While there is no guarantee of benefits, any benefits of this study are to inform the body of research regarding the use of protocol-structured discussions to improve teaching and

interdisciplinary learning. You are not receiving any promises or guarantees of benefits for participating in this study.

**V. Extent of Anonymity and Confidentiality**

The data collected in this study will be confidential. Pseudonyms will be used to protect the confidentiality of the school division, Uprising Elementary, and your participation in the study. Your CLT observation will be digitally recorded in order to have accurate transcriptions. You will be given the opportunity to review your CLT observation transcript. I will be taking hand written notes during your CLT observation. The option to engage in this review will be indicated on the consent form. I will destroy all data 3 years from the defense of my dissertation. The Virginia Tech (VT) Institutional Review Board (IRB) may view the study’s data for auditing purposes. The IRB is responsible for the oversight of the protection of human subjects involved in research.

**VI. Compensation**

There is no compensation associated with participation in this study.

**VII. Freedom to Withdraw**

You are free to withdraw from this study at any time without prejudice.

**VIII. Subject’s Consent**

I have read the Consent Form and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent:

\_\_\_\_\_ Date \_\_\_\_\_  
Subject signature

\_\_\_\_\_  
Subject printed name

\_\_\_\_\_ Date \_\_\_\_\_  
Investigator signature

\_\_\_\_\_  
Investigator printed name

\_\_\_\_\_ Date \_\_\_\_\_  
Dissertation Chair signature

\_\_\_\_\_  
Dissertation Chair printed name

\_\_\_\_\_ I would like to review observation notes. I understand that I have 10 business days to review the observation notes from the date they are emailed to me to review.

\_\_\_\_\_ I do not want to review the observation notes.

**IX. Questions or Concerns**

Should you have any questions about this study, you may contact one of the research investigators whose contact information is included at the beginning of this document. Should you have any questions or concerns about the study's conduct or your rights as a research subject, or need to report a research-related injury or event, you may contact the VT IRB Chair, Dr. David M. Moore at [moored@vt.edu](mailto:moored@vt.edu) or (540) 231-4991.

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(Note: each subject must be provided a copy of this form. In addition, the IRB office may stamp its approval on the consent document(s) you submit and return the stamped version to you for use in consenting subjects; therefore, ensure each consent document you submit is ready to be read and signed by subjects.

## APPENDIX O: COMPLETED CLT OBSERVATION FORM FOR MATH UNIT 9

**Purpose of this tool:** This protocol serves as an observation tool to depict the work schools do as they engage in organizational learning practices. The information contained in this tool is based on the literature review on protocol-structured discussions. For my research study at Virginia Tech, I will be observing two Collaborative Learning Teams (CLTs) as they engage in different processes to look at student work and engage in professional learning.

### Part 1: Background Information:

Observer: Clint Mitchell Observation Date: 3/31/2016

Observation Start Time: 10:10 AM Observation End Time: 11:00 AM

School Name/District: Uprising ES/Joshua Public Schools CLT: 4<sup>th</sup>  
Grade                     

Total # of participants in CLT: 8 Subject: Math

Participants Names/Title: Lindsay-Principal, Chloe-4<sup>th</sup> Grade Teacher, Ana-4<sup>th</sup> Grade Teacher, Regina-4<sup>th</sup> Grade Teacher, Kendal-LD Specialist, Juliana-ESOL Teacher, and Tracy-Math Specialist

### Part 2: Observation Notes:

#### Evidence of Collaborative Work

1. Do members of the CLTs share ideas freely? (Creation of goals, strategies, materials, pacing, questions, concerns, and results): X
2. Is there trust and commitment among CLT members? X
3. Do members of the CLTs allow for members to deliberately and critically explore issues of teaching? X
4. Do members of the CLTs critique the practice of their peers, and offer explicit instructional advice?
5. Are the CLTs focusing lessons on appropriate standards? X

Provide evidence to support observations:

-CLT was engaged in a collaborative effort to plan Math Unit 9 (Measurement). This process is a standard practice at Uprising Elementary, whereby teachers meet weekly to unpack the standards from a unit prior to teaching the unit. In addition to unpacking the standards from the state and county curriculum, the CLT also engage in a process called "Framing" whereby the CLT team....

-The first step in the process was the utilization of the CLT protocol entitled "Say Something" whereby teachers look at each strand and share their thoughts.

-Ideas to teach the unit flowed freely; teachers and specialists provided input pertaining to understanding and teaching key vocabulary concepts. For example, the ESOL teacher jumped right in and shared her concern and how to teach some of the key vocabulary words ELL students might struggle with from the unit. The first vocabulary concern was the term "Benchmark." Other strategies shared by members of the CLT include a "Brain Dump."

-The CLT team reviewed each curriculum strand from unit 9. They are: 4.6-Weight, 4.7-Length, 4.8-Liquid Volume, and 4.9-Time. The CLT team discussed each strand in detail and discussed areas of concern pertaining to the teaching the unit. Some of the other concerns include concerns with conversations, estimation, struggle with big concepts of measurement, using a variety of measurement tool/objects, etc.

### Evidence of Conversations around Student Work

1. Student work (artifacts) is available for CLTs to review from individual teachers: \_\_\_\_\_
2. CLTs have relevant data available to gain deeper understanding and dig deeper into evidence:  X
3. Teachers raise questions about student learning: \_\_\_\_\_
4. CLTs engage in continuous learning about their practice: \_\_\_\_\_
5. Teacher action plans (Units plans, DDDM protocols) are developed based on standards and assessment results:  X
6. Do they create SMART goals based on current data? \_\_\_\_\_

#### Provide evidence to support observations:

-While this was not a DDDM observation, the CLT team had relevant data from the previous year from the common formative assessment (CFA) as well as end of year Standards of Learning (SOL)

-Lindsay shared results from the school division, pertaining to the key areas the students at Uprising struggled as well as the areas they excelled in. She also shared data from the third grade students who are now enrolled in fourth grade. She provided pass rates for Uprising, the school division, and the state so that teachers can get a glimpse on students prior knowledge and performance. Some of the data shared include:

1. Previous year CFA data results show a 91.25 % on Part A and a 100% on Part B of the test. Part A is open ended/word problems, Part B is multiple choice.
2. SOL data from previous year (third grade) show student performance as at or above the school division/state. Specifics include: Area-81%, measuring to find perimeter-72%, solving practical problems with elapsed time to the hour-93%, time to the minute-63%, etc.
3. SOL data from the previous year (fourth grade) show student performance at or above the school division/state. Specifics include: Liquid volume-81%, determining elapsed time-78%, Identify equivalent measures for length-84%, Liquid volume-93%, Weight and Mass-86%, etc.

*Note: CLT team observed that on the SOL, their area of weakness was elapsed time but on the CFA assessments given at the school, it was an area of strength.*

-The CLT team discussed reasons why they believed students were not successful on some of the questions. They identified each of the questions they had concerned about and discussed it thoroughly at the CLT meeting. Some of the questions from the unit test from the previous years that was of the utmost concern was: Questions, 6, 8, and 9. Areas of weakness was length and estimation using a ruler.

-Tracy (Math Specialist) provided some input regarding remediation strategies

### Evidence of Professional Practice

1. Do members of the CLTs analyze student work in order to reflect on their practice? \_\_\_\_\_
2. Is there evidence and documentation (protocol) to document conversations during the CLT meetings?  X
3. Are CLT meetings focused on student learning and teacher practice?  X
4. Are the CLT meetings focused on lesson planning, curriculum design, differentiation, and instructional strategies?  X
5. Is there evidence of normalizing problems, revising accounts of the problem, and developing of action plans?  X

#### Provide evidence to support observations:

-During the CLT planning session, the ESOL teacher reviewed the WIDA standards; she provided ideas pertaining to the level of support needed for each ELL level. Some of the level of support range from picture cues for the level 1 students to minimal support to level 5/6 students who are mainstreamed in the general education setting with their peers. Example: Level 1 ELL students can identify the metric system from labeling different examples, level 2 students needing the support of picture cues, to minimal support to the level 5/6 students.

-The CLT team reviewed the third grade standard; they matched the third grade to the fourth grade system, followed by a review of the fifth grade standard. This vertical alignment was prepared by one of the other CLT members who was not present at the meeting. This document was color coded by each standard (Red, Green, Blue, and Purple) to represent each grade level standard from grades 3-5.

-CLT discussed SOL questions (previously released) by sharing examples on the SMART interactive board to address each strand. They discussed potential pitfalls students may face as they see these questions. In addition, the CLT team discussed the types of questions and how they could be incorporated in the other content areas.

-Upon finishing the review of sample SOL questions, the fourth grade CLT reviewed the unit test for unit 9; they discussed each question in detail and provide ideas/tools to help teach the unit. Some of the examples shared include sentence stems, use of scale, etc.

-Thereafter, the CLT reviewed previous data and student performance of the state and common formative assessment (CFA).

-Throughout the CLT meeting, several protocols were utilized by the 4<sup>th</sup> grade CLT. Some of the protocols include:

1. Unpacking the Standards Protocol
2. Framing the Standards Protocol

*Note: See Evidence of student work for more details on assessment.*

### ***Part 3: Interactions between Teachers and Specialists and Teachers and Administrators***

How do members of the school community interact with one another when engaged in organizational learning? Capture examples of questions asked among the groups as well as responses to the questions.

<b>Interactions between Teachers and Specialists</b>	<b>Interactions between Teachers and Administrators</b>
<p><b>What do you see?</b></p> <p>-Collaboration between the classroom teachers was fluid; it is evident that there is a lot of trust on this CLT. Members share ideas freely; they don't have a specific person designated as the grade level chair, however there are some specific roles for each team member. For example, Ana facilitated the discussion on the planning of unit 9. Juliana was the first to dive in and share her concern with some of the vocabulary word during the "Say Something" part of the discussion.</p> <p>- The CLT team did an outstanding job of planning in advance for this meeting. This was evidence by the curriculum comparison documents prepared in advance as well as the sample questions pulled by the CLT.</p> <p><b>What did you hear?</b></p> <p>-The depth of knowledge with the state and county curriculum was fascinating; lots of discussion and input provided by each CLT member. Everyone contributed ideas freely. Outstanding job with the review of the WIDA standards and outlining what each student should be able to do based on their level.</p> <p>-The LD and Math specialist provided ideas from their experience freely; For example: Kendal, LD specialist discussed the use of an actual clock, while the Math Specialist, Tracy provided some ideas for remediation.</p> <p><b>What did you think?</b></p> <p>-I have been a Principal for 10 years and an Assistant Principal for 3 years before I was appointed as principal; during that time, I have seen a lot of schools engage in grade level meetings. I have never seen one as efficient as what I saw today. This includes my own grade level team. We are very efficient as a team at my school but there are some details from the CLT at Uprising that takes it a step above. The systematic use of the CLT protocol, the framing of the standard as well as the depth of conversation is exactly what is missing in school reform processes.</p>	<p><b>What do you see?</b></p> <p>-Lindsay, a first year principal but a former teacher and Assistant Principal at Uprising played a critical role during the CLT meeting, As the group co-facilitator, she did an outstanding job of keeping the fourth grade CLT on task. She managed the time very effectively.</p> <p>-In addition, she played a critical role in the data discussion. She had her laptop with relevant data from the third graders who are now in fourth grade as well as fourth grade student data who are now in fifth grade to share with the team. This provided some context to the CLT as they reviewed their CFA data from the previous year. The CLT was able to outlined areas of weakness on both the school CFA data as well as the state SOL data.</p> <p><b>What did you hear?</b></p> <p>-Heard ideas, strategies, and any other relevant input being provided and shared freely. There was no blaming except just problem solving.</p> <p>-Heard data shared freely from teachers and the principal.</p> <p><b>What did you think?</b></p> <p>-One of the characteristics of school reform is the efficiency of what experts call "Systems and Processes." If schools have these two things very tight in their building, they are bound to succeed. I pride myself on this; it is the reason why we are ranked number 4 among title 1 schools in the division. I can see why Uprising is ranked in the top 5 of all Title 1 schools in the division.</p>

## APPENDIX P: UNIT 9 MEASUREMENT VERTICAL ALIGNMENT SHEET

### Unit 9 – 4<sup>th</sup> Grade

3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>
<p><b>3.9</b> The student will estimate and use U.S. Customary and metric units to measure</p> <p>a) length to the nearest 12-inch, inch, foot, yard, centimeter, and meter;</p> <p>b) liquid volume in cups, pints, quarts, gallons, and liters;</p> <p>c) weight/mass in ounces, pounds, grams, and kilograms; and</p> <p>d) area and perimeter.</p> <p><b>3.10</b> The student will</p> <p>a) measure the distance around a polygon in order to determine perimeter; and</p> <p>b) count the number of square units needed to cover a given surface in order to determine area.</p> <p><b>3.11</b> The student will</p> <p>a) tell time to the nearest minute, using analog and digital clocks; and</p> <p>b) determine elapsed time in one-hour increments over a 12-hour period.</p> <p><b>3.12</b> The student will identify equivalent periods of time, including relationships among days, months, and years, as well as minutes and hours.</p> <p><b>3.13</b> The student will read temperature to the nearest degree from a Celsius thermometer and a Fahrenheit thermometer. Real thermometers and physical models of thermometers will be used.</p>	<p><b>4.6</b> The student will</p> <p>a) estimate and measure weight/mass and describe the results in U.S. Customary and metric units as appropriate; and</p> <p>b) identify equivalent measurements between units within the U.S. Customary system (ounces, pounds, and tons) and between units within the metric system (grams and kilograms).</p> <p><b>4.7</b> The student will</p> <p>a) estimate and measure length, and describe the result in both metric and U.S. Customary units; and</p> <p>b) identify equivalent measurements between units within the U.S. Customary system (inches and feet; feet and yards; inches and yards; yards and miles) and between units within the metric system (millimeters and centimeters; centimeters and meters; and millimeters and meters).</p> <p><b>4.8</b> The student will</p> <p>a) estimate and measure liquid volume and describe the results in U.S. Customary units; and</p> <p>b) identify equivalent measurements between units within the U.S. Customary system (cups, pints, quarts, and gallons).</p> <p><b>4.9</b> The student will determine elapsed time in hours and minutes within a 12-hour period.</p>	<p><b>5.8</b> The student will</p> <p>a) find perimeter, area, and volume in standard units of measure;</p> <p>b) differentiate among perimeter, area, and volume and identify whether the application of the concept of perimeter, area, or volume is appropriate for a given situation;</p> <p>c) identify equivalent measurements within the metric system;</p> <p>d) estimate and then measure to solve problems, using U.S. Customary and metric units; and</p> <p>e) choose an appropriate unit of measure for a given situation involving measurement using U.S. Customary and metric units.</p> <p><b>5.9</b> The student will identify and describe the diameter, radius, chord, and circumference of a circle.</p> <p><b>5.10</b> The student will determine an amount of elapsed time in hours and minutes within a 24-hour period.</p> <p><b>5.11</b> The student will measure right, acute, obtuse, and straight angles.</p>



## APPENDIX Q: UNIT 9 MATH MEASUREMENT

**Grade Level: 4<sup>th</sup> Unit: 9 Measurement**

**Time Frame: 4/11 – 5/6**

Essential Questions for this Unit (focus on student friendly language)	State Standards & Essential Knowledge:
<p>How are measurements of weight/mass made?</p> <p>How do we determine an appropriate unit of measure?</p> <p>How can we use benchmarks from real life to estimate?</p> <p>How are measurements of length made?</p> <p>How does a ruler utilize fractional parts?</p> <p>How are measurements of liquid volume made?</p> <p>What is meant by elapsed time?</p> <p>In what everyday situations do we determine elapsed time?</p> <p>How can elapsed time be determined?</p>	<p><b>4.6 WEIGHT / MASS</b></p> <p>a) estimate and measure weight / mass and describe the results in U.S. Customary and metric units as appropriate</p> <p>b) identify equivalent measurements between units within the U.S. Customary system (ounces, pounds, and tons) and between units within the metric system (grams and kilograms)</p> <p><b>4.7 LENGTH</b></p> <p>a) estimate and measure length, and describe the result in both metric and U.S. Customary units</p> <p>b) identify equivalent measurements between units within the U.S. Customary system (inches and feet; feet and yards; inches and yards; yards and miles) and between units within the metric system (millimeters and centimeters; centimeters and meters; and millimeters and meters)</p> <p><b>4.8 LIQUID VOLUME</b></p> <p>a) estimate and measure liquid volume and describe the results in U.S. Customary units</p> <p>b) identify equivalent measurements between units within the U.S. Customary system (cups, pints, quarts, and gallons)</p> <p><b>4.9 TIME</b></p> <p>Determine elapsed time in hours and minutes within a 12-hour period</p>

Assessment (teacher & student based)
<p><b>Diagnostic</b> (access prior knowledge):</p> <p>3<sup>rd</sup> graders: 93% elapsed time to the hour 63% telling time to the minute</p> <p>Our 4<sup>th</sup> graders last year:</p> <p>Liquid volume 81% (79% county) Elapsed time 78% (61% county) Equivalent measures of length 84% (63% county) Equivalent measures volume 93% (county 78) Equivalent measures weight mass 86% (county 50%) Measuring length 86% (85%) Estimating weight mass (51% county)</p> <p><b>Formative:</b> weekly quick checks / exit tickets</p> <p><b>Summative:</b> Unit 9 PWCS test</p>

Materials & Resources (What do teachers have to share?) (What does our library have?)	Language & Key Vocabulary	Learning/Cognitive Strategies
<p>Math Investigations</p> <p>Math Connects</p> <p><i>Lucky Beans</i> - Literature Connection</p> <p>SOL STEMS:</p> <p><b>Sentence Frames:</b></p>	<p><b>Key Vocabulary:</b></p> <p>Benchmark</p> <p>Conversion</p> <p>Estimate</p> <p>Gram (g)</p> <p>Kilogram (kg)</p> <p>Mass</p> <p>Metric</p> <p>Ounce (oz)</p> <p>Pound (lb)</p> <p>Ton (t)</p> <p>U.S Customary</p> <p>Weight</p> <p>Centimeter (cm)</p> <p>Foot (ft)</p> <p>Inch (in)</p>	<p><b>Differentiation for learners' needs:</b> (What will you do to differentiate your instruction?)</p> <p>Sentence frames or starters</p> <p>Modify the language</p> <p>Provide templates</p> <p>Scaffolding</p> <p>Small group instruction with more guided practice while others work independently</p> <p>Use of manipulatives</p>

	Kilometer (km) Meter (m) Mile (mi) Millimeter (mm) Yard (yd) Capacity Cup (c) Equivalent measurements Gallon (gal) Pint (pt) Quart (qt) Volume a.m. elapsed time hours minutes p.m.	
<b>Language Objectives</b> ( <i>with ELL's in mind</i> ): I can explain...		

WIDA Can Do's				
Level 1	Level 2	Level 3	Level 4	Level 5

<p><b>Task Analysis (What they should already know)</b></p> <p>How to tell time to the minute          Elapsed time to the hour          Estimate which unit they would use          Practice measuring things with a ruler (inch and ½ inch), and volume units          Braindump anchor chart (land of G)          Know benchmarks for different weight/mass, and distance (length)</p>
---

<p><b>Concept Sequence:</b></p> <ul style="list-style-type: none"> <li>-Introduce vocabulary</li> <li>-Customary length / Metric Length             <ol style="list-style-type: none"> <li>1. Estimate</li> <li>2. Use appropriate units</li> <li>3. Measure objects</li> <li>4. Conversions (in-ft, ft/in-yards, ft-yards-miles) (mm-cm/m, cm-m, m-km)</li> </ol> </li> <li>-Customary volume             <ol style="list-style-type: none"> <li>1. Estimates</li> <li>2. Appropriate units</li> <li>3. Practice measuring objects</li> <li>4. Conversions</li> </ol> </li> <li>-Customary Weight Mass/ Metric Weight Mass             <ol style="list-style-type: none"> <li>1. Estimates</li> <li>2. Appropriate units</li> <li>3. Practice measuring objects</li> <li>4. Conversions</li> </ol> </li> <li>-Elapsed Time             <ol style="list-style-type: none"> <li>1. To the nearest minute when missing either start, end or elapsed</li> </ol> </li> </ul>
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## APPENDIX R: WIDA CAN DO'S FOR UNIT 9

### Measurement WIDA (U.S. Customary and Metric)

Level 1	Level 2	Level 3	Level 4	Level 5
<p>Identify the tools and units of the standard and the metric system from labeled examples or visuals (ex. Ruler-inches and centimeters)</p>	<p>Estimate the standard or metric measurement from pictures or real objects (ex. The dog weighs about 10 kilograms)</p>	<p>Identify the equivalent measurements between the units in the standard and metric measurement system with the support of illustrated examples (ex. Grape weighs a gram and a slice of bread weighs an ounce)</p> <p>Describe real life situations where measurement is needed using illustrations</p>	<p>Estimate and describe the results in the standard metric system of measurement</p> <p>Discuss how measurement is used in real life situations from illustrations  ( ex. Construction worker)</p>	<p>Explain how or when to convert standard or metric measurement in real –life situations</p>

## APPENDIX S: IRB APPROVED E-MAIL TO PARTICIPANTS

Dear XXX,

I am writing today to ask your consideration to participate in a research study I am conducting about the use of protocols at elementary schools. The exact topic of my research is Organizational Learning: Protocol-structured discussions to improve teaching and interdisciplinary learning. Would you be willing to participate in my research? Please see attached documents for information about the study. Additionally, I am willing to discuss this further either by phone or in person, if necessary.

Thank you in advance for any help you can provide. I would be honored if you would accept this invitation to participate.

Sincerely,

Clint Mitchell

(phone number)

(email address)

## **APPENDIX T: FOCUS GROUPS INTRODUCTION/PROMPTS/CLOSING**

Good morning/afternoon. Thank you for taking the time to join our discussion

Organizational Learning: Protocol-structured discussions to improve teaching and interdisciplinary learning. My name is Clint Mitchell and I represent Virginia Tech, as I am working on my doctorate in education. We are here to discuss how Uprising Elementary Schools has made use of protocol-structured discussions during the school reform or improvement process from 2012 to the current day. My research will cover the schools years from 2012 to 2015. I have invited your team to participate because your school has earned two of the highest designations from the state and the school division- School of Excellence and being designated as a school to watch for its ELL performance by the Governor. Your students and your team has shown tremendous group in mathematics and language arts during those years.

Today we will be discussing your thoughts and opinions about Uprising Elementary has made changes during the school reform/improvement process that benefitted students by using specific protocols to improve teaching and interdisciplinary learning. To make things clearer for you, I have provided you a sheet with some operational definitions just in case you do not understand the meaning of a term that I use in the research. There are no wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said.

Before we begin, let me suggest some things that will make our discussion more productive. Please speak up-only one person should talk at a time. I am tape recording the session because I don't want to miss any of your comments. We will be on a first name basis based on the pseudonyms that you have chosen. In my report, there will not be any

“real” names attached to comments. You may be assured of confidentiality. I respectfully ask that cell phones are turned off and put out of sight.

My role here is to ask questions and listen. I will not participate in the conversation, but want you to feel free to talk with one another. I will be asking seven questions and will move the discussion from one question to the next. There is a tendency in these discussions for some people to talk a lot and some people not to say much. But, it is important for me to hear from each of you today because you have different experiences. So if one of you is sharing a lot, I may ask you to let others talk. And if you aren't saying much, I may ask for your opinion.

We have placed name card in front of you to help me remember names. Let's begin.

**Prompts:**

Would you explain that further?

Can you give me an example of what you mean?

Would you say more?

Is there anything else?

Please describe what you mean?

I don't understand.

Tell me more about that.

How does that work?

**For the group:**

Who else has something?

What about the rest of the group?

I see people nodding their heads; tell me about it.

Who else has something that might be a bit different?

**Closing the group:**

Have we missed anything?

Is there anything we should have talked about but didn't?

Adapted from, “Moderating Focus Groups, Focus Group Kit 4” by Richard A. Krueger

## APPENDIX U: NODES COMPARED BY NUMBER OF CODING REFERENCES

Nodes	Number of coding references	Aggregate number of coding references	Number of items coded	Aggregate number of items coded
Supports for Schools in Improvement	16	16	1	1
Structure of CLTs	111	111	9	9
Rationale for implementing protocol structured discussions as a school reform strategy\Leadership\Rationale for implementing protocol structured discussions as a school reform strategy\Reasons for Recognitions at Uprising	8	8	1	1
Rationale for implementing protocol structured discussions as a school reform strategy\Leadership\Rationale for implementing protocol structured discussions as a school reform strategy	17	25	2	2
Rationale for implementing protocol structured discussions as a school reform strategy\Leadership	78	103	9	9
Rationale for implementing protocol structured discussions as a school reform strategy	17	120	2	9
Protocols Influence on Teacher Thinking	70	70	7	7
Protocols Influence on School Culture\Evidence to support influence on culture	43	43	6	6
Protocols Influence on School Culture\Culture prior to implementing protocol structured discussions	6	6	1	1
Protocols Influence on School Culture	77	126	8	8
Protocols effect on planning\Planning Process\Prior to CLTs	35	35	3	3
Protocols effect on planning\Planning Process	84	119	5	5
Protocols effect on planning	38	157	7	8
Protocols effect on DDDM\DDDM Process\Prior to CLTs	9	9	3	3
Protocols effect on DDDM\DDDM Process	54	63	5	5
Protocols effect on DDDM	59	122	7	9
Protocols Effect on Classroom Practice	75	75	6	6
Protocols changing learning\Changed learning for administrators\Change learning for students	27	27	9	9



Protocols changing learning\Changed learning for administrators	49	76	9	9
Protocols changing learning\Change learning for teachers	99	99	9	9
Protocols changing learning	45	220	7	9
Changes to Protocol Process	12	12	1	1

## **APPENDIX V: LIST OF DOCUMENT REVIEWS**

Unpacking the Standards Protocol

Framing the Standards Protocol

Unit Tests Data Analysis Sheet/What, So What, Now What Protocol

Unit 9 Measurement Vertical Alignment Sheet

Unit 9 Math Measurement

WIDA Can Do's for Unit 9

School Improvement Plan for Uprising Elementary

State School Report Card for Uprising Elementary

School Division Report Card for JCPS

School Profile for Uprising Elementary

**APPENDIX W: COMPARABLE SCHOOLS DATA PARTICIPATING IN STATE**

**SIP PROCESS FROM 2011-2016**

EUS

Grade	Subject	2011-2012*	2012-2013**	2013-2014	2014-2015	2015-2016
3	Reading	69%	59%	63%	73%	71%
4	Reading	63%	49%	64%	92%	63%
5	Reading	63%	43%	67%	64%	78%
3	Math	46%	55%	78%	89%	82%
4	Math	49%	56%	93%	98%	94%
5	Math	48%	54%	74%	92%	94%

*Note.* \* New rigorous standards in mathematics \*\*New rigorous standards of learning test in reading began.

School A

Grade	Subject	2011-2012*	2012-2013**	2013-2014	2014-2015	2015-2016
3	Reading	79%	46%	36%	48%	48%
4	Reading	75%	59%	39%	62%	62%
5	Reading	88%	65%	65%	68%	68%
3	Math	66%	79%	29%	52%	62%
4	Math	81%	65%	66%	48%	68%
5	Math	65%	63%	73%	67%	74%

*Note.* \* New rigorous standards in mathematics \*\*New rigorous standards of learning test in reading began.

### School B

Grade	Subject	2011-2012*	2012-2013**	2013-2014	2014-2015	2015-2016
3	Reading	82%	48%	48%	67%	66%
4	Reading	80%	57%	42%	65%	60%
5	Reading	63%	44%	53%	62%	69%
3	Math	63%	49%	67%	71%	70%
4	Math	46%	73%	76%	81%	55%
5	Math	43%	60%	67%	64%	64%

*Note.* \* New rigorous standards in mathematics \*\*New rigorous standards of learning test in reading began.

### School C

Grade	Subject	2011-2012*	2012-2013**	2013-2014	2014-2015	2015-2016
3	Reading	68%	65%	65%	63%	70%
4	Reading	75%	62%	64%	69%	65%
5	Reading	78%	53%	63%	67%	70%
3	Math	44%	54%	52%	43%	64%
4	Math	55%	71%	69%	72%	63%
5	Math	63%	65%	64%	52%	73%

*Note.* \* New rigorous standards in mathematics \*\*New rigorous standards of learning test in reading began.

### School D

Grade	Subject	2011-2012*	2012-2013**	2013-2014	2014-2015	2015-2016
3	Reading	61%	53%	57%	60%	67%
4	Reading	79%	51%	59%	60%	61%
5	Reading	69%	64%	57%	66%	62%
3	Math	39%	54%	50%	64%	55%
4	Math	69%	58%	77%	78%	75%
5	Math	67%	63%	63%	79%	68%

*Note.* \* New rigorous standards in mathematics \*\*New rigorous standards of learning test in reading began.

The data presented show student performance for all test takers from the schools participating in the SIP process from 2011-2016. The study covered 2012-2015; however, I presented additional data to show 1 year prior to the study and 1 year after the study.