AN INVESTIGATION OF HOW COMMUNITIES OF PRACTICE MEDIATE IMPLEMENTATION OF DATA-DRIVEN INSTRUCTION

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ABSTRACT

Policy now dictates the widespread implementation of data-driven instruction (DDI): the means of using assessments to guide decisions about practice with the goal of academic growth. Sociocultural theorists suggest that how a person learns a new skill and the context in which the learning takes place is fundamental to learning. Therefore as school leaders establish opportunities for practicing teachers to learn the skills necessary to understand and use data to inform their teaching, they must be attentive to the school culture and communities of practice. Yet, the research on DDI to date offers little insight into the micro-aspects of implementation: what happens after teachers are provided the data and how they engage and use data in relation to instruction. The purpose of this qualitative research study was to examine how communities of practice mediate the implementation of data-driven instruction in schools.

A multiple case study design was employed to investigate implementation of DDI in two New Jersey charter middle schools. Data collection included interviews of school leaders, focus groups of teachers, observation, and document review. Each school's data set was coded inductively and deductively and larger patterns developed to provide a portrait of the school and DDI. A cross-case analysis highlighted patterns in relationships between school culture, leadership, and teacher interactions around data.

Findings indicate that teacher communities of practice are integral to DDI implementation. How teachers use and talk about data is shaped by the school culture and by the way leaders structure time and resources to enable teachers to confer about data.

This study adds to the research base on DDI by describing its implementation

from the perspectives of teachers and leaders. It suggests that regardless of leadership style, a culture of staff engagement for student academic achievement is crucial. Also, communities of practice provide an opportune social context for DDI within which coaches and structured protocols are effective in guiding teachers in their work.

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CHAPTER ONE: INTRODUCTION

In the past half-century, education has embraced the concept of using data to drive decision-making, most recently, making it a cornerstone of current policy initiatives. Data-driven instruction (DDI) in general means using systems of formative assessments to guide decisions about practice with the goal of academic growth. The idea of making management decisions based on a variety of diverse data points initially found its roots outside of education in business and the manufacturing industry (Deming, 1986). According to David Tyack and Larry Cuban (1995), the use of data-driven instruction in education began nearly a half a century ago when the U.S. established a system of competency tests which students had to pass to graduate high school. Policymakers believed that the data from these assessments would be used by principals and teachers to realign lessons; thus, data driving instruction. More recently, data being used to drive instructional reform has been at the forefront of policies such as No Child Left Behind and the adoption of the Common Core State Standards (New Jersey Department of Education, 2012), along with the Partnership for Assessment of Readiness of College and Careers (PARCC). PARCC is a consortium which has developed a set of K-12 assessments in mathematics and English (PARCC, 2013b) in order to determine whether students are on track for college and career. PARCC assessments provide data during the academic year to inform instruction, interventions, and professional development (PARCC, 2013b; Thomas & Brady, 2005; Wells, 2009).

Policy makers and legislators at all levels of government are now operating on the belief that large-scale assessments will provide educators the needed data to focus their efforts (Guskey, 2007a). This policy shift is partially due to the fact that unlike high

stakes, norm-referenced assessments that are administered at the end of the school year to rank students and schools, formative assessments used as part of DDI relate directly to the instructional goals of the classroom and supply immediate, relevant results to teachers at the individual student level (Guskey, 2007b). DDI assessments are assessments **for** learning rather than assessment **of** learning (Reeves, 2004; Stiggins, 1999).

Ideally data-driven assessments reveal not only measurable progress but also areas in need of improvement (Schmoker, 2000). These formative assessments are intended to be aligned from the classroom level to state standards so that they can serve a "predictive value" of student achievement. Aware of what students need to know on end-of-year summative assessments, teachers and school leaders can plan with the end in mind. The DDI assessments they administer on a frequent, often quarterly basis, allow educators the ability to diagnose student learning needs and prescribe modifications to teaching in order to improve student outcomes on summative assessments (Ainsworth, 2007). Once data is obtained from formative assessments, school data teams analyze strengths and obstacles for individual students and cohorts, establish short-term goals for improvement, and identify experience-based and research–based instructional strategies to meet those goals (Ainsworth, 2007). Future DDI assessments are intended to gauge the effectiveness of the strategies used.

Despite the logic underpinning the use of DDI, some scholars question the impact assessment data can have on academic achievement. Larry Cuban (2011) argues that the push to use data to drive instruction can overwhelm teachers and become a distraction. Burch (2010) raises questions regarding the alignment of interim assessments to instruction as many of the assessments are developed by private providers and therefore

may not be accurate measures of instruction as they use a "one-size-fits-all" approach. Similarly, Ravitch (2010) questions if numbers obtained through data-driven instruction, given that they are only as reliable as the measures used to get them, can be trusted as a true indication of achievement. However, it is important to remember that DDI is used for the purposes of diagnosis and prescription, and not for accountability; the examination of why students gave an answer is more important than the final score on the assessment.

The data obtained by schools is only beneficial to students if it is analyzed and used effectively by teachers to guide instruction (Shen & Cooley, 2008). However, research would suggest that teachers may not have the training they need to be able to use DDI in effective ways. A survey by Stiggins (1999) found that less than half of the states require demonstration of competency in assessment and data analysis as part of their teacher preparation programs. New Jersey is one of the states with no such requirement (NJDOE, 2013a). School leaders therefore must be attentive to helping practicing teachers learn the skills necessary to understand data as it is collected, and to be able to use the data as an informant to their teaching.

Traditional professional development activities have typically provided little, if any, attention to the delivery and application of teacher learning. However, how a person learns a new skill and the context in which the learning takes place is a fundamental part of the process (Greeno, Collins, & Resnick, 1996; Lave & Wegner, 1991; Putnam & Borko, 2000). Many scholars of education are therefore arguing for collaborative professional development activities for teachers. According to McLaughlin and Talbert (1993) when a collection of teachers assemble and bring to the table an assortment of expertise, the members of the community can draw off one another and engage in rich

conversations regarding teaching and learning. Marsh et al. (2006) and Coburn (2001) concur that these teacher assemblages or communities of practice are essential when considering past instructional practices and planning instructional responses or when analyzing data. Therefore, in structuring learning opportunities for practicing teachers to analyze and use data to guide instruction, the school culture and communities in which the teachers engage in while examining data matter.

The research on teacher use of data to drive decision-making indicates mixed outcomes (Earl & Fullan, 2003; Slavin & Cheung, 2011; Wayman, Cho, Jimerson & Snodgrass Rangel, 2010). On the one hand, some studies would suggest that the use of DDI can help teachers and students focus on areas in need of remediation in order to improve academically. For example, a study by May & Robinson (2007) evaluated a benchmark assessment program used in 60 Ohio high schools to prepare students for the state Graduation Tests. In this example of DDI implementation, the Personalized Assessment Reporting System (PARS) provided interim test score reports to teachers, administrators, students, and parents along with suggestions and resources for improving student performance. This benchmark data was thus used by teachers for instructional planning. Although there were no significant differences for tenth-graders taking the Ohio Graduation Test for the first time, the subset of students who had failed the initial administration of the test were much more likely to take the test again and to score well on it. These results were associated with the implementation of the DDI program.

In contrast, another group of studies show that DDI does not have a significant impact on improving student achievement scores. For example, the Formative Assessments of Student Thinking in Reading (FAST-R) benchmark assessment was

administered every 3 to 12 weeks in 21 Boston elementary schools providing teachers data aligned with the Massachusetts Comprehensive Assessment System (MCAS) reading assessments. A two-year evaluation of the implementation of this program found small, non-significant effects for third- and fourth-graders on MCAS and SAT-9 reading measures (Quint, Sepanik, & Smith, 2008), thus suggesting that the data from the FAST-R benchmark assessments did not have a significant impact on student achievement on future assessments.

Research offers several explanations as to why these mixed results may exist; one being insufficient or poor-quality professional development for principals and teachers in data use, which renders them woefully unprepared for some aspect of implementing DDI (Anderson, Leithwood & Strauss, 2010; Jimerson & Wayman, 2011; Wayman, Cho & Johnston, 2007). As they are not adequately prepared, educators tend to make assumptions that are faulty. For example, administrators may misallocate or fail to allocate adequate resources to support DDI implementation. Similarly, teachers may not have the competencies to use the data to impact actual teaching in the classroom. Educators may also want to jump from data directly to action, and the pressures exerted by policies implementing the Common Core Standards, PARCC assessments, and public accountability make this leap even more tempting. However, as Hargreaves and Fullan (2012) observed in the Raising Achievement Transforming Learning Project in England, effective educators need time to work in learning communities to conduct professional reflection and analysis about data before acting upon it.

To date, most of the research on DDI looks at the big picture, such as the timing and structure of the assessments, data warehousing of results, and data distribution to

teachers (Ainsworth, 2007; Anderson, Leithwood & Strauss, 2010; Burch, 2010; Long, Rivas, Light & Mandinach, 2008; Mandinach & Honey, 2008; Marsh, Pane & Hamilton, 2006). Supplementing these larger studies are individual case studies of schools or districts (May & Robinson, 2007; Quint, Sepanik, & Smith, 2008) that demonstrate significant progress on state assessments after using data-driven instruction. However, as these success stories arise after-the-fact, little is known about the exact details regarding the implementation of DDI and which aspects of the implementation process contributed to these desirable results (Wayman, Cho, Jimerson & Snodgrass Rangel, 2010). The research on DDI to date offers little insight into the micro-aspects of implementation: what happens after teachers are provided the data and how they engage and use data in relation to instruction.

In short, there is not a lot of information leaders can use to ensure that their teaching staff use the time and resources to engage in examining data in ways that lead to improved instructional practices. One resource that may be of help is the experiences of those working in charter schools. Charter schools in New Jersey have been scrutinized by legislators, educators, and the public since Governor Whitman signed the Charter School Program Act of 1995 into law. One requirement of continued operation is that charter schools prepare annual reports. These comprehensive reviews document each school's success in meeting its mission and providing a quality education as measured by performance targets and growth measures. To gather evidence, many charter schools have used formative assessments, collecting data regularly, assessing the information, and using it to guide academic and nonacademic programs. This trend to use data to drive instruction makes charter schools fertile grounds for examining best practices in data

driven decision-making as New Jersey's public schools look to use PARCC and other sources of data.

This qualitative case study examined the DDI process in two of New Jersey's charter middle schools. Focusing on the lived organization as opposed to the designed, this study sought to go beyond the institution's intention of data use to look closely at the social and cultural interactions of the process - how the work is distributed across individuals, how individuals work together or independently, and how the use of data is mediated by culture. The dialogue, interactions, practices, and shared culture of the DDI community was examined in each school with the aim of answering these questions:

1. How do communities of practice mediate the implementation of data-driven instruction in schools?
    a. What is the structure of the communities of practice in each school?
    b. How might the interactions between members of the communities of practice (in reference to data-driven instruction) be described?
    c. How do these interactions affect the use of data to change instruction?
2. How does school culture and leadership style mediate the implementation of DDI?

In what follows, I outline the theory and research literature that helps to frame this study (Chapter 2) and the methodology I used to explore these questions in two middle charter schools (Chapter 3). In Chapter 4, I present a description of each school's

approach to data-driven instruction. Chapter 5 concludes with a discussion of the findings and their implications for practice.

CHAPTER TWO: LITERATURE REVIEW

As this study examines DDI as it is enacted in two charter schools and their communities, several bodies of literature are reviewed. First, I present research on theories of policy implementation focusing on the co-construction theory. I also define sociocultural theory and how Lev Vygotsky's zone of proximal development (ZPD) and ideas regarding the role of speech are integral in facilitating learning in a social context. Then I present research regarding the structure and situated nature of communities of practice, critical to understanding how communities of practice may mediate DDI. Next is a presentation of what constitutes good data practices. Although the research base regarding data-driven instruction is fragmented in terms of associating the process with academic growth, existing case studies indicate quality practices which mediate DDI's impact on teaching. These quality practices fall into the categories of leadership, school culture, communication, professional development, and allocation of resources, which are discussed in this chapter. Lastly, I present the theoretical framework that explains the relationships between these constructs in relation to the means through which they inform this study of how communities of practice mediate teachers' use of data in two charter schools.

Policy Implementation

In the foreword of the *Handbook of Education Policy Research*, Sykes, Schneider and Plank (2009) point out that education is more than what happens in the classroom. Increasingly it is "about rules and regulations promulgated in state capitals and the federal government designed to improve student academic performance and social development as well as the management and operation of the schools they attend" (p.1).

These policies have become a driving force for what happens in the field of education. In other words, policy implementation is the series of efforts by state and local agencies, school administrators, and teachers to translate newly-adopted education policies into tangible next steps.

With the implementation of PARCC, policy makers suggest that data collection and use must extend to a larger number of schools; and the form and timing of the assessment is dictated as well. Whether or not the use of data will result in deep and lasting change in teachers' beliefs and practices is one unresolved issue of PARCC implementation. Unfortunately, the track record of reforms which fail to influence instruction or impact student achievement is well documented (Elmore, 1996; Tyack & Cuban, 1995).

Effective implementation requires more than just having a large number of schools take up new initiatives. Successful reforms must result in the desired outcome and should not be short-lived (Tyack & Cuban, 1995). Coburn (2003) states that successful policy implementation requires consideration of the measurable impact of the reform such as "consequential change in the classroom, endurance over time, and a shift that knowledge and authority for the reform is transferred from the external organization to teachers, schools, and districts" (p.4).

Theory regarding policy implementation

Often the implementations of policies, such as data-driven instruction, are not as successful as envisioned by the designers. Several theories have been put forth to explain the process of policy implementation with the aim of understanding why educational policies are not always implemented as designed. First is the classical management

theory, which describes the planning, organization, command, coordination, and control needed for implementation (Datnow, 2006). In this theory there is a unidirectional flow from the top-down and policy designers require program fidelity from those responsible for implementation. With no opportunity for stakeholders to be active participants in the policy design or decision-making process, issues of resistance crop up and losses of fidelity abound (Evans, 1996; Supovitz, 2006).

The second theory is the mutual adaptation perspective developed by Berman and McLaughlin (1977) in the Rand Change Agent Study. This study examined 293 projects implemented in 18 states and found that lasting change was not dependent on the content of a policy but rather on how the policy was interpreted and taken up in different contexts by local actors. The policy served as the macro-level input but implementation was mediated by micro-level behaviors at the school such as the commitment of school leaders. In this theory, the likelihood of successful policy implementation is improved when there are opportunities for negotiation and flexibility in policy design and application at the school level (Snyder, Bolin, & Zumwalt, 1992).

Building on the concept of mutual adaptation is the third theory, co-construction. Central to this theory is the idea that there is a relational sense of context: "People's actions cannot be understood apart from the setting in which the actions are situated, and reciprocally, the setting cannot be understood without understanding the actions of the people within it" (Datnow, 2006, p. 107). According to a co-construction perspective, the success of policy implementation is dependent upon the interconnections between the actors in the social system (Hall & McGinty, 1997; McLaughlin & Talbert, 1993). These

interactions create maximum flexibility for negotiation, interpretation, and relation of the reform to the school (Datnow, 2006; Datnow, Hubbard & Mehan, 2002).

The theory of co-construction provides a conceptual basis for this research. As state and federal policy require the use of data collection systems such as PARCC, the application of these reforms in the school context will be affected by the relationships between the individuals responsible for their implementation. Introducing the importance of social interactions between actors in the social system suggests that we must more closely examine the concept of communities of practice as grounded in sociocultural theory.

Vygotsky and Sociocultural Theory

Cognitive psychologists examine the mental processes through which knowledge is acquired; they look at how individuals treat information that comes in to the person and how this treatment leads to responses. In other words, they are interested in the variables that mediate between stimulus/input and response/output (Schacter, Gilbert & Wegner, 2011). The work of Lev Vygotsky (1896-1934) has been a focus of cognitive development theory in the last half-century. His theories stress the role that social interaction has in cognition and thus became the foundation for sociocultural theory.

Vygotsky argued, "Learning is a necessary and universal aspect of the process of developing culturally organized, specifically human psychological function" (1987, p. 90). Unlike Piaget, who described learning as occurring in stages once a child had reached a developmental milestone, Vygotsky saw learning occurring when an individual was faced with a task just outside of his or her present state of development (McLeod, 2007). In other words, to Vygotsky social learning leads to development. When faced

with a situation that creates disequilibrium or uncertainty a learner develops cognitively through social interactions.

Zone of proximal development. To explain the process whereby social learning becomes internalized or developed within the individual, Vygotsky (1987) created the construct of "the zone of proximal development" (ZPD), which refers to "the distance between the actual development level as determined by independent problem solving and the level of potential development … in collaboration with more capable peers" (p. 86). In other words, the ZPD is the area of potential growth between the current level of achievement and what can be accomplished through social interaction with a "more knowledgeable other" (MKO) (McLeod, 2007). Initially, the student operates independently in the center where he or she can solve problems without assistance. Moving out from the center the learner enters into the ZPD where he or she can learn the skills he or she will later use independently. Individuals accomplish this learning through communication and social interaction with an expert. Vygotsky (1987) promoted the notion that "experts" can be anyone. In fact, the MKO or expert does not even have to be an adult but someone who has more knowledge or expertise in an area than another individual. After all, if one were interested in how to beat the newest video game, the best MKO would likely be a child who had experience in playing the game. For teachers, a MKO could be an administrator or a peer working side by side with them in the school who has knowledge or expertise in the subject at hand.

Role of speech. For Vygotsky, the way learning with another becomes internalized is through speech. He emphasizes that with encouragement and proper instruction, centered on the opportunity for dialogue and discussion, a learner moved

through the ZPD. According to Vygotsky (1962), language plays two critical roles in cognitive development. It is the main means by which adults transmit information to children and language itself is a powerful tool of intellectual adaptation. Vygotsky believed that language develops from social interactions for communication purposes. Later language ability becomes internalized as thought and "inner speech." Therefore thought is the result of language. Social speech becomes internal speech over a period of time through a process of talking out loud with others, then to oneself as private speech until finally the learning is internalized as inner speech. Private speech, also called outer speech, refers to occasions when people talk aloud to themselves. This is particularly prevalent amongst children. Vygotsky saw "private speech" as a means for children to plan activities and strategies and therefore aid their development. Opportunities for language and verbal exchange in social groups therefore promote learning and the development of thought.

Sociocultural theory has been crucial to changing the way educators view teacher-student interactions. For example, the movement towards collaborative learning or scaffolding (where a more accomplished teacher or student structures a task to assist the learner) are classroom applications of Vygotsky's work. At the same time, Vygotsky's theory has been applied to models of professional development and teacher learning. Rather than adults learning in isolation, his view of development argues for teacher learning through collaboration among peers and the opportunity to talk over time about educational issues. As applied to this study of data-driven instruction, "The enactment of collaborative data practices recognizes the importance of both social context and

interaction as critical contributors to teacher learning. Therefore, interpersonal relationships and interactions become central facets" (Cosner, 2009).

Communities of Practice

Rooted in sociocultural theory, there is a growing body of literature examining the social aspects of teacher learning. Most notably is the community of practice perspective where learning takes place not within one's own mind but rather within the social interactions of people (Lave & Wenger, 1991). Participation in a community of practice "refers not just to local events of engagement in certain activities with certain people, but to a more encompassing process of being active participants in the *practices* of social communities and constructing *identities* in relation to these communities" (Wenger, 2000, p 4). Learning is situated within the context of the social and cultural activities of the individuals' communities. In schools, each individual is a member of various professional communities, such as those based on grade level, academic discipline, or some less formal identifier. As active participants they share a vernacular and develop an identity that moves towards a shared vision.

Several studies have found that the professional communities in which a teacher formally or informally belongs are crucial to how policy is enacted (Little, 2003; McLaughlin & Talbert, 2001). As members of the community, individuals share information, practices, resources, experiences, and common perspectives, all of which provide opportunities to learn from one another and develop individually. Communities of practice are not intrinsically beneficial or harmful to reform but rather need recognition as existing - the place where organizational and individual learning takes place. The social interactions and strength of relationships within the community

determine the degree to which the members will change practice and implement policy (Coburn & Stein, 2006).

Communities of practice are complex in structure, yet there is no identifiable center or periphery. Instead of describing membership in these communities as complete participation, which implies an individual is classified as "in" or "out"; or central participation, which refers to a central location relative to a member's participation, Lave and Wenger (1991) describe how peripheral participation leads to full participation. In other words, a member of the community gains understanding of the practice of the community through growing participation. Learning does not require direct instruction from a source but rather takes place through the interactions of the members of the community with one another wherein more experienced members pass on their knowledge. Members move towards full participation at their own pace as they gain knowledge of the customs and procedures of the community.

There is little evidence to say that an individual will actively engage in a community of practice just because the opportunity is presented. "There is likely a fairly strong interdependence and reciprocity between how leadership practices invite individuals to participate and how individuals decide to engage in these practices" (Prestine & Nelson, 2005, p. 52). Yet there is a distinction between engaging teachers in a community of practice and requiring it.

Lea and Nicoll (2002) noted that Lave herself has expressed concern that it has become accepted as "good pedagogy' to incorporate top-down implementation of a broader concept of communities of practice. She corrects that this was not the original intent in that learners should not have a model forced on them but rather they should

participate in a community that has structure. "Standardization of curricula and examinations, evaluation through grading, the deskilling of teachers… all serve to reduce the meaning and even the possibility of engaging as a peripheral participant" (Lave, 1991).

Strong vs. Weak Communities

Gallucci (2008) suggests that the strength of the community influences how the members will implement policy. Strong communities whose views are not congruent with policy are more likely to depart from policy implementation as compared to weaker communities within the same system. So the effect of a strong community upon policy adherence may not always be desirable.

Examining strong and weak communities of practice, McLaughlin and Talbert (2001) conducted a research study in 1998 in which they engaged in lengthy observations in sixteen California and Michigan high schools with the aim of gaining an understanding of how the contexts of secondary schools affect teachers' work lives and professional practice. Their analysis of 121 Oak Valley High School teacher surveys measured substantial differences in the strength of community within the different academic departments. The English department had the strongest community of practice in which teachers reported sharing "methods, materials, lesson plans, successes, and struggles" (McLaughlin & Talbert, 2001, p. 51). However, in contrast, members of the social studies department operated as individuals, each practicing in isolation from each other to develop lessons, find resources, and implement reform. Interestingly, all students took classes in each of these departments and so as a result, the student context and the

challenges they brought were similar for members of each department. However, the cultures of the departmental communities of practice were polar opposites.

From a schoolwide perspective, McLaughlin and Talbert (2001) found that strong school missions forge communities of practice in which teachers had a sense of moral purpose and strong connections towards innovative practices, which supported student growth. The communities of practice in schools that lacked a shared mission were weaker by comparison and tended to engage in undesirable practices such as watering down material and applying stereotypical notions regarding students and their aptitude (McLaughlin & Talbert, 2001). Thus, the existence of a community of practice alone is not enough to ensure policy implementation and improvement of teacher practice. The strength of the community grounded in school culture impacts the work of the community of practice. However, despite the research supporting the benefits of social networks and teacher communities, the existing norm of teaching and schooling remains one in which individual teachers practice in isolation (DuFour, Eaker, & DuFour, 2005)

Data-driven Instruction and Its Implementation

The era of accountability and related federal mandates, begun by the No Child Left Behind Act of 2001, is continued with the adoption of PARCC. These mandates, which hold all school districts accountable for the academic performance of their students, ushered the data movement into education. In 2005, then U.S. Secretary of Education Margaret Spellings said, "Data is our best management tool. I often say what gets measured, gets done. Once we know the contours of the problems, and who is affected, we can put forward a solution. Teachers can adjust lesson plans" (Mandinach & Honey, 2008, p. 1). However, Michael Fullan (1993) has expressed caution about such

mandates saying, "You can't mandate what matters" (p.21). Though as a result of these mandates, schools today face more pressure to engage in data-driven decision-making and may in fact be using data in a more frequent and widespread manner, case studies of schools attempting to use data-driven instruction reveal that implementation has varying results. First is a closer look at the data being collected for the purposes of DDI followed by research-based factors that mediate DDI implementation.

Data Collection and Reporting

Data for DDI can come in a variety of forms: exit tickets, curriculum-based assessments, classroom projects, attendance, norm-referenced tests, and state assessments, to name a few. When describing the use of data to make decisions, teachers often refer to multiple sources to get a robust understanding of students' learning needs rather than a single data point (Long, Rivas, Light & Mandinach, 2008). By focusing on specific questions about student achievement, teachers can prioritize what types of data they need to collect and analyze to inform their instructional decisions (Supovitz, 2006).

In addition to the issue of what types of data are collected, teachers must recognize that there is also timeliness to the data. One disadvantage of state assessments to date has been that by time the data is in the educators' hands significant time has often elapsed so that the data may no longer present an accurate snapshot of student achievement (Hamilton, 2003). Interim assessments, which are administered routinely throughout the year and across content or grade level, provide data for teachers to measure the effectiveness of their instructional strategies and track progress of their current students (Supovitz & Klein, 2003; Wayman & Stringfield, 2006)

However, how the data is organized once collected and presented to the teachers is important. Wayman (2005) points out that for years schools have been "data rich" but "information poor" because the vast amount of collected data was stored in ways that were inaccessible to the practitioner. It is important to note that accurate data must be easily accessible for teacher use; otherwise, data use can be viewed as a barrier to improve practice rather than an impetus (Wayman, 2005; Wayman & Stringfield, 2006; Wayman, et al., 2007). Rather than serving as stimulus for inquiry, reflection, and instructional planning, the research suggests that cumbersome access to data frustrates teachers. Data use is then viewed as a burden rather than a stimulus for improved practice (Copland, 2003, Wayman, et al., 2007).

Known Factors That Mediate Implementation of DDI

The empirical research base on DDI spans multiple case studies in which, most often, the implementation of data-driven instruction was examined in schools or districts already considered exemplary. Each of these locations varied in how DDI was implemented yet there were some common features that can be culled to describe effective data practices. The strategies can be grouped into the following categories: leadership, culture, communication, and professional development.

Leadership. Drawing from empirical, conceptual and normative sources, Kenneth Leithwood and Carolyn Riehl (2005) define school leadership as "the work of mobilizing and influencing others to articulate and achieve the school's shared intentions and goals" (p.14). Through their social relationships with teachers, students and the community, leaders play a crucial role in enacting reform. School leaders establish the vision and create the organizational structure that enables change (Young, 2006).

Multiple studies suggest the importance of leadership in developing a data culture when use of data is a shared school goal and when the intention is to impact learning through teaching (Daly, 2012; Wayman, 2005; Wayman & Stringfield, 2006). These "data leaders" set clear expectations, provide time for collaboration, support professional development, and align resources to ensure the coherent use of data across a system (Wayman, Cho, & Johnston, 2007;Young, 2006). Daly (2012) describes that leaders may adopt a central role to data practice and after time may slowly move out of that role thus providing opportunities for distributed leadership of data practices. Yet, scant empirical evidence exists that would contribute towards "understanding ways in which school leadership contributes to the ongoing development of more robust forms of collaborative data practices following the introduction of these practices in schools" (Cosner, 2012, p.27).

What research is available is mostly case studies and these suggest that when leaders provide opportunities for collaboration around data, teachers' instructional use of data can result in improved teaching and learning. For example, when leaders provide for collaborative inquiry - wherein teachers share expertise, address student learning problems, and test solutions through the frequent use of data and constructive dialogue - they open access to improving instruction and student learning (Love et al, 2008, Spillane, 2006). Similarly, McDougall, Saunders and Goldenberg (2007) in a study of 9 schools over 6 years found that collaboration around data, resulted in positive changes in teacher attitudes, expectations, and lesson planning. The research to date therefore suggests that moving towards a high-performing data culture requires the allocation of time and opportunity for ongoing data dialogue and collaboration (Cosner, 2012).

Leadership, in implementing DDI, must extend beyond establishing a vision for data use and address collecting and presenting data to teachers as well as the structure of the collaboration (Copland, 2003; Young, 2006). Leaders should structure work groups who have the opportunity to collaborate around the data (Cosner, 2012; Means, Padilla & Gallagher, 2010; Young 2008). The agenda for data use, set by leaders, should vary depending on the developmental stage of the school in this practice. Schools that are new to DDI benefit from additional structure. For example, Young (2006) conducted four embedded case studies and found that improving teacher knowledge of data systems and facilitating teacher interpretation of data, built an organizational capacity that supported DDI. "School leaders aspiring to establish effective and systematic data use need to embed teaching and learning and their improvement in the heart of data-related activities (Young, 2006, p. 544).

Distributed leadership. Administrators often struggle to balance the instructional and managerial tasks which fall under their job responsibilities (Fullan, 2001). As administrators' responsibilities pull them in various directions and resources diminish, educators have looked to distributed leadership for relief. This does not mean that tasks are divided among individuals with separate job descriptions but rather that tasks are accomplished through "dynamic interactions between multiple leaders and followers (Timperly, 2005, p. 2). Spillane and others (2004) refers to distributed leadership as tasks "stretched" over individuals and Copland (2003) speaks of different people responsible for different tasks not as a result of their formal authority or position in the chain of command but rather because of the nature of the task itself. There is agreement that distributed leadership "highlights administrators and teachers as arrayed in complex

collegial networks that form and re-form around specific tasks or issues" (Prestine and Nelson, 2005, p. 51).

Mayrowetz (2008) in *Making Sense of Distributed Leadership,* describes four common approaches to distributed leadership in schools. First is the original theoretical framework which assumes that activity is distributed and the tools used are helpful in understanding the practice of leadership in schools. Second, there is distributed leadership for democracy, where the activities of leadership practice are shared "between a number of people in an organization or team" (Storey, 2004, p. 252). This view serves as a fix to the oft-seen top-down management structure of schools. In a case study of Boston public schools that were designated School on the Move (SOM) award winners, d'Entremont et al. (2012) found that all of the schools used both distributed leadership practices and data-driven instruction. Decisions in the schools regarding curriculum and instruction were made collectively by teachers and administrators. The distribution of traditional leader roles fostered a shared sense of responsibility and accountability amongst the staff for implementation of schoolwide strategies, including data-driven instruction.

Another usage is to distribute tasks to tap into an individual's particular expertise (Elmore, 2003). "Since specific individuals like coaches or lead teachers may have considerable expertise regarding content instruction, for example, it is likely to be effective to distribute or redistribute leadership practice to take advantage of that knowledge" (Mayrowetz, 2012, p.429). An advantage of approaching distributed leadership as a practice for efficiency and effectiveness is that it explicitly taps into multiple sources of expertise, including teachers. Teachers are situated where DDI occurs

and therefore have a unique perspective and connectedness to the work in the classroom, thus at the grassroots level for effectuating change (Heller and Firestone, 1995). As teachers develop expertise in data use and assume leadership roles with their peers in the collaborative process, their sense of efficacy increases. Distributed leadership empowers teachers as they realize their actions affect and influence change (Goodnow & Wayman, 2009). Principals who share leadership tasks were more successful in implementing DDI (Copland, 2003; Datnow & Park, 2009).

Lastly, is the usage of distributed leadership as a means to improve individual human capacity, which in turn, increases the collective capacity of the school so that the school can address its shortcomings. As Mayrowetz (2008) states, "the prospects of creating widespread distributed leadership of this variety still appear to be slim, even though …[this] may be best positioned to lead to school improvement" (p. 431). This prescriptive definition is exactly what is embodied in communities of practice doing the work of DDI. Human capacity is built as teachers step up and provide guidance to peers; sharing their expertise.

However, others are concerned that as teachers assume leadership tasks their attention is diverted from their primary responsibility: instructional matters (Smylie, 1997). Also, distributed leadership is not conducive to better teacher practice if the teachers' and organizational goals are not well aligned (Mayrowetz, 2008; Smylie, 1997). In response to those concerns, teacher leadership roles have undergone a transformation. Moving away from career-enhancing teacher leadership positions of the 1980s and 1990s, new teacher leadership roles focus on opportunities to enhance collaborative, instruction-

focused practices with the end goal of improving teaching and learning (Smylie, 1997; Smylie, Conley & Marks, 2002).

School culture. Changes in learning will not take place without changes in instruction, and teachers will not change their practice unless they believe the change will make a difference. So attempts to use DDI to change instruction will fall flat without attention to the culture of the school (Abbott, 2008). Schein's (1997) widely-accepted definition of "culture" is:

> A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration that has worked well enough to be considered valid and therefore to be taught to new members as the correct way to perceive, think, and feel in relations to those problems. (p.12)

Bower (1966) describes it simply as "the way things we do things around here" (p. 3). Representations of culture are varied. Culture is depicted in architecture, artifacts, symbols, rituals, and ceremonies (Deal & Peterson, 1999). In one portrayal, culture is the manifestation of beliefs, in another it is the concept influencing behavior. Schien (1997) observes, "Culture, as a set of basic assumptions, defines for us what to pay attention to, what things mean, how to react emotionally to what is going on, and what actions to take in various situations" (p.22). Culture influences how members of a community react to new stimuli and how they participate in a group.

Deal and Peterson (1999) assert that "strong positive collaborative cultures have powerful effects on many features of schools." Culture improves collegial activities that foster communication and problem-solving, nurturing school improvement efforts (Little, 1990; Louis & Miles, 1990). Shared norms and values amplify the impact of the data culture. In order to respond to collected data, the school must have a collaborative culture

where all educators take responsibility and are committed to using data to improve teaching and learning for all students (Love et al, 2008).

Noyce, Perda and Traver (2000) describe the culture of the Sound Public Schools in terms of their implementation of DDI. Teachers identified a trend when analyzing student data on the Massachusetts Comprehensive Assessment System assessment. They found that 35 to 45 percent of students did not answer open-ended questions compared to only 1 percent who failed to answer multiple-choice questions. In response, the district implemented performance assessments in reading and writing to students in each grade level. After grading the assessments and reviewing the data, teachers provided individual remediation to students with the weakest skills thus addressing a district goal of improving literacy. This case demonstrates that in a data culture, there is a willingness to use numerical information to reveal patterns and answer questions of how policies and procedures need to change in order to attain desired outcomes. In this study, the data culture was exhibited both in the "micro" of teachers providing remediation and in the "macro" of school policy implementation.

In a case study of the "structures and strategies that best serve students in prize-winning (Boston) schools," d'Entremont el at. (2012) found that all of the award-winning schools were led by strong leaders who nurtured data cultures. Each school had "integrated data systems to inform daily decisions about curriculum, instruction and student supports" (p.3). Holistic conversations about instruction as related to student learning created a school culture where all teachers shared responsibility for the improvement of students' learning.

Although Acker-Hocevar and her collegues (2012) warn that there is no guaranteed "cookie cutter" approach to school improvement and that because most research is conducted on schools already labeled "successes" there are limitations on the findings, there is still something to be learned from looking across case study schools and districts to find broad themes of what effective schooling structures and process looks like. Firestone and Louis (1999) see the pliability of school culture in the hands of administrative leadership and note: "Culture is attractive because it offers administrators ways to bring meaning and effectiveness to schools" (p. 297). Unlike the many mandates imposed on schools and administration, culture is a characteristic of the school which leadership can mold.

Communication. Once data is collected it must be dissected and analyzed before it can be used, and all involved in the process must have clear expectations of the data use (Wayman, et al., 2010). Quality communication about expectations fosters a common understanding throughout the staff of how data can benefit the students and school. Wayman and Stringfield (2006) discuss the benefits of leaders guiding discussions around data, ensuring that the right questions of the data are asked. This can be accomplished through the provision of explicit directions to guide teacher discussions and protocols that keep teachers focused on actionable aspects of the data.

Cosner (2011) reported on a three-year qualitative, multi-case study that examined three urban elementary schools as each school instituted grade-level data-based collaboration as a school-wide literacy reform strategy. She argued that the

> principal reform communication appeared to shape the design and introduction of tools and processes to support collaborative data practices, and in turn, the ways in which knowledge of student learning and instructional considerations developed from these practices over time (p. 574)

Principals in all three schools viewed their role as reform communicator as critical in communicating to the faculty the data-based reform goals and purposes, expectations, and reform work. Although all three schools began the DDI process without specific protocols to guide their work, Cosner found that over time the communication from the leaders, in advance of the data collaboration meetings, became more specific in terms of future instructional considerations. Also teachers and instructional coaches, over the years of the study, began to institutionalize analysis procedures and guiding questions, thus developing protocols for both data analysis and future instructional planning. Cosner (2011) adds that such protocols help focus the orientation of the routines of the community so that time is used in ways that are supportive of data-based collaboration. Copland (2003) suggests that to optimize communication around data the leader, in addition to using protocols, should remain an active participant in the data analysis process.

Professional Development. Data in and of itself has no meaning. Meaning is imposed through interpretation (Love et al, 2008); however, "most people who currently work in public schools weren't hired to do this work, nor have they been adequately prepared to do it either by their professional education or by their prior experience in schools (Elmore, 2002, p. 5). Professional development and training is essential for teachers charged with the task of interpreting the data as well as the school leaders. Without adequate preparation, teachers can "incorrectly diagnose student-learning problems and resort to drilling students on test items or tutoring 'bubble' students – those who just missed a proficiency-level cut point – just to pass the test" (Love et al, 2008).

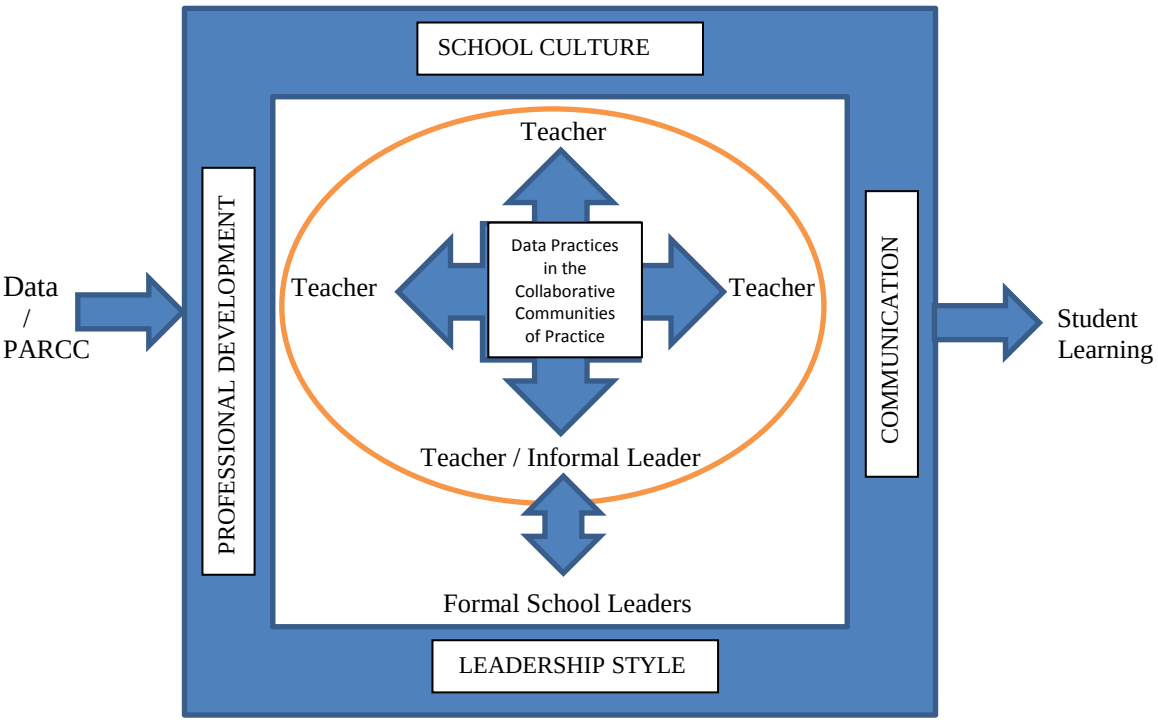
Research indicates that with adequate training, teachers recognize the importance of the information brought by assessments and the inquiry which follows (Wayman, 2005). Leithwood and Riehl (2005) detail that by motivating workers leaders establish direction in carrying out reform. They stimulate people through organized professional development which challenges perceptions and questions established practices. Also a leader's attention directed to individual personnel "increases levels of enthusiasm and optimism, reduces frustration, transmits a sense of mission, and indirectly increases performance" (McColl-Kennedy & Anderson, 2002, p. 21).

Theoretical Framework

This study is framed by the literature of policy implementation, specifically, the implementation of DDI in two focal schools and is summarized in Figure 1.

Figure 1

Theory of Action: Data-driven Instruction



Sociocultural theories of adult learning suggest that communities of practice can improve policy implementation and encourage dialogue and reflection regarding teaching and learning. It is assumed that DDI as a formative assessment tool, when utilized within the context of professional communities, can reform professional practice. Data as an input, whether from a school assessment such as DDI or from a state assessment such as PARCC, can become the focus of engagement for the teacher community of practice. However, teachers' use of data to inform instruction in and through communities of practice is mediated by leadership style, school culture, communication between stakeholders and professional development. Specifically to school culture, Firestone (2009) explains that in a culture focused on instructional improvement, the teachers often work alongside the administrators to make decisions and solve problems. School culture supportive of DDI is facilitated by leaders who ensure that data is provided in a useable form for teachers. These leaders also provide adequate professional development and time for data analysis.

Marsh (2012) recommends future studies where a sociocultural learning theory lens is applied to the examination of collaboration to support data use. Simply put, as the research base is limited in quality and quantity, there is no specific roadmap for leaders in promoting teachers' use of data (Marsh, 2012). Identifying the details of how communities of practice mediate the work of data-driven instruction can guide schools who seek to shift from a more individualistic approach to classroom instruction, to a collaborative model. To examine this theoretical framework, this case study investigated how implementation of DDI is dependent upon the social interactions and culture of the members of the community of practice responsible for implementation. The focus on

culture stems from the fact that culture serves as a pre-requisite for other mediating factors. The study examined the “micro” aspects of the context such as how these communities of practice share information and strategies, assist one another in planning, and negotiate actions situated within the school context. The design and methodology of this case study are discussed in the next chapter.

CHAPTER THREE: METHODOLOGY

Research Design

The purpose of this study was to gain a deeper understanding of how communities of practice mediate the use of data in instruction in two charter middle schools. A qualitative case study design was selected to investigate the research question guiding this study: How do communities of practice mediate the implementation of data-driven instruction in schools? Case studies are the "preferred method when (a) "how" or "why" questions are being posed, (b) the investigator has little control over events, and (c) the focus is a contemporary phenomenon within a real-life context" (Yin, 2009, p.2). All three of these descriptives apply to this study. The qualitative case study approach facilitated my examination of the problem of practice by gaining an in-depth understanding of the process and the meaning of DDI for those involved. "The interest is in process rather than outcomes, in context rather than a specific variable, in discovery rather than confirmation. Such insights into educational practice can have a direct influence on policy and practice" (Merriam, 1988, p.xii).

Researchers agree on four essential characteristics of a qualitative case study: case studies are particularistic, descriptive, heuristic, and inductive (Stake, 1994; Merriman, 1988). This study addressed each characteristic as follows: it focused on a particular program (DDI and in particular schoolwide interim assessments), resulted in descriptions of the in situ interactions of the communities of practice in each charter school, led to an understanding of the relationships between the communities and DDI implementation, and relied on inductive reasoning to develop theories grounded in the data and context itself.

Data collection took place in multiple settings, providing the opportunity to investigate the issue of DDI implementation from different perspectives. As such, the research followed a multiple or collective case study design. Collecting compelling evidence from multiple sites adds richness to the study (Herriott & Firestone, 1983) and limiting the investigation to only two charter schools contributed to more rigorous findings opting for depth over breadth. The intent was to examine the "lived" aspects of DDI implementation in each site.

Research Sites

As of September 2012, there were 86 charter schools in New Jersey, the overwhelming majority of which serve students in the elementary and middle school grades. According to the New Jersey Charter Schools Association (NJCSA, 2012), 21 of these schools self-identify as using DDI to regularly assess student learning and further employ the data to make decisions regarding instruction. As past president of the NJCSA, I have a familiarity with most of the established charter schools in the state. My role as advocate and spokesperson for charter schools has enabled me to develop solid, trusting relationships with several school leaders and provided insight into which schools would best suit my research needs.

This study consisted of two comparable, individual case studies conducted at distinct charter middle schools. The schools were purposefully selected based on their similarities and differences (Creswell, 1998; Miles & Huberman, 1994; Patton, 2008). As for similarities, each school serves middle school students, is well established, and recently completed a charter renewal by the DOE, extending their charter for an additional five years. The Red Bank Charter School (RBCS) opened in 1998 in Red

Bank, New Jersey. TEAM Academy Charter School opened in 2002, followed by their second middle school RISE Academy which opened in 2006. Both TEAM and RISE are part of the KIPP Schools national network and operate under the same parent charter in Newark, New Jersey. Although the two charters opened over a span of eight years, this has no impact on data collection for this investigation as all of the school communities are established and fulfilling the mission of their charters as documented by recent NJ Department of Education renewals. Each site has implemented DDI for at least six years and therefore has had the opportunity to work out organizational issues related to DDI implementation such as test design, professional development of staff, and allocation of time for test administration and grading. Importantly, teachers and leaders at each site identify that the school culture is one of engagement in conversations regarding teaching and learning. In other words, these schools have a culture of using DDI.

Despite these similarities, the schools are notably different. A sharp contrast is found in the management of the schools. RBCS is a "locally grown" charter founded by a cadre of parents and community members who sought options for the children of their community. RBCS expanded and is now a K-8 public charter school serving 174 students. As per the school's Website, classes are small with no more than 20 students in each grade. There is one class of each grade level and each class is team-taught by a teacher and adjunct (The Red Bank Charter School, 2012). In 2011, RBCS was one of eighteen charter schools across the country honored by the New Leaders for New Schools' Effective Practice Incentive Community (EPIC) for accomplishing breakthrough student achievement gains.

On the other hand, TEAM was founded by KIPP (Knowledge is Power Program), a national charter school management organization. KIPP oversees 141 schools in 20 states and the District of Columbia serving more than 50,000 students in total (KIPP, 2014). TEAM was the first KIPP school in the Newark, New Jersey network (TEAM, 2012, p.1). In total, the network has expanded to seven schools (grades K-12) with a total student population of 1,695 under the same KIPP banner and motto "Work Hard, Be Nice." Additional growth is planned.

Table 1 provides basic demographic information of each charter school.

Table 1
Demographics of TEAM Academy and The Red Bank Charter School

	TEAM Academy	**The Red Bank Charter School**
Grades Served	5 – 8	PK-8
Enrollment	394	195
Student:Teacher	15.2	9.1
% NSLP	86	37
% IEP	12.4	2.1
% LEP	0	10.3
% Black	93	18
% Hispanic	5	30
% White	0	48
% Other	2	4

Data extracted from the 2012 National Center for Education Statistics NCES, the TEAM Academy 2013 Annual Report and the Red Bank Charter School 2013 Annual Report

As can be seen in Table 1, the six schools of the TEAM charter network educated 2,240 students in grades K-12 during the 2012 – 2013 school year. A total of 394 were students at TEAM Academy middle school serving grades 5 – 8. TEAM reports a total free and reduced population across the network of 86.6% (TEAM Annual Report, 2013), 2.6% lower than the Newark public school district. As for the percentage of students with special needs, Newark serves a slightly higher percentage when compared to the TEAM network – 16.8% in Newark as compared to 12.4% at TEAM (TEAM Annual Report,

2013). The majority (93%) of TEAM students are African-American and there are no English language learners.

In contrast, Red Bank Charter has less than half the student population of TEAM with 162 students. The charter school has four times the number of white students as the Red Bank Middle School (NJ School Performance Reports, 2013b). While the majority of TEAM students are African-American, at Red Bank Charter a student is likely to be either Hispanic or White. TEAM is more economically disadvantaged as only 37% of Red Bank Charter students qualify for free or reduced lunch. TEAM serves a higher percentage of special needs students compared to Red Bank, yet Red Bank has a larger percentage of English language learners.

Research Participants

The same categories of individuals at each site were invited to participate in the study. Charter schools often have a lean administrative structure where one individual has various job responsibilities and therefore the number of staff in formal leadership positions may be as few as one. The lead person or individual responsible for oversight of DDI implementation (i.e. Supervisor, DDI Coordinator, etc.) at each school was interviewed as she possesses a unique perspective of teacher interactions. If the organizational chart included other staff in formal roles whose responsibilities included oversight of DDI implementation or instruction, those individuals were invited to participate in the study as well. Therefore at Red Bank Charter School, the principal and director of curriculum were interviewed. At TEAM, I interviewed two leaders, the principal, and the Dean of Students. The math chairperson was a participant in one of the

data day sessions but was not interviewed separately. They are further described in Table 2.

I asked the principals of each school for permission to concentrate on the math and English Language Arts (ELA) teachers in grades 6 – 8 for data day observations and focus group interviews. These two disciplines were the focus of the study as they are the subjects involved in state assessments and are scheduled to receive data from PARCC, beginning in 2015, as a form of DDI. If other teachers were naturally part of their community of practice on a data day, they were included as well. Therefore at Red Bank the two elementary school teachers (1st and 2nd grade) and a world language teacher who were assigned to participate in the ELA community of practice also participated in the study. The target size for each teacher focus group was 4 – 5 participants representing various perspectives and expertise in using data to inform classroom practice in grades 6-8 (Creswell, 1998). As the individuals actually responsible for using data in classroom instruction, these teachers provided a different perspective from the school leaders and constituted a potentially separate community of practice. The ELA teachers at TEAM participated in the focus group while the math teachers of Red Bank Charter participated in the focus group. The school leaders recommended which department they thought should participate in the focus group based on diversity of experience amongst the teachers and willingness of the teachers to participate further in the study.

As can be seen in Tables 2 & 3, the final sample for the study consisted of 21 educators, 10 at TEAM Academy and 11 at Red Bank Charter School. The 10 educators at TEAM included two leaders, the principal and the Director of Instruction, a department

chairperson, and 7 teachers. The 4 ELA teachers and the 3 math teachers all worked with students in grade 6 – 8. They ranged in experience from 1 to 9 years.

Table 2

Study Participants- TEAM Academy

TEAM ACADEMY						
				Research Participation		
	Position	Sex	Years of Experience at TEAM	Interview	Data Day	Focus Group
Jon	Principal	M	1	Yes	Yes	No
Annie	Dean of Instruction	F	12	Yes	Yes	No
Maya	Math Chairperson	F	5	No	Yes	No
Adam	8th Gr. ELA	M	3	No	Yes	Yes
David	6th Gr. ELA	M	9	No	Yes	Yes
Miguel	6th Gr. ELA	M	2	No	Yes	Yes
Linda	7th Gr. ELA	F	7	No	Yes	Yes
Steven	8th Gr. Math	M	4	No	Yes	No
Luis	6th Gr. Math	M	1	No	Yes	No
Melanie	7th Gr. Math	F	6	No	Yes	No

At Red Bank Charter School, the two school leaders were in the sample, the principal and the part-time Director of Curriculum. Also in the Red Bank sample were 9 teachers, 5 of whom taught students in grades 6 – 8 while the other 3 teachers taught early elementary school. Two of the teachers who appear to be outliers were included in the study as they participated in the ELA community of practice on data day. The principal at Red Bank Charter emphasizes that "all teacher voices should be heard in the DDI process as each individual has a unique perspective" and thus these teachers participated in the particular data day community of practice and another elementary teacher was selected by the principal to participate in the teacher focus group.

Table 3

Study Participants- The Red Bank Charter School

THE RED BANK CHARTER SCHOOL						
				Research Participation		
Name	Position	Sex	Years of Experience at RBCS	Interview	Data Day	Focus Group
Melanie	Principal	F	15	Yes	Yes	No
Irene	Director Of Curriculum	F	8	Yes	Yes	No
James	1st Grade	M	1	No	No	Yes
Abbey	1st Grade	F	4	No	Yes	No
Allyson	2nd Grade	F	8	No	Yes	No
Max	4th Gr. Math, ELA, Science & Social Studies	M	12	No	No	Yes
Julie	6th - 8th Gr. ELA	F	7	No	Yes	No
Maria	6th – 8th Gr Italian; 6th – 8th Gr. Character Education; Student; Discipline; Adult Literacy	F	11	No	Yes	Yes
Keri	6th – 8th Gr. Math	F	4	No	Yes	Yes
Victor	6th – 8th Gr. Science, 6th Gr. Social Studies	M	9	No	Yes	Yes
Lisa	6th – 8th Gr. ELA	F	12	No	Yes	Yes

Data Collection Procedures

To build an in-depth picture of each school's DDI process and teacher communities of practice around DDI, an array of data was collected (Creswell, 1998; Yin, 2009). Patton (2008) emphasizes that no one source of information can be trusted to provide a comprehensive perspective. The individuals responsible for implementing DDI were interviewed, and focus groups of teachers were also conducted. In addition, a complete data day at each school was observed. Documents related to the DDI process and from multiple data day sessions were also collected. Each of the data collection procedures informed the other and is presented in the order that they were used.

Interviews

Interviews are effective tools through which qualitative researchers can gather data concerning human experiences for analysis (Kvale, 1996). Interviews were employed to elicit the perspectives of participants in each school about the ways they use data, the communities they engage in around data, and the culture of the school and its role in their use of data. Each case study began with an interview of formal leaders and/or DDI coordinators. Utilizing a semi-structured protocol (see Appendix A) participants were asked a series of open-ended questions that elicited information about these formal leaders' perceptions of teachers' use of data, goals for data use, school culture towards DDI, teacher communities of practice, and how these communities are structured and used in DDI. Interviews with school leaders were conducted in the respective offices of participants at a time and date of their choosing. The interviews lasted approximately 90 minutes each and were digitally audio-recorded with permission of the participants. Verbatim transcriptions were made immediately after the interviews were conducted.

Observation

The data obtained from interviews although useful is limited in that it is dependent on the perceptions of those interviewed. Through observation, the researcher can see things firsthand and use his or her own knowledge and expertise to interpret what is observed (Merriman, 1998). After the leader interviews, I conducted one full-day observation (non-participatory) at each site. The observations were scheduled on data days-- times during which the communities of practice were discussing and interpreting data and its use in planning instruction. The scheduling of the observations was restricted by the schools' actual schedule of their data days. The two charter schools follow a

similar quarterly assessment schedule and therefore held data days on the same calendar day creating a conflict at the end of the school year. The third data day of the year was observed at each school as this was the first available data day after the schools had committed to participate in the research study. The observations at each site were believable as a typical data day; emblematic of what takes place on any data day as the interactions and discussions were genuine and too difficult to create as a pretense.

To conduct these observations, I first attended the general session led by the principal and school data leaders. Here all teachers were provided guidance and direction for the day. Later I observed the middle school math and ELA communities of practice. At each session I recorded structured field notes, which served as a method of organizing thoughts and information (Creswell, 1998). In the field notes, I listed all participants, recorded the location and time frame of meetings, and noted the topics of conversation and which participants interacted with which other participants. I also made note of any obstacles the participants encountered with the DDI process and how they were resolved. Any questions that I wanted to follow up on with participants were also noted.

To ensure that I captured the teacher talk about data, all data day observations were digitally audiotaped. At the completion of the observation, the audio recordings were transcribed first by Rev.com and then checked for accuracy by the researcher. The field notes were then integrated with the transcriptions so I had one set of field notes that captured all the talk and action of each school's teacher data days. Field notes were organized in separate binders for each school.

Teacher focus groups

A focus group is a carefully-planned discussion or group interview designed to obtain the perceptions of participants on a defined area of interest (Creswell, 1998). This method of interviewing was selected as the group interaction promotes scaffolding of thought and cooperation between individuals, and also encourages participation by teachers who may be hesitant to address interview questions individually (Morgan, 1998; Creswell, 1998). Normally focus groups are comprised of 4 – 8 participants-- small enough to hear everyone's opinions but large enough that there is diversity and the ability for participants to piggyback on or trigger one another's thoughts (Krueger, 1994).

At each school, a focus group of teachers was used to collect information about their interactions around data. This occurred after that school's data day had been observed so questions could build from the observations of the data day and deepen my analysis. There were 4 participants in the TEAM focus group and 6 participants in the Red Bank Charter group. Each focus group session was conducted at a time acceptable to all members of the group and lasted approximately 60 minutes. The participants at TEAM requested that I conduct the focus group over the phone as they articulated that they felt overwhelmed with responsibilities at school and could not find a time at an hour before 6 pm when all were available. At that hour they wanted to have dinner with their respective families and then participate via conference call. This focus group began at 7:30 pm and was recorded and transcribed verbatim by AT&T. At Red Bank Charter School, the focus group met in the morning at the start of the regular school day. Teachers sat around a table in the library/conference room and shared coffee and donuts. The focus group at Red Bank was audiotaped and transcribed verbatim by rev.com as soon as possible after the data was collected. An Amazon gift card was provided to all

focus group participants as a thank you. All audio of the focus groups were saved on a hard drive for later reference if needed.

The teacher focus groups were structured around 25 guiding questions which sought to answer the research question and sub-questions. These sessions served as` opportunities to clarify or corroborate observations from data day. The intent was to gather information regarding the use of DDI, the culture supporting DDI, the perceived impact of DDI on the classroom, how collaborative practices are structured, what hinders or facilitates teacher collaboration around data, and what informal communities of practice teachers turn to for advice. The questions fell into the following categories: communities of practice (7), use of data (4), collaboration (7), leadership (3) and culture (6) (see Appendix B).

Interview questions were open-ended with the goal of eliciting honest, personal responses. Follow-up questions were added as needed to clarify a participant's point of view. As the moderator of the focus group, the researcher encouraged all participants to speak in turn in response to a question so that no one participant monopolized the conversation.

Document Review

Documents are a ready-made source of information available to the researcher. They are "not dependent on the whims of human beings whose cooperation is essential for collecting good data through interview and observations" (Merriman, 1998) and therefore are nonreactive. Documents are exact, unobtrusive, can be reviewed repeatedly and cover a span of time and events (Yin, 2009) thus helping to undercover meaning pertinent to the research questions.

For each school, the following types of documents were collected: school Websites, annual reports, Department of Education generated school report cards, calendars, correspondence, student report cards, assessment results, and all materials provided to staff during the data analysis process of the second and third data days. Some of these documents provided background information such as history of the school, demographics of the school population, information regarding the school culture, and culture towards use of data. Other documents shed light on the presentation of assessment results and the protocols used in the communities of practice on data days. Each document provided a piece of the puzzle surrounding the means by which the communities of practice mediate the use of DDI. All documents were date-stamped and electronically scanned. The hard copy originals were placed in binders for each school.

Data Analysis

At the conclusion of data collection, the data set consisted of transcribed interviews and focus groups, transcribed texts of data day teacher work groups, field notes, and assorted documents from each school. Merriam (1998) suggests that analysis should begin simultaneously with the process of data collection. In following this recommendation, all transcriptions, field notes, and documents were uploaded into NVivo 10 as they were collected. The data from each school was saved in a separate folder in the program. This empirical data was then analyzed following a three-step process.

I began analysis by examining all of the data accrued for one school at a time. Initial codes were established from the theoretical framework. These deductive codes included community of practice, procedures and protocols, school culture, and leadership.

After applying these codes, I then read through all the data for the first case repeatedly, creating additional codes inductively to describe related quotes or data. These inductively-derived codes included categories such as time, instructional planning, advice, and analysis process.

In the second step, after I had completed coding the data using a coding scheme specific to that case, I organized the data set by codes. This involved reading all the data within a code to see how it related to data within other codes. I took memos on the relationships I found and then moved codes into organizational charts and trees of parent nodes and child nodes (Creswell, 1998; Miles & Huberman, 1994). For example, I made community of practice (COP) a parent node within which were codes for structure of COP, communication, analysis of assessment, and instructional planning. Data reduction took place as data was sorted into these categories.

Guided by the literature on data-driven instruction and communities of practice, I examined the complete data set for each case and highlighted the types of conversations about data that were found in the different communities of practice. For example, what conversations took place regarding lesson planning based on assessment data? Who did a particular teacher turn to for advice about instruction based on data? Was the advice seeking behavior reciprocated? Who, if anyone, asked questions which deepened the level of analysis about teaching and learning based on data? Finally the themes found in the data were used to create descriptions and findings.

Once I had developed a case portrait of each school's DDI processes, a cross-case analysis was conducted to consider similarities and differences between each case in relation to my research questions. I looked across the two sites using my theoretical

framework to find patterns and descriptions that transcended both cases (Merriam, 1998). The themes and generalizations of each case in terms of DDI protocols, leadership, school culture and professional communities were compared to the other. This gradual building of an explanation and related implications permitted the examination of alternate or rival explanations such as, "Is something other than DDI actually causing the change in instructional planning?"

Validity

As the founder and Director of a New Jersey charter school which uses a form of DDI, I was keenly aware of my own experiences, perspectives, and biases. My choice of charter schools as research sites is not a result of that bias but rather has roots in my personal knowledge of schools that present as rich sites for data collection related to the research question. Also my personal experiences regarding DDI provide ample experience in program implementation; however, as a practicing administrator, my opportunities to closely examine and observe teacher communities of practice outside of my school are minimal. This investigation design permitted me to assume a role outside of my normal position thereby structuring opportunity to gather data from differing viewpoints. I engaged in several practices to negate bias and ensure validity throughout the research process. These included member checks, triangulation, and peer review.

Both in individual interviews and in focus groups, it is possible that participants will say what it is they think the researcher wants to hear. I addressed this potential issue by using my experiences both in charter schools and in implementing DDI programs to establish credibility as a listener. Also all participants were informed that their identities would be disguised through the use of pseudonyms and no overt identifiers would be used in reporting data.

Stake (1994) emphasizes the need to verify qualitative studies through the use of member checks because the participants affirming the accuracy of the transcribed documents increase credibility. To conduct member checks, all interview transcripts were emailed to participants as PDFs to check for content and any additions or deletions they wanted made. A few weeks had passed since the interview and so participants had the opportunity to reflect on the content of the conversation and then check the file for accuracy of content. None of the individuals requested changes.

Methodological triangulation or the combining of multiple data collection methods strengthens reliability as well as internal validity (Merriam, 1988). Typically triangulation "involves corroborating evidence from different sources to shed light on a theme or perspective" (Creswell, 2008, p. 202). In this study, data obtained from interviews, observations, field notes and document review were used together so that the strengths of one method filled in deficiencies of another method. Collectively, the use of multiple methods depicts a more accurate portrayal of the sites. All codes and categories were triangulated across the various data sources as each data selection was coded. As expected in data triangulation (Yin, 2009), the evidence from a variety of sources converged to form a single set of facts.

As an external check of the research process, I engaged in two forms of peer review (Creswell, 1998). First, two members of my dissertation group met weekly at my home. During those sessions I presented my interview protocols and data collection methods for review. My peers reviewed the protocols and provided feedback on the structure and quality of interview questions and procedures. Later I met bimonthly with my advisor and larger dissertation group, where I reviewed my coding scheme, theme

development, and writing. At these group meetings, I was asked questions which challenged my thinking regarding my organization and interpretations of findings and personal biases.

In summary, these case studies provided insight into the implementation of the DDI process in two charter middle schools. Through collection of data from multiple sources, themes were identified relative to each site. Efforts to prevent bias and build validity were taken. In the next chapter I present each case providing evidence from the data for the themes which developed. The cross-case analysis that is presented in Chapter 5 leads to the formulation of key findings and implications for practice.

CHAPTER FOUR: CASE STUDIES OF TWO SCHOOLS' IMPLEMENTATION OF DATA

> *Scholarship has not sufficiently conceptualized or explored the collaborative use of data by teachers as a distinct teacher practice* - Cosner, 2012, p.27

Data and data driven instruction is now viewed as an essential strategy for educational improvement (Young and Kim, 2010). The generation and use of data has historically been the purview of school administrators who have had the task of reporting to school board and state agencies about student achievement, among other things. However, with the push toward accountability, and the implementation of mandates that link student achievement on test scores to funding formulas and teacher evaluations, data driven decision making has percolated through the bureaucratic layers and is increasingly seen as a part of teacher work.

Capitalizing on newer models of professional development that have shown instructional improvements results when teachers in small groups examine student work (Bryk and Driscoll, 1988; DuFour, Eaker and DuFour, 2005), much of the data driven decision making teachers are being asked to engage in is collaborative in nature. These collaborations can take the form of professional learning communities, department level meetings, grade level planning and the like.

Working in collaboration with other teachers to examine student work, helps teachers to assess and identify the learning strategies used by students as well as possible misconceptions students may have about particular content (Cosner, 2012; Goertz, et al, 2009). By looking at student data together, teachers share their expertise helping each other to rethink how they approach instruction with particular students. Future instruction is strengthened and personal preferences are avoided when teachers plan informed by

data on past learning and instructional efficacy (Cosner, 2012; Lai and McNaughton, 2009; Timperley, 2009). In the collaborative setting of a community of practice, teachers can break out of their isolated practice and evaluate their work, the efficacy of instruction and share strategies for improved teaching and learning based on data.

While the research regarding data practices in teacher collaborative settings in schools describes the usefulness of shared meeting time and arranged settings for data use (Blanc, et al, 2010; Cosner, 2011a; Young 2006) there is minimal research available to direct school leaders in how to organize, structure and support teacher communities of practice around the use of data.

Unlike traditional public schools where the emphasis on DDI is more recent, DDI has been a common practice in most charter schools for some time. Since 1997, the New Jersey Charter School Program Act (1996) has required each charter school to submit an annual report that details academic, fiscal and organizational targets using multiple data sources and processes. As charter schools are quite experienced in the use of data driven instruction procedures, they provide a setting for gathering information on best practices for implementing DDI.

The purpose of this chapter is to describe the use of DDI in two New Jersey charter middle schools with the aim of identifying actions which strengthen the collaborative use of data in teacher planning and instruction. How DDI looked in each school and how teachers were involved in communities of practice around DDI reflects the underlying values of each school culture and the work of leaders to develop a shared vision and focus on instruction. I present these findings first by focusing on DDI in

TEAM Academy and then in The Red Bank Charter School. I conclude this chapter by identifying common practices which support teacher use of data driven instruction.

TEAM Academy – A KIPP School

> *Within earshot of the roar of a nearby highway, an empty brick school building on a city street has been resurrected as TEAM Academy Charter School. Once you pass through the double doors and up the stairs worn from decades of use, you are welcomed into a college preparatory charter middle school. Each person smiles, provides a courteous nod of the head or greets by name any passers-by. One quickly gets the sense that this is a safe haven; a caring environment nestled in a bustling city, where a community of learners is like-minded in their work towards a promising future.*
>
> *The halls are warm and cheerful, proudly displaying exemplary student work and pictures of TEAM staff and students. College pennants over classroom doors announce the alma mater of the teacher instructing within. From day one of summer school, grades of students are referred to by large banners which display the year the class will be entering college. The message is clear for these primarily African-American, low-income students: it's not a question of if, but rather when they will attend college.*

School culture is a complicated system of shared traditions and rituals constructed over time as teachers, students, parents and administrators work together establishing routines, facing crises and celebrating accomplishments (Deal and Peterson, 1990, Lassiter, 2009; Schein, 1997). The artifacts of a school, such as the rituals, procedures and materials in place are the observable acts that provide insight into the meanings of school culture. Culture is therefore the meanings that underlie school artifacts and when "people can communicate and negotiate these shared meanings culture is at work" (Lassiter, 2009, p. 43).

As the vignette above illustrates the culture of the TEAM community, like other KIPP schools, is focused on academic success. Artifacts like the college pennants over the classroom doors and displays of exemplary student work communicate that "every student will go to college." As Annie, the Dean of Instruction at TEAM said, "We feel,

really, really strongly about the fact that we need to prove that this can be done…changing education." Founded in 2002, TEAM Academy, is one of five Knowledge is Power Program (KIPP) schools in New Jersey and the school culture is structured by a number of organizational, procedural, and instructional protocols for working with low income and minority students, all of which comprise the TEAM "toolkit."

The work to make every student an academic success begins soon after the students have been selected in a lottery open to Newark residents. The first of many rites involves staff from the school visiting each new "Teamster" at home. During this visit, students and parents review the school's Commitment to Excellence contract with the school staff; a physical compact wherein the three pillars of the educational process – home, school and student - agree to their roles and responsibilities in the education of the student. This first visit introduces students and their families to the home-school connection which TEAM values. Another example of this connection is that teachers remain accessible by cell phone long after school is over. Late night phone calls about homework are not uncommon. Such rituals strengthen identification with the organization and its mission. According to Deal and Peterson (1990), people are motivated and feel committed to an organization that has a clear meaning, values and ennobling purpose.

As in most KIPP schools, new fifth grade students arrive at TEAM in August, when most other students are still enjoying their summer vacation. On that first day of school, students are initiated into the culture of TEAM and strive to earn their chair and their first uniform shirt (Team Schools, 2013). As the year progresses, students earn perks

for "doing the right thing and meeting expectations…" with the ultimate prize being a seat on one of the four end-of-year field lessons – education field trips - to either Washington DC, Utah, California or Puerto Rico (Team Schools, 2013). Such ceremonies, rituals, and traditions intensify connection to the school, build community and strengthen motivation (Deal and Peterson, 1999). Another piece of the KIPP toolkit enacted at TEAM is that students are expected to implement an educational practice wherein as engaged learners they **S**it up; they **L**isten; they **A**sk and Answer questions; they **N**od when it makes sense to nod; and they **T**rack the speaker—whether that speaker is a fellow student or the teacher (Mathews, 2009). SLANT helps students remember the behaviors which KIPP teachers identify as foundational to a stimulating learning environment. At TEAM, SLANT is perceived as a means to an end, not an end itself.

TEAM also elected to follow the KIPP practice of "the bench," an intentional sports analogy. A more immediate consequence than not earning a spot on the end-of-year field lesson, the bench is used to remind students that there are consequences for their choices. In the main office of TEAM two students stop in to ask the secretary about some paperwork. She politely answers with a smile and then reminds them good-naturedly that they need to get back to class quickly as they know that the seventh grade teachers are cracking down and placing students "on the bench." When on the bench, students are required to sit out and remain an outside witness to academic or social interactions until such time as they have earned the privilege of rejoining their peers.

Observable KIPP procedures such as the banners, home visits, availability of teachers after hours, home-school compact, SLANT, and the bench are tools through which the TEAM culture is communicated and lived. Cultural knowledge is not inherited,

it is learned (Lassiter, 2009). These artifacts communicate the shared value that every student can succeed and will go to college. Central to ensuring that all students will succeed academically at TEAM is data driven decision making. Just as the stringent expectations of students are patterned into life at KIPP so are the ways teachers are expected to engage in DDI.

The DDI Process at TEAM Academy

> *Teachers and administrators look comfortable in jeans as they sit at tables in the large room in the school basement. They pore over the most recent interim assessment results and chat with their peers as they wait for the data day to begin. Soon Annie is reviewing the schedule for the day and reminding teachers to avoid "band aids." With the state assessment looming on the horizon it is tempting to identify standards where students lack proficiency and patch together band aids to get them through the test. Rather, the teachers at TEAM are told to focus on "deep teaching"- after all they are in it for the long haul- preparing their students for college.*

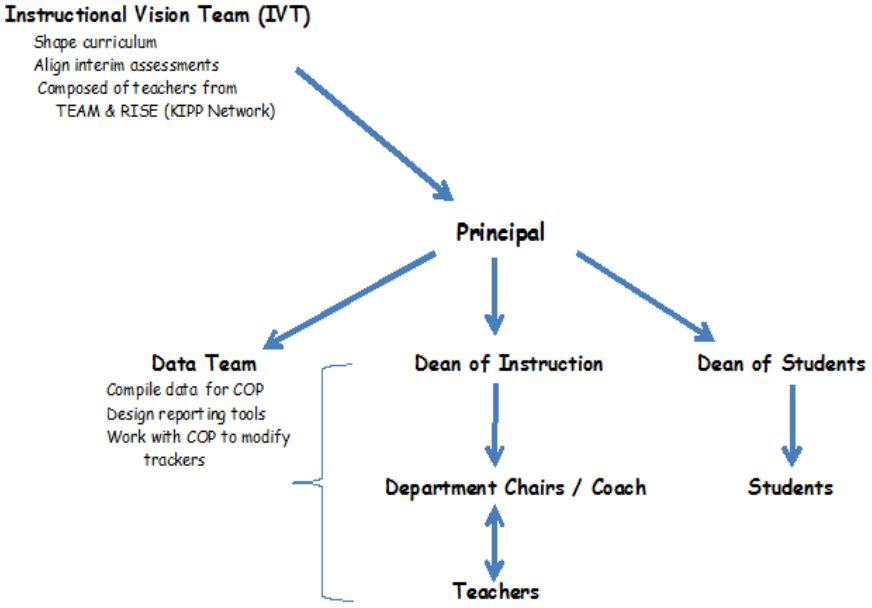
The casual dress of TEAM administration and staff is not indicative of a laid back approach to data and instruction. Rather, beneath the easygoing veneer, the KIPP network in Newark and TEAM, in particular, is committed to a data driven model. The data process at TEAM is prescribed by administration and involves a structured approach to data generation, data analysis, and instructional decision making. This structured approach begins with the organization of resources, and is carried out through the use of protocols and deliberate opportunities for TEAM staff to work in communities of practice.

Organization of Resources

TEAM's prescribed approach to DDI begins with the organization of the school and the way resources of time and people are allocated. Figure 2 describes the organizational structure of TEAM.

Figure 2

TEAM Academy Organizational Chart



The DDI process in KIPP begins with the Instructional Vision Team (IVT), a joint initiative between the KIPP middle schools in Newark. David, a senior member of the ELA department describes how DDI begins from the top

> There is a leader created team between the two middle schools, which is called the IVT, the Instructional Vision Team. They are charged with the responsibility of shaping the curriculum and moving our interim assessments and aligning our interim assessments with the curriculum.

DDI is then implemented through a fairly traditional organizational structure within TEAM Academy. TEAM is led by a principal, Jon, who sees DDI as primarily the work of the Dean of Instruction therefore Jon's role with DDI is minimal. There are two Deans, each of whom serve in the role of assistant principals. As the Dean of Students, Robert is charged with overseeing student issues and discipline so he, like Jon, does not have an active role in DDI implementation. Annie the Dean of Instruction, on the other

hand, concentrates on supporting teachers and using DDI as a tool for improving teaching and learning, DDI is one of her main responsibilities. Annie says "it's my dream job. I just get to coach teachers, look at data and help." Annie is also the coaches' coach and therefore provides professional development and guidance to both coaches and teachers.

Most KIPP schools implement a lean leadership structure by distributing leadership within and across KIPP schools. Five of every seven leadership positions in KIPP schools are occupied by staff that came from in network (TEAM Annual Report, 2012). At TEAM, leadership is distributed by assigning department chairs the dual role of classroom teacher and content area leader. There are a total of 4 department chairs, two of whom also serve as instructional coaches. In addition master teachers who strive to grow into leadership positions may be approved by administration to coach one teacher. Currently TEAM has a total of 5 coaches supporting a staff of 35 teachers. The strategy of using coaches to support a data culture has been found to be a key factor in helping teachers make valuable connections between assessment data and instruction (Goertz, Olah & Riggan, 2009; Means et al, 2009; Young, 2008). Unlike data coaches, whose primary responsibility is to manipulate the data and prepare it for analysis, the coaches at TEAM have an instructional focus. They conduct walkthroughs and regularly meet with staff to guide reflective practices and assist teachers in planning for instruction.

The U.S. Department of Education sponsored a study of data use in 36 schools located in 12 districts. Survey data from this study indicated that half of the districts have made data analysis experts available to at least some of their schools and 32 percent indicate they have placed data coaches in all of their schools (Means, Padilla & Gallagher, 2010). Unlike the instructional coaches at TEAM, the data coaches are solely

focused on preparing data for distribution and analysis. At TEAM the "data coach" role is filled by a full-time data team comprised of three individuals whose job it is to compile data, design data systems and spreadsheets, and be responsive to the needs of teachers during the DDI process across the network. Their data system organizes data from multiple sources – classroom, formative assessments, and state assessments - to provide a comprehensive view of student achievement for diagnostic purposes. This is atypical as according to Means, et al (2009) it is not common for classroom and state assessments to be combined in one reporting system. Bali, TEAM's lead data person, is accessible to modify trackers (reporting tools) as needed in order to readily provide teachers and administrators interim assessment data in the desired, useful configuration. When teachers were breaking into work groups on one of the data days Bali addressed them saying,

> If there is something that looks wrong with your DDI data just send me an email and I will pop into the room you are in and work on your reports just to make sure everything looks good for you.

Later in a data day her words were put into action:

> *During a data analysis session the middle school language arts teachers are discussing the potential benefits of students reviewing their individual answer choices on the interim assessments and using the data to reflect and set personal goals. After realizing that they are unable to provide the students that detail using the current reporting format, Annie emails Bali. Ten minutes later, Bali arrives and the members of the community of practice share their idea and the obstacles that currently exist. Together they brainstorm a format for presenting the data and Bali assures them that she will work on their request and get back to them with a product within the week.*

Adam, a third year language arts teacher explains the importance of having the DDI team as a resource, "I think the thing that makes it [DDI] easy is that we have that data team

that compiles it all [data] and sends it out. You know logistically we can all be looking at the same thing at the same time." Miguel, a second year teacher agrees and adds

> I think something else that's helpful is if we notice that something might be off, we can get feedback about that (assessment data) tracker in real-time so the data team will also be present to investigate something and then either confirm or adjust.

With the support of this data team, administrators and teachers do not have to worry about the processing or manipulation of data. They are free to concentrate their efforts on analyzing student data and developing instructional modifications.

To ensure that teachers and leaders can engage in DDI, the school carefully structures time for meetings to share, analyze and plan around data. The quarterly administration of the schoolwide formative assessments, most often the Northwest Evaluation Association's (NWEA) Measures of Academic Progress (MAP), are followed by an entire day dedicated to collaborative data analysis and lesson planning. In other words, the school sets aside four days each school year and dedicates them to data discussion. TEAM sees these days as so crucial to student success that they maintained the culture even after Superstorm Sandy, which cost the students two weeks of school. TEAM protected the important time for collaborative data practices even though the school leaders had to reduce each professional development day from a full day to a half day.

Teaching is a three-part act – planning, doing and reflecting. Therefore, school schedules need to reflect time for the planning and reflection that takes place outside of the classroom. Love et al. (2008) in The Data Coach's Guide recommend "a minimum of 45 minutes per week of uninterrupted protected time for collaboration" (p. 42) so teachers can work together analyzing data and planning accordingly. TEAM exceeds this

recommendation with up to two hours a week for structured collaboration between teachers in communities of practice. In addition to the quarterly intense data days, teachers engage in DDI as needed throughout the year in weekly department meetings (which are scheduled for two hours a week) or biweekly coaching sessions (which take between forty-five minutes to an hour). The exact time dedicated to DDI in these meetings varies.

Good teaching is the product of excellent planning and reflection through collaboration (Little, 1990; McLaughlin & Talbert, 2001). TEAM, through its organization of time and resources attempts to create an environment that supports quality teaching. The allocation of time for data days, department meetings and coaching sessions permits needed collaboration and reflection between teachers and coaches while the availability of a dedicated data team ensures that data is readily available for teachers in a usable format. Put simply, the organizational structure at TEAM says "data matters".

Data Collection at TEAM

The top-down guidance given to staff begins with the data generated and used in DDI. According to Firestone and Gonzalez (2007), in a school culture focused on learning, a variety of data sources are used to clarify the nature of the problem and monitor the actions that follow. TEAM uses a variety of data sources or data points as they call them and these data points examine both teaching and student learning.

The data collected about teacher practice included lesson plans, walkthrough feedback forms and formal observations reports, all of which have a data component comprised of written feedback. Although brief observations (15 minutes), the weekly walkthroughs are targeted to follow up on the implementation by teachers of specific

strategies or practices that were previously identified in formal observations or coaching sessions. Debriefing from walkthroughs provides the teacher regular feedback. Weekly observation feedback is directly aligned with the teacher's development goal, while the three "full", 60 minute observations are designed to diagnose overall strengths and focus areas.

Collection of student data is multi-faceted to provide a broad picture of the students academically. On a daily basis, teachers collect formative assessment data about students. Throughout instruction, teachers use tools such as graphic organizers and other classwork to that provide data on student mastery. At the end of each class, students complete a teacher developed exit ticket. These exit tickets may take the form of a question or brief reflection which helps the teacher gauge if the students mastered the day's objective or if they require remediation. For example "The big idea of today's lesson was… An example of which is…" or "On a scale of 1 to 10 I rate my grasp of today's lesson a … To improve I need to …" These types of formative assessments provide real-time data to teachers to assist them in decision making about the curriculum and planning for instruction.

Summative evaluation is conducted through the mandatory state assessment – NJ ASK. This summative data is not as helpful in the DDI process as it occurs after instruction has taken place. More informative for teachers and coaches is data from benchmark assessments. TEAM currently conducts four benchmark assessments a year – three interims using the Northwest Evaluation Association (NWEA) Measure of Academic Progress (MAP) in English Language Arts (ELA) and Math and a practice state assessment administered approximately one month before the NJ ASK. Benchmark

assessments at TEAM also include the Fountas and Pinnell assessment for evaluating student reading.

Over the years, TEAM has changed the assessments they use to collect benchmark data in search of an assessment that can provide accurate data on how students are progressing against national standards. Annie explains,

> We were, as a school, way behind the curve in the early years because when we started, the NJ ASK was only in eighth grade. We were using a test called the SAT 10, a nationally normed test because we had to have something to measure student growth. MAP wasn't the big thing yet. So KIPP was using that test which was very skill based, not super rigorous thinking-based, and so we were getting 90% proficient rate, and thought "This is so great," and then we were, like wait… "What does it really mean?"

As standards vary from state to state, KIPP, a national organization, was unable to develop their own benchmark assessments. Annie added

> The main measure that KIPP has used for the last few years is the MAP because you can measure growth and you can see core growth…We use internal interim assessments, and then we use a practice state test. It's kind of a hodge-podge.

With the implementation of the common core standards the staff at TEAM is looking to better align these interim assessments with the curriculum. Daniel, a teacher explains:

> The goals and the use of the data also really weigh a lot upon the effectiveness of the test. And so we've actually been struggling a lot with our interims and we're making the shift next year to have more aligned, authentic interims, because right now they're simply benchmark tests that we're calling interims and so there's material on them that we have not yet taught. And so when we look at our data we realize, "Oh they didn't get to cause and effect because we haven't taught cause and effect yet." And so we're making a shift next year into interims that are actually measuring what was meant to be taught in that period of time.

In referring to the interims as "authentic" Daniel is referencing assessments which have three basic characteristics: direct measurement of skills related to long-term educational outcomes, tasks that require extensive engagement and complex performance, and an

analysis of the process used to get the response. Grant Wiggins (1993), an ardent supporter of authentic assessments, asserts that the more traditional methods of assessment, such as multiple choice, true-false, etc. fail to measure the complex intellectual nuances of real-life experiences and therefore limit test-taking and the curriculum itself to basic skills. As content-standards such as the Common Core are emphasizing higher-order, critical thinking skills, the leaders at TEAM are wisely including more authentic assessments.

Next year interims are scheduled to become aligned with not only the curriculum scope but also the sequence, and so the authenticity of the assessment will ultimately determine how integral it is to teaching and learning. Daniel explained

> So I know after Interim 1 in the past I really just used it as this is my baseline of how students performed, but my teaching doesn't really adjust as a result of it. It's not until the third interim that I'm really looking at the data and thinking, "Are there any gaps that I need to cover before the NJ ASK?" So I'm really hoping that next year's shift with our interims allows the data to become much more useful throughout the year, because it will actually reflect the teaching that was supposed to have occurred in like a 6 week or a 12 week period.

In addition to scripting the types of data to be collected and generated, teachers' interactions around this data are also shaped by the establishment of benchmark targets for the interim assessments at TEAM. These benchmark targets are established not by the leadership of the school but by the KIPP network. The Northwest Evaluation Association (NWEA) provides growth targets based on individual student's MAP results and the KIPP network uses them as a reference in establishing their own targets. Miguel another classroom teacher explains

> The benchmark goals are set by the network, so that isn't something that we as teachers have any control over like where we're shooting for our students to perform. And they range from grade level to grade level, taking into account how

> many of your students have been with us and have had the chance to catch up to grade level.

To ensure that the teachers actually work with the data generated by the MAP assessment, TEAM has structured protocols around which this collaboration takes place.

Protocols of DDI

As one might expect to find in a school that is a part of a national network, the work that takes place at TEAM around data is prescribed by specific protocols. The use of protocols allows for consistency in implementation of DDI across the network. The administration of TEAM uses them to ensure that the time and resources given to DDI result in changes in teacher practice. These protocols establish the requirements for all staff interactions around data.

Protocols are the system of rules and procedures that govern the work of a formal process (Merriam-Webster, 2014). In terms of DDI, the protocols are documents that guide the data analysis process and the discussions that take place between teachers. At TEAM there are strict protocols in place to structure the entire DDI process - from the assessments used and the schedule of their administration to the reporting of data. These protocols are often structured as a series of guiding questions or a template with specific headings and spaces where teachers must identify what the data tells them about an instructional goal and how they will address that goal in practice.

The use of these various protocols is most evident during the data days. For example, over the nearly six hours of Data Day 3, the TEAM staff use 6 different protocols. The protocols range from directions and guidance at a school wide level to protocols that structure the micro-level interactions between a coach and teacher. In establishing the climate for the day's data analysis, Annie first uses a protocol to

introduce the framing questions and overall objective which will guide the day's work. Shared with all of the teachers orally and in writing, this protocol even reminds the staff as to why they need protocols to guide their work: "A focused data analysis protocol enables the continuous improvement process and provides information about how our students are doing in regard to achievement goals." While still in the general session, a second protocol is shared with the staff - the SMART intervention guide (Figure 3).

Figure 3

Data Day Guide for Intervention

SMART Intervention: Make interventions as intentional as possible

The components of a SMART intervention plan incorporate as many of the following qualities as possible:

S – Scoring Potential – Is there room for significant improvement on targeted standards for mastery? If students are already performing fairly well on a targeted standard, there may not be enough room for growth to justify the instructional/intervention time. Students may just need maintenance of the skill.

M – Major Impact – Does mastery of a standard or skill carry substantial weight on future exams and in preparing for the next grade-level? If the standard or skill is likely to be tested only once, it may not be worth the investment.

A – Amplifying Effect – Does mastery of a standard reinforce, or advance, other tested standards?

R – Reachability – Are the focused intervention groups on or close to being on track to proficiency? If scholars are still far from proficiency on a standard, then it is too risky and resource-intensive to reach them. Another standard (think Power Standard) would be a more appropriate selection for intervention and build their foundational skills.

T – Teachability- Is the standard easy to teach using few intervention strategies?

The purpose of this protocol is to help teachers prioritize the objectives in need of remediation. Teachers are asked to identify and target objectives which have scoring potential or room for growth. Also they look for objectives which will have a major

impact on future assessments and which may be amplified by reinforcing or advancing other standards.

Three additional protocols are used during the departmental meetings (see Figure 4 below for an example).

Figure 4

Data Day Protocol Page 3 – Departmental Community of Practice

Standard Analysis (Small Group Instruction) What are the essential standards that the class mastered, but small pockets of students did not?	**Student Names**	**Analysis of why students did not earn specific standards.** Looking at the bombed questions… 1. What is the most common error? Did students all choose the same incorrect answer? 2. What misunderstanding or erroneous assumption would lead students to the most common error? 3. Does the question test what I taught? What did I teach them? 4. Could they be missing a foundational skill? 5. Is question format an issue? (MC vs SCR vs ERC)	**Instructional Plan:** What techniques will you use to address standards? 1.What do they need to know to get this right the next time they see it? 2. Is this an isolated standard or a building block to other grade-level standards? 3. When can I teach them the information and skills so that they never miss this again?	**Instructional Plan:** How and when will you structure small-group instruction? While office hours and lunch are an option remember KFET 4.4D. Use practice and grouping strategies to work with specific students in class. (You don't need an intervention time to intervene)

Each of these protocols provides structure to the data analysis process by directing teachers attention to the content students did not master, expecting them to reason through why they did not master particular content and then to identify specific teaching techniques and plans that they will use to remediate the gaps in student learning. The protocols therefore are a way of ensuring that teachers use data to inform their instructional decision making. From a teacher's point of view of these protocols Daniel said,

> There's that huge reflection sheet [protocols] that we're given that asks you like to locate all of this information and analyze your data. It's a pretty good guide and it's the one that we use every single time that we're looking at our interim data.

The multiple protocols used in the DDI process at TEAM prescribe the work of the teacher in data analysis and planning. Each data day all protocols are provided to the teachers on paper for immediate attention. They are also sent electronically so that teachers can directly enter their responses into the template. Because teachers have to complete and submit these protocols to the TEAM administration, they are held accountable to these plans.

Collectively the protocols draw teachers' attention to each step of the DDI process so that the aims of the school leadership are met. The protocols focus the teachers' actions, eyes and thoughts in a very deliberate way; organizing who meets together, when they meet, what they discuss and how those discussions are structured. The top-down organization of resources and use of protocols comes together in how data is used in the data days and other communities of practice at TEAM.

Communities of Practice at TEAM

> *Five TEAM language arts teachers sit around a table in a seventh grade classroom on the second floor. Each has a packet in hand containing the data from the third interim assessment. A teacher shares how one of her students read the prompt about finding the silver lining in a situation and proceeded to write an essay about clouds. Another expressed frustration that despite her repeated practice several students did not plan their writing before beginning the task. They tossed around ideas of how to provide the students more authentic opportunities to practice essay writing to build confidence before the NJ ASK. In observing the five individuals composing this community of practice one is unable to identify who has more experience than another or even who is the coach and who are the teachers. The enthusiasm of these individuals as they practiced their craft is contagious.*

Lave and Wenger (1991) propose that learning does not take place in isolation but rather through interactions between individuals - from the synergy which takes place in a community of practice. A community of practice provides opportunities for individuals to share information, practices, resources, experiences, and common perspectives, thus promoting people learning from one another. As in other aspects of life, addressing the tough problems in teaching and learning is difficult when one works alone, however struggling together and relying on one another it is likely that teachers will have better results (Timperly, Annan & Robinson, 2009; Wohlstetter, Datnow & Park, 2008).

Wenger (2003) in Smith explains that all communities of practice exhibit three characteristics: they have a joint enterprise as understood and continually negotiated by its members; are bound into a social entity by mutual engagement; and together they produce a shared repertoire of communal resources (routines, sensibilities, artifacts, vocabulary, styles, etc.). At TEAM there are several collaborative teacher and teacher-administrator communities related to DDI that meet this definition. All of these communities of practice are comprised of members who have consciously agreed to keep the academic success of each student as the center of their work. This focus on the academic success of students serves as their joint enterprise. At regularly scheduled meetings all members of the communities use a common language and follow protocols as they mutually engage in looking at data. From these communities of practice, individuals collectively produce artifacts that focus instruction such as teaching plans.

The theory of communities of practice stipulates that they form naturally; however at TEAM most the communities are deliberately formed to ensure that all staff members of TEAM engage in DDI. These structured communities of practice take

differing forms and are populated by differing people depending on the data being examined. Although teachers work at times in communities of practice that form organically, the observed communities were formally structured by school leadership. The table below describes the various communities of practice at TEAM. These communities of practice are organized by when school staff work with data – on data days, in between data days or informally (see Table 4).

Table 4

TEAM Communities of Practice

Collaborative Forum	Participants	Frequency of Meetings	Data Used
Data Days			
Data Day Analysis	Principal, Dean of Instruction, Coaches, Teachers – representatives from other TEAM schools	Quarterly	Interim Assessments NWEA: MAP NJASK
Department Meetings	Department Chair and Teachers	Quarterly	Interim Assessments NWEA, MAP NJASK
Coaching Sessions	Coach and Teacher	Quarterly	Lesson Plans Assessments NWEA, MAP NJASK
Between Data Days			
Group Examination of Student Work / Norming	Teachers	Quarterly	Interim Assessments Classwork
Department Meetings	Department Chair and Teachers	Weekly	Weekly Assessments Exit Tickets Report Card Indicators Content Specific Assessments i.e. *Fountas and Pinnell*
Grade Level Meetings	Department Chair and Teachers	Weekly	Weekly Assessments Exit Tickets Report Card Indicators Interim Assessments
Instructional Vision Team	Representatives from all Newark TEAM schools – Deans of Instruction and Teachers	Quarterly	Interim Assessments Curriculum
Coaching Sessions	Coach and Teacher	Weekly / Biweekly	Lesson Plans Gradebook

			Walkthroughs Exit Tickets Focus Areas of Development
Administrative Feedback	School leader, Dean, Dept. Chair, or Coach and Teacher	Triannual Observations Weekly Walkthroughs	Formal Observations Walkthroughs
Informal			
Face-to-Face Meetings	Teachers	As Desired	In Class Formative & Summative Assessments Teacher Observations

Data Days as Communities of Practice

The most consistent and deliberate forum where data is used to drive decision making at TEAM is in its quarterly data days. These "data days" are painstakingly organized by TEAM leaders as the framework within which conversations regarding data, student achievement, and teaching take place. Three times a year staff from TEAM and RISE, the two TEAM network middle schools, participate in data day activities together for the purpose of sharing best practices across the network. Annie described the structure of these cross-school data days

> The morning is school-based and then in the afternoon our partner middle school comes over and we have a joint session. First, you meet with your counterpart teacher, so the fifth grade math teacher at RISE meets with the fifth grade math teacher at TEAM and they look at the interim results. "OK, like, your kids did awesome on this one. My kids bombed it. Well, how did you teach that? What did you do differently?" Then the teachers switch roles. After this the whole department meets to try to uncover as a network: What are the key things that our kids are doing well that we want to keep doing? What are the areas of growth? And then what we do we want to try? What are we all going to commit to try in between now and the next interim?

In addition to these cross network data meetings, the staff at TEAM Academy meets on data days in TEAM communities of practice. The work of teachers and administrators takes place in three distinct, collaborative meetings - the general session, department meetings and coaching sessions.

General session. The data day begins with a general session for all teachers in a large meeting room at the school. No actual data analysis takes place during this time; however at this time teachers are provided a written packet with all protocols that will guide their work for the day. The Principal and the Dean of Instruction clearly articulate both verbally and in writing the purposes of the day. Jon, the first year principal of TEAM begins

> Today's goal is data analysis. Most of it will look the same as in the first two rounds and so is familiar to everyone. You will figure out what are the standards that kids did really well on because you want to ask yourself 'What teachers' practices led to that and what do I need to keep doing? What standards should I choose to focus my teaching on?'

Annie added

> We all have NJ ASK on our minds. What has the tendency to happen is teachers see their data today and suddenly want to put a whole bunch of Band-Aids on everything…The message I want to send in the next five minutes is have the mindset of no Band-Aids today because we are in this for the long haul – getting our kids to college and the Band-Aids in the long run are not going to help as much as deep teaching.

Annie reminds teachers why TEAM is using interim / benchmark assessments and why prescribed protocols are helpful in the DDI process. Also, in very clear language the objective of the day's work is shared – to outline six-week reteach plans in their subject area. This is accomplished by reviewing the Interim Assessment Data Day Protocol (Fig. 5).

Figure 5

Interim Assessment Data Protocol

Framing Questions:

What is the purpose of interim assessments?

To increase student achievement

Why do we need a protocol?

A focused data protocol analysis protocol enables the continuous improvement process and provides information about how our students are doing in regard to achievement goals.

Today's Objective: We will outline a six week reteach plan that build in…

- **Whole Group Lesson** for the top 3 standards that require "mass reteaching"
- **Small Group Intervention Plan** for the top 3 standards that the class mastered, but certain students did not.

After the general instructions are provided by Annie, she leads the teachers in a think-pair-share activity. The purpose of this activity is to review the criteria of the SMART Intervention Plan (Figure 3). Annie wants teachers to use this intervention to guide their thinking in choosing what standards to place in the protocol grid. She explains it as follows

> The first idea to have in mind is the criteria that you're going to be thinking about when choosing (the standards). 'Okay, there are several standards that my kids didn't master' There are probably more than the three that there is room for on this chart. How do I choose which one to grid? Here are some criteria.

During the think-pair-share activity, teachers review the criteria by summarizing them for their partner one letter at a time. This ensures that all teachers are clear of the intent of the work as they proceed with the data analysis. As the tone and intent for the day had been established, Annie dismisses the teachers to various classrooms for departmental meetings immediately after the think, pair, share activity.

Department Meetings. The major work of data analysis occurs during math and ELA department meetings on data days. On this data day, the next agenda item includes

reviewing class level and individual data in departmental settings. Teachers move to various locations in the building where they engage in review of data in small groups for the next five hours. Each group has a coach present who guides the discussion. Annie described the work in these department meetings as, "Teachers will be in the same room in department groups just kind of working, chatting, thought partnering and sharing like, 'Oh, how did you find this, and what should I do with this?'"

Guided by another protocol (see Figure 6), department teams first examine grade level data from the interim assessment to identify those standards students performed well on. Then, through reflection and discussion they describe specifically what instructional strategies contributed to this success and how the desired results will be maintained moving forward.

Figure 6

Data Day Protocol Page 1 – Departmental Community of Practice

<table>
<tr><td rowspan="2">Standard Analysis (Whole Class Instruction) List 3 standards that students did the best on</td><td rowspan="2">% Class Correct</td><td>What best teacher practices led to student success on these standards?
What must students do to maintain this success?</td></tr>
<tr><td></td></tr>
<tr><td rowspan="2"></td><td rowspan="2"></td><td>Teacher</td></tr>
<tr><td>Student</td></tr>
<tr><td rowspan="2"></td><td rowspan="2"></td><td>Teacher</td></tr>
<tr><td>Student</td></tr>
<tr><td rowspan="2"></td><td rowspan="2"></td><td>Teacher</td></tr>
<tr><td>Student</td></tr>
<tr><td colspan="3">Describe opportunities for students to maintain their mastery. Extra practice will help maintain mastery. Practice doesn't have to be detailed, long or extensive. Think of small ways to build in mastery maintenance.</td></tr>
</table>

In identifying that students performed well in the areas of vocabulary and figurative language, the language arts teachers and their coach reflected on the contributory practices that led to this success and strategized on how to maintain it.

> Teacher 1: You can see that a lot of the skills they did really well on have been embedded into To Kill A Mockingbird.
>
> Teacher 2: You are in a good place. They made a lot of improvement.
>
> Coach: Yes that's the way it should be. For example, vocabulary and figurative language were both embedded into the unit.
>
> Teacher 1: I did feel that I could have embedded them more. Like some days there is book work for homework and I include those types of questions. I mean I could have them pick those things out of independent reading books but then it is harder for me to check their work.
>
> Teacher 2: Yes it's almost impossible to give them feedback unless you have read all of the books.

Simultaneous conversations took place in each department and teachers jumped from finding successes to identifying standards in need of additional whole group or targeted instruction. The teachers then turned to using the interim assessment data to identify priority standards (see Figure 7) that they will address through whole-group or more targeted (small group/individual) instruction.

Figure 7

Data Day Protocol Page 2 – Departmental Community of Practice

Standard Analysis (Whole Class Instruction) What are the 3 highest priority standards that warrant more time for whole-class instruction and review (lowest performance) *ELA teachers choose standards from reading and writing	**% of Class Correct**	**Analysis of why students did not earn specific standards.** Looking at the bombed questions… 1. What is the most common error? Did students all choose the same incorrect answer? 2. What misunderstanding or erroneous assumption would lead students to the most common error? 3. Does the question test what I taught? What did I teach them?	**Instructional Plan:** What techniques will you use to address standards? 1.What do they need to know to get this right the next time they see it? 2. Is this an isolated standard or a building block to other grade-level standards? 3. When can I teach them the information and skills so that they never miss this again?

		4. Could they be missing a foundational skill? 5. Is question format an issue? (MC vs SCR vs ERC)	

Test Taking Habits:

- Based on your observation while they were taking the test and the student work you saw while grading, what good testing taking habits do they already have? What test taking habits need to be taught to our students before the NJASK?
- How did the students do on MC vs. Constructed Response questions? How will this impact your reteach plans?

Using protocol 6, two ELA teachers and their coach brainstormed the optimal method of building additional essay practice into the current *To Kill A Mockingbird* unit.

> Coach: For example, if you're going to teach with open ended responses about *To Kill A Mockingbird*, one of the questions that I need to ask is if they are going to need more essay work?
>
> Teacher 1: I could put more persuasive essay work into the classwork but then they are going to have to complete more of the reading independently at home.
>
> Teacher 2: What if you speed up the reading by supplementing with some of the video?
>
> Teacher 1: Yeah they love that.
>
> Coach: If you do that then you can add a week-long persuasive writing unit right before the NJ ASK.

With all the protocols in front of them, the conversations between teachers often jump between talking about small group interventions, whole class approaches and priority standards (Figures 4, 6 & 7).

In the following interaction, the coach identified a standard on which students had difficulty in the recent benchmark assessment and together members of the ELA department developed strategies to remediate this skill.

> Coach: They weren't able to differentiate the difference between the reader's point of view and the author's point of view.

Teacher 3: Doesn't that come up in *To Kill A Mockingbird*?

Teacher 1: Yes.

Coach: Well than that's a great way to teach authentically – to differentiate between what Scout's view is versus the author's view.

Teacher 1: I don't have it in here in the plan but I don't see why it couldn't be.

Teacher 2: The trial scene is a great place to do it because the character's understanding of what's going on is so different from the readers understanding.

Also, on this data day the members of the ELA department looked at assessment results beyond their own class and grade. As a community of practice, these teachers collectively identified a weakness in vocabulary that spanned multiple grade levels. Traditionally vocabulary had been taught in context but one teacher shared "recent research showed that 60% of the words students need cannot be learned from context clues." After a conversation about the research in general, the teachers discussed how they would better address the vocabulary acquisition.

> Linda: With what we were talking about the students read the question and not knowing the definition of the one word in the question chose the totally opposite answer.
>
> Daniel: So scary
>
> Annie: One of the things this is telling us though is that we have to figure out how to support all of the teachers in having time for vocabulary instruction next year
>
> Sarah: It's either the question's structure or vocabulary words they are not familiar with. That's because in the last four years they only had specific vocabulary instruction in sixth grade
>
> Daniel: It's hard to say, when you already have plans, like I'm going to take this out of my plans to put vocabulary in.
>
> Linda: Maybe we need to do what the math department does next year and have a few minutes of pull out time each week to do vocabulary?

The ELA teachers also spanned grade levels when they discussed the prior knowledge students were bringing from one grade to another. The data showed that the eighth grade students had difficulty with the literary term *illusion*. Questions on their assessment should have been easy for the students had they mastered *illusion* when it was taught in seventh grade.

> Teacher 1: Whether or not they are going to get it (the answer) depends on their prior knowledge. There is one that if you know what an illusion is then it's easy.
>
> Teacher 2: They should have mastered that in 7th grade when I taught it.
>
> Coach: Then it should have just been review.
>
> Teacher 1: I'll provide exposure to the word by putting it in warm-ups with enough context that they know when it fits.

By the end of the department meetings on data day, members of the math and ELA departments have talked through the assessment data and had time to get a jump start on developing the reteaching plans. It is expected that the teachers will complete these plans on their own time and turn them in to their coach soon after.

The processes through which the departmental communities engaged with the interim assessment data, illustrates the top-down nature of the DDI process at TEAM. The administratively developed protocols dictate the structure of the work groups, the data analyzed, the nature of the analysis and the direction that teacher instruction will follow in response to this review of data. The conversations in the communities of practice on data day are not random; they are guided by the protocols. Nothing is left to chance.

Coaching Session. The consistent presence and support of an instructional coach can create the environment necessary to support individual teacher growth in practice

and, as an output, improved student achievement. The most comprehensive study on coaching was conducted in 2004 by the Annenberg Foundation for Education Reform and concluded that

> Effective coaching encourages collaborative, reflective practice. Coaching allows teachers to apply their learning more deeply, frequently and consistently than teachers working alone. Coaching supports teachers to improve their capacity to reflect and apply their learning to their work with students and also in their work with each other (Aguilar, 2013, p. 8)

As mentioned previously, there are 5 instructional coaches at TEAM. The majority of their work is conducted within two of the communities of practice at the school – the departmental community on data day and the one-on-one work sessions with teachers which occur both during and outside of data days.

At the same time as teachers meet in their departmental meetings perusing and talking about findings in their data, the coaches pull them aside individually for a one-on-one coaching session which lasts between fifteen and thirty minutes. The purpose of these sessions is to touch base with each teacher individually regarding their data analysis and related instructional planning. The coach guides the discussion by asking probing questions regarding the data analysis and how the teacher is using the analysis to plan instruction. David an ELA teacher explained this process as

You meet with your coach to debrief and he or she guides you in what development you might need with the data. They've looked at your data too and so they're arriving to the conversation with their thoughts as well. And I think that's also a form of professional development, because every time I meet with my coach she notices things that I never noticed about my data.

In a math coaching session during data day, a first year teacher asked for guidance regarding teaching students how to best approach open-ended math problems.

> Teacher: What are some things that have been done in the past to really build stamina in students and not just problem solving but when you don't know?
>
> Coach: What to do when you don't know? What do you mean?
>
> Teacher: With open-ended [questions], it's really confusing. What do you teach?
>
> Coach: I've always told my kids that they need to, at a minimum try to begin somewhere, write something to get that one point (on the rubric). You can't get three, but you can at least get one that indicates that you have a minimal understanding with what the question is asking you to do. You have to start somewhere. I always tell them 'Write something, even if you have no clue where it is going to end but you know you have to start with, say these two numbers'.
>
> Teacher: Ok, that's good. I was going to ask Lindsey because we were grading open-ended questions and I was thinking they (students) can never get three points (on the rubric) which always says ' Show and explain your work' if the first two parts of the problem are wrong.
>
> Coach: Even with an error you can still get a three. Say you just multiply two and three wrong but everything you did up to that point was absolutely correct. The process was right but the number may be wrong.

Later in that same department meeting another coaching session focused on how to address targeted objectives identified in the data. In this case the department head is also the coach

> Teacher: Should I do what I did the last two times – start looking where I open the warm-ups and the exit tickets to test them on it separately? The old stuff?
>
> Coach: I started doing that where we had some current material and then the last page is something we did weeks ago. I have also revised my warm-up based on what I saw at another school. When I first started, warm-ups used to be what we were doing the day before. Now they get one sheet for the week with a warm-up for each day on old stuff.
>
> Teacher: It all spirals?
>
> Coach: Yeah.

Teacher: What happens if they go ahead and finish it all in the first day?

Coach: They aren't allowed to.

Teacher: They get a consequence?

Coach: They get a negative mark on their sheet if I see, say Tuesday is done and it's Monday. They get it. It only takes one.

As mentioned previously, Annie, the director of curriculum also serves as ELA coach. In her role as coach, on data day she worked with a third year teacher on structuring questions to better prepare students in the area of textual evidence.

Teacher: While I was looking through the Laramie stuff (An ELA unit focused on the theme of tolerance) – there are these assessments earlier in the unit and the four standards there are the ones they (students) did poorly on in this benchmark.

Coach: That's exciting.

Teacher: Yeah and there are four narrative texts on this assessment. (Pause) It's just… I don't think that I still really know how to teach reading. How to be sure that I am confident that they can do this before assessing it? We are doing it every day and they have to pull words from the text and make an inference.

Coach: Textual Evidence. Okay so some of my ideas are going to come from the same things that I was talking to Manuel about, which is that sometimes it can be more rigorous to have some of the same answers there for kids to be choosing from instead of leaving all of the answers open ended because you don't have control over who is going to be thinking deeply and who is going to come up with a shallow analysis. So I can definitely get you some examples from David's lesson to support this as well but… Instead of saying who can find some evidence to support this? You give them direction and pieces of evidence and ask them which best supports this and why?

Teacher: Yeah I tried something like that today asking them 'Which one shows the strongest bias?'

Coach: It also helps you clarify misconceptions because if one of the choices is way off and someone chooses that – you know which direction their thinking is going in.

In these smaller communities of practice on data day, the coach has the opportunity to ensure the teacher's plans for instruction are responsive and realistic to the goals s/he has identified from the data.

Still in the departmental groups and armed with ideas garnered during the collaborative exchanges with peers and their coach, teachers begin to map out six-week reteach plans on a printed out calendar. Annie spoke of why it's important to do this planning on data day.

> Teachers will have an extra two hours to actually start working on their plans. We found out that what happens is teachers analyze the data and then start to map out on the calendar 'Ok this is when I want to teach this' and then the best laid plans go awry. They get busy and have no time to actually complete the reteach lesson plans. So our hope is that this afternoon they will be able to get their six-week plan into practice by having the time to actually start developing the lesson for it.

Despite the highly structured nature of the DDI process on data days, the teachers did not view the process as top-down. David explains

> There is leadership there in the sense that your coach will check in with you and will ask to see your action plan for re-teaching. The way that you're coming up with the plans and how to use data really depends on the relationships between teachers.

Maintaining a DDI Focus Between Data Days

In addition to the data days, there are a number of COPs operating within TEAM to ensure that teachers and leaders are thinking about assessment data in relation to instruction throughout the year. These were described by both the Director of Instruction and the teachers. For example, department meetings take place weekly at the school between 4:30 pm and 6:15 pm. Although the department meetings are used for multiple purposes, one focus is to grade the interim assessments. Annie finds the conversations

that take place between teachers during this time more important that the time devoted to analyzing the benchmark data on data days.

> So the grading happens together, which, in my mind, is the most important. The data is one thing but looking at student work… tells you a lot more than the numbers. Last Monday, for example, all the science teachers from TEAM and RISE worked together in the same room, norming and co-grading the open-ended responses on the science interim. The writing teachers from the same grade level were in a room doing the same. So they're talking through, "OK, I think this one is a 3. I think this one is a 4 because..." "Oh yeah, it really is a 4." "Wow! Look what your student did! How did you get your student to do that?" So I think a lot of the really important conversations about data, happened informally last week when they were actually looking at the student work.

Teachers also meet weekly in grade level teams. Some of this time is used to discuss evidence provided by exit tickets, classwork, weekly assessments, etc. in terms of student academic growth. Teachers can use this time to look across subject matter and describe trends. Individual student or cohort successes or areas of concern are also identified and discussed.

There is general agreement that educators need more knowledge, skills, practice and support after they enter the profession, however, there is no consensus regarding the optimum way to provide professional development. A common professional development strategy is the use of instructional coaches (Love et al., 2008; Means, Padilla & Gallagher, 2010; Young, 2008). At TEAM, coaching sessions do not only occur during data days as previously discussed, these teacher – administrator collaborative exchanges also happen during weekly or biweekly coaching sessions. These 45 minute meetings are referred to as "One-on-Ones" (O3s). Annie describes the protocol for each O3 meeting as follows:

- Personal check in (for relationship building)
- Share agendas
- Coach's items

- Teacher's items
- Gradebook health/weekly data review
- Coaching and practice on Focus Area of development
- Summarize coach and teacher action steps for the next week

The O3s begin with a nurturing of the personal connection between coach and teacher. True of a collaborative process, each participant presents any items they want to discuss or share. Then the focus turns to DDI in terms of weekly data review. Together the coach and teacher examine the data generated from that week's student work and formative assessments. Next the prescribed approach to data infiltrates the work of the coaching process in that for the "coaching" session, every teacher has three focus areas of development situated in the KIPP Framework for Excellent Teaching (KFET); another aspect of the KIPP toolkit. Focus Areas are diagnosed by the teacher and coach together, based on what both agree are key levers for increasing student achievement as determined by data from a variety of sources (i.e. teacher performance goals, interim assessments). For each six to ten week period, a teacher is working on one, bite-sized goal until mastery, and then moving onto a new goal within that Focus Area or in another Focus Area. If a teacher has a planning goal, he/she receives weekly lesson plan feedback from the coach aligned with that goal.

One of the things Annie shared was that the coaches look for any disconnect between students' classwork grades based on teacher developed assessments and their grades on the interim assessments. During one of the individual coaching sessions Annie worked with a sixth grade teacher.

> Okay, your grade book is showing that you have 90% of your kids above a grade of 70 and then your interim is showing a proficiency rate of 75%. There is a disconnect. Is it a spiraling issue? Are the students mastering that week on your quizzes because that's what you just taught? But then when it's thrown in with everything else they forget and can't show proficiency? Is it a retention issue or a

> rigor issue? Is the level of your assessments at the level of rigor of the interim? Let's pull up the tracker and look at what we think it is.

Annie was challenging the teacher's thinking; probing her to critically examine possible relationships between her classroom assessments and interim assessments.

Marsh and Farrell (forthcoming) in their summary of a year-long comparative case study in 6 low-income secondary schools, suggest that coaches enhance DDI implementation in that as they share their expertise in data use they support teacher work around data analysis. In addition, their content area expertise has been found to be particularly important to bridging the "knowing-doing" gap thus helping teachers select instructional responses to data. This is an accurate descriptor of what Annie and the other coaches at TEAM do on data days and in regular coaching meetings. Although at TEAM only two people comprise the coaching COP, these coaching sessions provide specific guidance on interpreting and using data. Coaching addresses TEAM's core value of ensuring every student succeeds by ensuring the work of instructional improvement is carefully scaffolded and monitored.

Informal Communities of Practice

In addition to the communities of practice that are organized and structured by the TEAM leadership, the teachers also described how they interact with other teachers in the school and these interactions are a form of instructional support. Adam explained

> It think there's the more formal structures of the departments and in the grade teams, but at the same time there's also more informal relationships of just shooting emails. "Do you have this? Do you have something like this? Can I see what you've done with this?" that type of thing outside of like scheduled meetings.

The time for collaboration scheduled by administration is so highly structured yet teachers reported finding benefits from additional informal collaboration. David describes it as follows

> We really don't have an opportunity for us to share what we're teaching and to build on what your predecessor has taught. That's like a more informal collaboration or an update of like, "Hey Adam, what are you doing in 7th grade in the next six weeks?" "Oh you're teaching symbolism? Here's what I've taught. Here's how I've taught symbolism in 6th grade. Here's how Audrey taught it in 5th grade."

In these spontaneous communities of practice the composition of the group varies depending on what the issue is. Teachers do not always informally collaborate with the same individuals and the networking sometimes is between teachers but at other times crosses to those in formal leadership roles. David described it this way,

> When it comes to (questions about) culture I would say it's more across disciplines. When it comes to (questions about) content then definitely collaboration takes place within departments and then within departments across (TEAM) schools as well… Annie's also my coach but I think when motivating (students) the first person I think of going to is a fellow teacher on my grade level who also happens to be a really close friend of mine. And so she's my first go-to person and between the two of us I work out what I'm going to do or how I'm going to approach the situation. And then with data, I mean, Miguel and I have the unique relationship this year of working as partner teachers and so he was my go-to person if there was something off with data, or he would bring something to my attention and together we would figure it out. So I think it does vary from grade level to grade level.

So, whom teachers turn to in their informal communities of practice is a function of the issue at hand and a peer's expertise and personality more so than an individual's formal role. As true communities of practice, these informal exchanges are opportunities for learning to occur through the interactions of the members of the community wherein more experienced members pass on their knowledge to those on the periphery.

A Culture of Collaboration Around Data

Although nothing in any of the specific exchanges during the work of the communities of practice is surprising or awe-inspiring in and of itself, what is significant is that these conversations are taking place on a regular basis. DDI is expected in TEAM Academy and the top down and prescribed nature of the use of data is supported through the provision of resources and supports so teachers and leaders can engage with data. While some might argue that the intentional and directive organization of teacher time to DDI might be in opposition to an organic view of communities of practice, the teachers at TEAM believe that the work that takes place in COPs is under their direction and design. As David puts it

> the school leadership has designated the composition of the COP based on grade level groups and departmental groups. However they definitely give us the space to do data work and we're just kind of using that time…the structure of like a day-to-day that you observe, that framework is created by leadership, and then we are just kind of charged with executing it however we see fit."

Although the teachers feel free to plan the whole group lessons, small group interventions and other remediations necessary to address trends and individual data, the implementation of these reteach plans is closely monitored by administration through weekly lesson plan review and walkthroughs.

However, despite the benefits from collaboration around data for the purposes of student achievement, a constant data mindset can be stressful. Adam explained it this way.

> I think using data is definitely integral to teaching and learning. I think it's always a challenge to use it consistently and to use it well. I think that when you're planning for your own classroom it always has to be present in the planning. But it's definitely difficult, at least for me, to always have it be present in my mind when I'm thinking through what a day's going to look like, just because it's easy for me to get lost in it and trying to make a bunch of different groups and figure out how I'm going to hit all of the objectives when we're looking at the data, and at the same time planning through an actual unit.

Moreover, some teachers reported that there is not enough time to do everything. In David's words

> I think the biggest enemy to anyone really is time. There are times when it's like I'm isolated but it isn't because I'm trying to keep my thoughts or things private. It's just like I haven't had the time to share anything.

Adam and Miguel concurred. Similar to Annie's statement of the need to allocate time for lesson planning in the data day, Miguel added that despite the time allocated for collaborative practices he finds it so beneficial that he wishes there was even more time for planning with his peers.

> I think collaboration happens when there's an obvious overlap in a skill set. For example, in 6th grade science we started to annotate nonfiction text. So the students were able to transfer that skill from reading class over to science. In social studies they were beginning to present so a lot of the skills that they use for presentation in reading class were also demanded in their social studies class. So I think it would be helpful to have definite planning time for collaboration so that we can anticipate those overlaps earlier on and have criteria for success for it so the transfer is across all disciplines.

The administration of TEAM has dictated the membership of most COPs, the time they meet and the protocols guiding their work, yet the findings of this study supports that teachers are committed to a common purpose and growth mindset and therefore gladly work within these structured groups. Deal and Peterson (1999) state that "in schools that embrace norms of performance, change and efficacy, staff gladly experiment with new approaches, seek innovative practices to solve enduring problems, and reinforce a learning-focused vision for the school" (p. 8). The openness for dialogue and communication between staff at TEAM is a direct reflection of the school culture and shared values in that there is a pervasive mentality that staff will do whatever it takes to get their students into college. The allocation of both personnel and time is reflective of this. Rooted in a school culture which encourages learning and growth, the administration

and teachers at TEAM support a culture of purposeful change and growth as David explains,

> I would put a lot of weight in the culture…We own our results but I never feel like I'm competing against anyone at TEAM Academy. I think that helps make it a safe place where I'm able to make mistakes. I feel like we can collaborate and share openly when we know something and when we don't know something admit it outright.

Trying to describe what the difference is compared to other public schools Miguel said

> I am newer at TEAM and I think that it might be ironic, but I think that there's a way to present conflict that will reinforce a team… And in the end students are prioritized as our main stakeholders. We're doing this for the kids and I think when conflict is presented with children in mind it's easy for us to be a unified front or share or be honest about things. I see that modeled a lot with some of the more seasoned teachers and I recognize that we have to be that way for kids, we have to compromise to work together for kids so that the end product is always for students. That honest conflict is what I think helps get us there.

The DDI culture at TEAM is such that an open environment exists where teachers are comfortable asking for help and providing advice. No one individual is looking for answers in isolation; rather they are learning and growing in their practice through social interactions with one another and supported by an organizational culture that allows them time to do so.

The Red Bank Charter School

> *Walking up to the entrance of The Red Bank Charter School (RBCS) one is immediately taken by the dichotomy of a century home on the right joined by a modern entranceway to a former schoolhouse once restaurant on the left. The history of how the school leadership and community rallied to literally parade the 1865 Victorian home through town to its new home is indicative of the tenacity to "do what is needed" and "get it right" at RBCS.*
>
> *A feeling of excitement washes over a visitor who is greeted by the vibrant lime green walls of the foyer and halls of RBCS. Melanie, the school principal explained the rationale for the color choice as, "I wanted the color to work with the natural energy of children. Not work against it". The school is a celebration*

> *of the children and their work: pictures of every student hang from the ceiling declaring "I am a child of the world" from the celebration of International Day; trophies mark victories in athletics over the rival, local traditional public school; homemade, decorated ceramic tiles adorn the walls representing every family who has been a part of RBCS. These are just some of many indications that the children are at the crux of all decisions here.*

Everything at The Red Bank Charter School (RBCS) is about – the child. The brightly colored walls, the garden, the teacher who was encouraged to get a commercial drivers license so he could drive the mini school bus as a coach, and the after-hours community functions and celebrations: all for the children. Since Melanie became school principal in 1999, one year after the school was founded the "children" at RBCS are everyone's children. The distinction between the 195 children of different grade levels exists only in the classroom. As one of the teachers said, "Our work starts with owning every child." Another teacher said, "If you see the sixth graders acting up, it's not 'Those stinkin' sixth graders. It's ***our*** stinkin' sixth graders."

The mission of the school reflects this focus on the whole child with its emphasis on both individual, community, and group behavior. It states, "The Red Bank Charter School believes that celebrating individuality, appreciating cultural diversity, mastering conflict resolution, and insisting on accountability by all is a foundation for good citizenship" (Red Bank Charter School, 2012). Three "bedrock beliefs" serve as the foundation for putting this mission into action at the school. Paramount is the belief that all children can learn. Teachers and students alike are held accountable for the academic success of all students. The other two beliefs address social issues: the desire for students to care for themselves and one another and that students should contribute to the greater community.

Observations and interviews indicate that the members of the school community actively support the mission. Melanie shared her thoughts on how she works to maintain the shared mission:

> Yes a leader starts the shared culture with a mission you believe in. That ship sailed a long time ago. We hire people who we expect to embrace the culture or we say if you're choosing us, this is what you have chosen. Don't come in and try to change us.

When hiring new staff, the fit of the candidate with the RBCS culture is of prime importance. Melanie uses an inventory to gauge the candidate's self-awareness, which she says is based on research and indicates that "the more self-aware a teacher is, regardless of their skills, the better the student achievement."

It doesn't take long for an observer to realize that the school principal, Melanie, is the driving force behind the school culture and academic achievements of The Red Bank Charter School. She has high expectations for everyone in the school community – students, staff, and parents – and does whatever is required to ensure that everyone is able to meet those expectations. One teacher explained it this way,

> At times when I am so exhausted I'm like, "I can't. I can't even". Then she'll (Melanie) say one thing and I'll be like "Yeah she is right". She has an expectation and yes it's hard and you get tired but then she will say something to remind you like "You can do it" or "We need this" or "It's for the child". That's it. You do it.

To ensure that the mission of RBCS is achieved, all sorts of data inform the instructional decision-making of teachers, and administrators at RBCS.

Data Driven Decision Making at RBCS

"Data is ingrained in us"
– Lisa, RBCS ELA Teacher

> *"Assessing to teach rather than teaching to assess,"that's been our motto for 15 years. To assess to teach you need to collect data. The outcome will be a pattern*

> *of student success and the process will be dependable because we know the end point and we know the way we are getting there.*
>
> *– Melanie, Principal, Red Bank Charter School*

Some schools espouse a data culture but at RBCS data ***is*** the culture. Data adorns the walls of every classroom. For example, charts and graphs describe data students have collected about the number of books read, the number of items donated during a recent service learning project, or how the newly-hatched chicks are growing. The data walls at RBCS are colorful and engage the eye, attracting student interest. Students are involved in collecting the data and in helping teachers prepare the displays. Data relating to student achievement is not displayed, but is communicated between stakeholders through other methods which will be discussed in this chapter.

To ensure that the mission of the school is achieved, a systems approach is used. Peter Senge's theory of systems thinking, presented in *The Fifth Discipline* (2006), proposes that schools are organizations that can learn. He states:

> We tend to focus on snapshots of isolated parts of the system, and wonder why our deepest problems never get solved. Systems thinking is a conceptual framework, a body of knowledge and tools… to make the full patterns clearer and to help us see how to change them effectively (Senge, 2006, p. 7).

A systems perspective allows educators to look holistically at the school as an organization and to consider which parts of the system are not working well in contributing to the mission. Data is central to this work. In their desire to ensure that the three core beliefs are achieved, Melanie and her teachers have created a culture that generates, uses, and communicates data.

Generating Data

The pervasive use of data to make decisions, both instructional and non-instructional, relies on various forms of data collection. Each data collection tool is

carefully selected by the administration and teachers collaboratively in order to provide specific information. Some of the more significant data collection tools employed are listed in Table 5 and described in more detail in subsequent sections.

Table 5

Sources of Data at Red Bank Charter School

Summative Assessment	
Name of Assessment	**Frequency**
NJ ASK	Annually
Benchmark / Interim Assessment	
Name of Assessment	**Frequency**
Achievement Network (A Net) (Measuring Up as of 2014)	Quarterly
Formative Assessments	
Name of Assessment	**Purpose of Assessment**
Character Education Survey	Quarterly Measure of Culture
Other Surveys: Dress Code, Lunch, etc.	As Needed
Anecdotal Observations	Daily Notes for Feedback to Parents in the Charter Chat
Study Island	Measure Progress / Remediate in ELA and Math (3^{rd} – 8^{th} Gr.) / Science (8^{th} Gr.)
STAMP Assessment	Proficiency Measure for Foreign Languages
Columbia Reading Assessment	Identify Reading Level of Students
Embedded Assessments in Math Curriculum	Mastery of Skills & Objectives
Embedded Assessments in Pre-K Creative Curriculum	Mastery of Skills & Objectives
Homegrown Assessments for STEAM Program (Science, Technology, Engineering, Art and Math)	Mastery of Skills & Objectives of Integrated Curriculum

Several of the data sources in Table 5, such as the Achievement Network benchmark assessment (ANet), are purchased from vendors and have a direct focus on

student achievement. ANet is the tool administered quarterly to gauge student progress in mastering the standards. Study Island is used for individual remediation and practice, but teachers also compare student progress in Study Island to ANet results looking for areas of disconnect in student achievement that may require additional attention. Other assessments are embedded in the curriculum (e.g. Math and pre-K) and are useful in tracking student progress. Irene, the Director of Curriculum, describes how they use this type of data:

> Academically, one of our goals is to improve instruction for the children and give them what they need so that we're not teaching information to them that maybe they already know. We are able to hone in so they can go further, faster. We also can remediate if there is something that they should have learned already. We are able to streamline the academic program for the students so that it is appropriate and meets them at their ability level.

RBCS is unique in that in addition to these assessments focused on achievement of discrete skills, data is also generated daily by teachers. One reason teachers generate data, according to the principal, is because the school's emphasis is on developing the whole child and a community of learners. Therefore, data has to be collected on more than academic achievement as Melanie explains:

> We use the data to direct whole-group instruction, small-group instruction, and individual student instruction. We look for patterns among the data that might indicate certain students or clusters of students with certain learning styles are potentially struggling or excelling and then we can make adjustments to key in not just with the materials but also the way we teach it…We call everything data – our school culture surveys, our lunch and uniform surveys. We are a data-driven school. It's much broader than academics.

One way the teachers collect this kind of data is through surveys of the entire school community. These surveys are administered on a regular basis to measure the climate or opinions of the community. Non-academic in focus, these surveys are sources of additional data and provide information on other dimensions which support students'

personal development. One such example is the homegrown character education survey administered each quarter to all members of the school community (Appendix D). Victor, a middle school science and social studies teacher, explains why they collect this data:

> We take a pulse on the feelings of every student – how they feel in the hallways, on the playground and within the community of their classroom. We ask if they feel that they are listened to, if their opinions are respected, if they feel safe with the teachers. If someone doesn't feel too comfortable then we can address it individually or as a whole class.

To ensure every child participates, teachers read each question individually to those students too young to read the survey. These students respond by selecting one of three faces: smiley face, frown, or a neutral expression.

Additional surveys are administered when the staff identifies a pressing concern and they want to get an accurate picture of the situation as an ELA teacher explains,

> We gave one about the cafeteria, too. In that one we asked how the staff and students like the recent changes in the lunch – portion size, aesthetic appeal – and there was a comments section. We just did a uniform survey, too.

At RBCS where data is the culture, the community has overcome initial fears and resistance and embraced the use of data for information. Data is collected by various measures and multiple stakeholders. Melanie summed up the school's approach to data

> You've got to do what's best for the students, put that (fear and resistance) aside, whatever it takes to help your students. I believe that data use has been the key to our success. If I had to pick one thing, it's establishing the data culture.

Using Data

Data is analyzed and used in a myriad of ways at RBCS by leaders, teachers and even children, because of the way the leadership distributes the work to involve the school community. The distributed leadership approach ensures that communities of

practice occur in a variety of ways, oftentimes unseen, but most often visible through quarterly data days.

Distributing Leadership for Data Use. According to Melanie and Irene, the culture of the school was not always ripe for using data to make decisions. The national emphasis on accountability for student assessment results added additional pressure on teachers. The teachers' instinctive response to looking at student data was to become fearful and self-conscious if their students did not do well. Irene shared:

> It was hard in a school where there is only one class per grade, if those (assessment) results were not as robust as we would have wanted for the children. We needed to get across that it wasn't a pox on you teacher, but rather let's analyze how we could have made adjustments earlier or used multiple intelligences to get through to those kids.

The mindset had to become one where they could accept the data as a means to their student achievement goals.

To overcome initial resistance Melanie and Irene reported that they dedicated a considerable amount of their time working with teachers to helping them analyze data and developing reteach plans or plans for instruction based on standards that were not mastered according to the current data. Melanie shared:

> We found that we had to invest in professional development, and not in a rushed way, to really say, "We are going to all learn this together". With a lot of support we were able to get everyone to operate from a premise of every teacher impacts the outcomes of every child.

Irene added:

> We invested a lot of time and energy in professional development, helping teachers to embrace the concept of working with data and collecting data for information, not for fear, and they very much appreciate it and have come to depend on it for a sense of support.

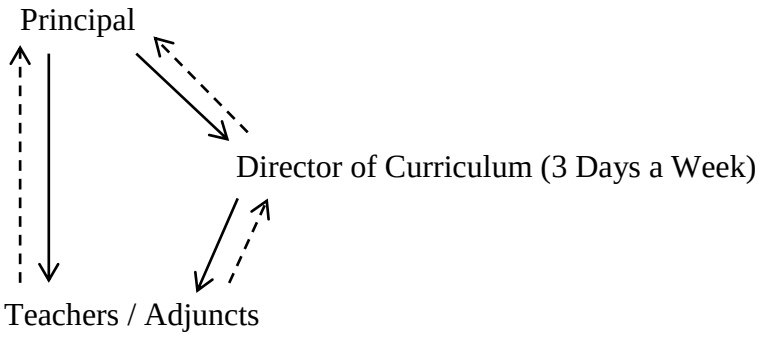
In addition to this professional development, the administration team has also implemented an organizational structure in which leadership for data use is shared. According to Jones, Harvey, LeFoe & Ryland (2012), distributed leadership:

> is a leadership approach in which collaborative work is undertaken between individuals who trust and respect each other's contribution. It happens most effectively when people at all levels engage in action, accepting leadership in their particular areas of expertise (p.61).

Referring back to the Margaret Spellings maxim that "what gets measured gets done" most administrators have employed practices that increase their time in the classroom, such as walkthroughs or more frequent observations to ensure that data is driving instruction. In contrast, Melanie and Irene have carefully developed a culture where teachers have a lot of ownership and say in how and when data is collected and analyzed. This distributed model is enacted through a lean organizational structure (see Figure 8).

Figure 8

Red Bank Charter School Organizational Chart



The Board of Trustees and administration of RBCS concentrates the school's fiscal resources on instructional staff. Melanie serves in the capacity of chief school administrator and principal. The only other administrator, Irene, is the Director of

Curriculum who works three days a week. Both Melanie and Irene oversee the teachers but are receptive to suggestions and feedback from the teaching staff.

Maria the language teacher and disciplinarian for the school explains how the teaching staff is organized: "We work in teaching teams. There is one teacher and an adjunct in each classroom except in the Pre-K classroom that has three. We are very low on administration and very high on teaching, that's been the emphasis." The job description for the adjunct staff member specifies that the individual need only a substitute certificate; however, at this time all adjuncts are certified teachers as well. The other full-time staff includes two basic skills instructors, one physical education/health teacher, one special education teacher and one world language teacher. Part-time teachers provide instruction in art and music. In total, RBCS has 24 full-time and 2 part-time teachers for a teacher to student ratio of 1 teacher to every 9 students grades K-8. By comparison the state average for the same grade span is 12.4 students: 1 teacher (New Jersey Department of Education, 2013b).

To ensure that leadership is distributed for "efficiency and effectiveness" (Mayrowetz, 2008, p. 429), various teachers have been assigned roles in addition to their teaching responsibilities. For example, when Maria described her work for the school it was as if she had trouble remembering the various hats she wore:

> I teach Italian to sixth, seventh and eighth grades, and character education to those grades as well. I also teach adult literacy to the parents and oversee discipline for the school. Oh, I go into social studies to assist and music and Spanish, too. I also oversee the Study Buddies from 3 pm to 5 pm.

When introducing himself, Vern said, "I teach sixth, seventh and eighth-grade science, sixth-grade social studies, robotics, agriculture and whatever else they need. I do a program called River Rangers and that's it." However, like Maria, he realized there was

more and after a brief pause added "and I coach every sport and I coordinate the National Junior Honor Society too." Maria and Vern are perfect examples of how things get done at RBCS.

This distributed model of leadership does not mean that Melanie is not a presence in the school. In fact, Keri, a middle-school math teacher, said, "I don't know how she (Melanie) does it. I think she has sets of eyes in all the rooms. She seems to know everything that goes on." In addition to being aware of instructional happenings, teachers say that Melanie provides them the support they need even when they don't know they need it. Julie spoke for the group by saying:

> I want to say that every one of us has that sense that if there is something that you see in yourself that you know can be bettered, you go see Melanie. She'll hear you and then give you exactly what you need.

Maria adds, "She knows her people, she knows us. She knows our strengths, she knows our weaknesses. She knows us and can read right into us." What Melanie often sees in her teachers is an unbroached talent; one that she expertly accesses to better the school community. At RBCS Melanie is noted for having a knack of tapping the expertise of her staff. One teacher described Melanie's skill at distributing leadership tasks as:

> I think wherever the need is we're asked can anyone do this or that. I think Melanie has an eye for what we are capable of doing and she knows what our strengths are.

Studies of distributed leadership demonstrate that increased participation of individuals, not traditionally in leadership roles, provides fresh insights and energy to the work of the school (Copland, 2003, Spillane, et al, 2004). The assignment of responsibilities across staff, not dependent on formal roles but rather the nature of the task and the skill set of the individual, strengthens reform implementation (Copland,

2003; Elmore, 2003). By involving her teaching staff in taking on various leadership roles, Melanie asserts that the school community shares a mission, and has matured to a distributed sense of accountability and responsibility across all members, so that the changes and growth she has spearheaded will continue long after she moves on. In her words, "I could walk out of here tomorrow and not come back and because our objective was to have teachers self-police…to make a systemic culture…I'm telling you I have full confidence it will continue."

Communities of Practice at RBCS

> *This data movement requires a whole new teacher culture. Our teachers are so quick to say "I suck at the fraction thing and you are so good at it. Can I come watch you?" versus,"You do that better and that might mean that you are going to get better scores than I am." The movement to this culture is one of the largest social changes that we could expect for our industry. For our industry the worst thing is that someone could risk the most important client – our children – by saying "Dummy down so we can look good."*
>
> *Melanie, Principal, Red Bank Charter School*

The teacher culture and growth mindset Melanie refers to is demonstrated in the collaboration that takes place in RBCS communities of practice. Researchers have found that teachers have better results when they solve problems together and rely on one another (Timperly, Annan & Robinson, 2009; Wohlstetter, Datnow & Park, 2008). Interactions within a collaborative context encourage members with different experiences and perspectives to learn from more knowledgeable others (Lave & Wenger, 1991).Teacher collaboration occurs in almost every aspect of RBCS. The physical and social arrangement of teachers and students in the building supports this collaborative decision-making. For example, the classrooms corresponding to the grade levels in each cluster are located physically near one another in the school building. As Julie, a middle

school teacher, said, "We can't help but bump into one another." Similarly, the team-teaching model means that teachers have to collaborate, as Keri explains:

> There is always dialogue going on. Did you see what happened here? When you are up in the front of the room you can't always pick up on something a student needs. When you have someone walking around the room, and you take turns doing that, you get to see it from a different perspective.

This culture of collaboration is also evident in the ways teachers ask to observe one another. Victor, a sixth-grade teacher, said, "I had a conversation with Lisa in the hallway and she said, 'We are going to be doing this activity about *The Outsiders*, why don't you come and see.'" Maria shared that when she was assigned to provide basic skills push-in for a class she "went into the classroom to see what they had been providing when they pulled a student out. I followed what the teachers had been doing so I was reinforcing the skills, not making up new things."

As data is integral to the school culture, many exchanges between teachers are concerned with some form of data analysis and reflection. Victor shared, "There's a lot of data sharing even though it's probably not all documented. It's going on all of the time." Teachers went on to describe that they talk about the needs of students while walking into the school from their cars, while eating lunch or during impromptu encounters in the halls. These informal exchanges provide a forum for constant collaboration and exchange in between the meetings of the formal communities of practice.

At RBCS, there are several opportunities throughout the day and school year for teachers to collaborate in communities of practice. In implementing DDI, the administration of RBCS has structured these work groups to provide opportunity for collaboration around the data: places where organizational and individual learning and growth can take place. With the emphasis on data, one might expect highly-structured

formal communities of practice; however, in actuality the COPs are less formal and have few structured protocols. Table 6 lists the communities of practice, how often they meet and some of the types of data they examine.

Table 6

Red Bank Charter School Communities of Practice

Collaborative Forum	Participants	Frequency of Meetings	Data Used
Formal Communities of Practice			
Data Day Analysis	Principal, Director of Curriculum, Teachers, Adjuncts	Quarterly	Assessments ANet NJASK
Learner In Progress Meetings	Teachers, Parents & Students	Quarterly	Report Cards, Quarterly Goals, Classwork. Assessments
Cluster Meetings	Teachers & Adjuncts	Weekly	Weekly Assessments Exit Tickets Report Card Indicators LIP Goals Content Specific Assessments
Faculty Meetings	Principal, Director of Curriculum, Teachers	Biweekly	Subject Specific Assessments Formative Assessments Surveys
Informal Communities of Practice			
Team Teaching	Teacher & Adjunct	Daily	Lesson Plans Gradebook Interim Assessments Subject Specific LIP Goals Assessments ANet NJASK
Face to Face Meetings	Teachers & Adjuncts	As Desired	Lesson Plans Gradebook Weekly Assessments Exit Tickets Report Card Indicators Interim Assessments Subject Specific LIP Goals Assessments ANet NJASK

As evident from observation, the structured work with data at RBCS takes place on data days and in LIP meetings. DDI which occurs outside of these assigned times is more nebulous; staff report that it takes place whenever necessary, however it is hard to observe. It appears that some of this work takes place in faculty meetings but more often it occurs in cluster meetings and LIP meetings.

Cluster Meetings

Lave and Wenger (1991) argue that in communities of practice "learning is supported by conversations and stories about problematic and difficult cases" (p. 106). One place where these stories are shared is in the weekly scheduled multi-grade level cluster groups. The three cluster groupings are 6^{th} through 8^{th} grades; 3^{rd} – 5^{th} grades and the lower grades. Julie, a member of the 6^{th} – 8^{th} grade cluster, explains the purpose of the meetings: "Cluster meetings are really used to recap what's going on in the classroom day-to-day. We share data we have gathered on individual students so we can be sure that the students will make it through the year well."

Although cluster meetings were not observed directly in this study, the teachers provided descriptions of the conversations that take place. Max, a fourth grade teacher, reported,

> In the 4^{th} – 6^{th} grade cluster meeting, the fifth grade teacher would say 'Well, you know based on the data there's still a deficiency in division, or there's still a problem with multiplication.' Even though third grade isn't a member of this cluster the information filters down and changes are made.

Vern provided another example:

> Using those same grade levels as examples, the fifth grade teacher could also say 'There's new stuff going on in fifth grade. We are now learning (a particular topic) this way, so where can we bridge it? Where can we cut it off at the pass and infuse more strategies as a foundation?'

At RBCS cluster meetings are regularly scheduled, indicating that opportunities for this vertical articulation is a priority. It is not surprising that the biggest obstacle to the work of these communities of practice is time. Although the meetings are regularly scheduled, often other school responsibilities conflict and teachers must wait until the next week to meet. However, teachers did indicate that if a staff member felt there was a pressing concern, the teachers would be sure to find the time to meet. One teacher shared, "Cluster meetings are really used to recap what is going on with the classroom day-to-day. We were just talking that we have been a little remiss lately and we want to get going again because we're concerned about some students finishing the year strong." When necessary, teachers arrive at school an hour before required or stay well after the day has ended to meet to discuss these issues.

Learner in Progress (LIP) Meetings

Four times a year there is a Learner in Progress meeting of the classroom teacher, student and parent/guardian following the release of quarterly report cards. Typical of any parent teacher conference the assessment data in the report card informs students and parents about academic progress based on multiple data points. However, the Learner in Progress meetings form a community of practice because parents, teachers and students don't just look at the data but use the report card's 61 data points to set goals for the next quarter. For example, a student may offer that she needs to work on providing more textual evidence in her essays or another student may want to work on being kinder to a particular classmate. These goals are aligned to the three school beliefs. Victor, the middle school science and social studies teacher, explains the process

> With each report card, the students and parent meet with the teacher. Everyone weighs in for example saying, "Okay, let's look at what you did really well and

> let's look at what you personally want to work on for the next marking period." Then we write it down; we document it by writing it on the report card. It becomes another measure that we collect data on, hold the student accountable for, and hold us accountable for reinforcing.

To set the year off in the right direction, the first LIP meeting is held the week school opens and subsequent meetings occur after the release of each report card. As Max a fourth-grade teacher said, "The idea is we're all working together. The student knows that we're invested, the parents are invested and we're all communicating."

Data Days

The most formal and visible work with data in communities of practice occurs on data days. Quarterly benchmark assessments are each followed by a data day during which teachers work in grade-level groups to analyze data and plan instruction based on that data. People who teach specials (PE, music, art, etc.) and thus span several grade levels are assigned to a group by Melanie and Irene. The observed data day, the third of the year, was broken into three parts: a general session, departmental work groups, and a group share. In the half-hour general session teachers receive some general information about school events during a "working" lunch. The data work begins immediately afterwards in the departmental work groups.

Departmental work groups. In each departmental group, 5-7 teachers of different grade levels but the same content area are mixed providing opportunity for discussion about how curriculum implementation across grades impacts student achievement data. All adjuncts participate according to their class assignment as well.

Irene distributes packets of data from Achievement Network to each teacher. The packet contains assessments results for all students tested. Assessment data is reported out in the following formats: item analysis by standard, individual student performance

by standard and question analysis. The questions analysis shows the performance of each student on each question of the assessment. It also provides the incorrect answer choices that students selected and therefore its analysis is helpful in looking for misinterpretations or misconceptions of the students. Max, a fourth-grade teacher, explained, "I love the level data from the benchmark. It's like a check-in – where are we? Where are we going? What do we still need to hit that hasn't been hit yet? It serves as a mark for us for informational purposes informing our instruction."

Before the work groups begin looking at the data, Melanie states, "You have done this before and are good at it, so Irene and I will leave you alone." Although they both remain in the room and occasionally circulate amongst the groups, Melanie and Irene never become active participants in any one group. The data work is left to the teachers.

When RBCS first implemented DDI, Irene states that she and Melanie would prepare themselves for data days by completing their own analysis:

> Melanie and I would sit in the office and crunch the numbers ourselves so we knew exactly what the data was saying before we walked into the professional development session with the teachers. We didn't dictate the analysis but rather used our prep work to help us guide teachers in the process.

Lisa, a teacher concurred: "When we first started the data driven instruction process, we were much more formal about the process itself. Our protocols were more specific so we would understand what we needed to do." As DDI was implemented several years ago and a critical mass of teachers remains from the initial training, some of the structured guidance that was provided is no longer used.

In keeping with the distributed nature of leadership at RCBS, administrators have entrusted teachers with the responsibility of using data to challenge their practice and that of their peers while collaborating around data. The only guidance provided to the teachers

are two protocols (see Figures 9 & 10) that ask them to identify skills in need of remediation and then plan instructional strategies or activities to reteach the skills through either whole-group or small-group instruction. Teachers must also record what assessment they will use to measure if the strategy was successful in addressing the need.

Figure 9

Data Analysis Planning Sheet – Whole Class

Whole Class		
Skill / Objective	Instructional Strategies and Activities	Assessment

Figure 10

Data Analysis Planning Sheet – Small Group

Small Group			
Student Names	Skill / Objective	Instructional Strategies and Activities	Assessment

These protocols are not intricate guides detailing time frames and guiding questions for every step in the process. Very simply, they provide a vehicle for reporting out to administration the reteach plans for whole class and how small-group instruction will be used to target other skills.

Despite the lack of structured protocols guiding the data analysis process, the teachers in their departmental teams engage in conversations around the assessment results. In general, they begin their data analysis by searching for the questions on which grade-level cohorts did poorly. Each teacher focuses on results of a specific grade level

looking for trends. Once found, they share the information with the group and then the teachers refer back to the corresponding grade-level assessment to identify the requisite skills needed to arrive at the correct answer. Collaboratively, they discuss these skills and the instructional methods they can employ to reteach the skill. For example, in the math departmental work group a teacher wondered how to teach a skill required for a particular question:

> Teacher 1: Wow, look at (question) number 14.
>
> Teacher 2: Which test?
>
> Teacher 1: Grade 6.
>
> Teacher 3: Is that the one (question) on ordering rational numbers?
>
> Teacher 1: Yes. How could I work on that skill?
>
> Teacher 2: You can have students walk between negative and positive sides of the number line and then give real-life situation that use the numbers. For example – temperature.
>
> Teacher 1: That's helpful…and then I would go back to the original equation.

Teachers continued to brainstorm and share knowledge of instructional practices. Here they provide advice to one another on teaching slope.

> Teacher 1: So questions 14, 20, and 31 are all about slope?
>
> Teacher 2: Are they straight up questions about slope?
>
> Teacher 1: They ask the kids to find the slope of a line.
>
> Teacher 3: This is where you could use the Gizmo. That's what sold me on the Gizmo. It will show the kids the slope of a line. There are great lesson plans on that.
>
> Teacher 2: We created a book of different slopes with colored pencils and ended it by making a circle. The book was the assessment. Student will be able to describe what happens.

> Teacher 1: They need to know more than just the definition or application problems. What they need to understand is the relationship between rise and run. In high school they will need to be able to describe what happens to x when y…
>
> Teacher 2: The rate of change?
>
> Teacher 1: The change of y over the change of x basically; the relationship between x and y.
>
> Teacher 3: Like in this question, they didn't have to know anything about the slope but they did need to understand that the change in y is over the change of x. They needed to know that when y moved 3 this way, x goes down.
>
> Teacher 2: What about using the motion detector. It plugs into the computer and then one student holds it while the other student moves away from it. Then they can see the visual and graph on the computer. As they walk towards the motion detector they can see how their movement changes the relationship between x and y.

In other conversations, teachers discussed how they could assist students in overcoming a lack of prerequisite skills.

> Teacher 1: They didn't visualize what the passage was talking about. They did not have background knowledge to relate it to.
>
> Teacher 2: They are not forming an image in their head. I think the sequence of the language may have thrown them off, too.
>
> Teacher 3: Is all the information really necessary?
>
> Teacher 2: This is where 21st century learners are going. We need to teach them to read across the curriculum and read between the lines.
>
> Teacher 1: We can teach them to draw it out in their minds.
>
> Teacher 2: We were reading so much and some students were getting it, but when I added an emotional description "Isn't she mean?" they got it. It helped them to visualize and overcome what they didn't know.

Later, the same group saw in the data that students had performed poorly on a particular skill regarding their writing and so they had a discussion about the skill.

> Teacher 1: The students need to be able to identify how a particular paragraph is related to the entire selection. Maybe we could build it into their fiction writing?
>
> Teacher 2: Yeah, we could have them analyze the purpose of their writing in a peer review exercise. That we could do.
>
> Teacher 1: Yes. Let me write this down (recording the activity on their protocol sheet – Fig. 9)
>
> Teacher 3: I think the good part of Achievement Network is that we don't know the test in advance. It's a cold read for us, too. It keeps everyone on their toes. So we also need to teach them to take something from the story to support their answer regardless of the text. The kids want to be lazy about that in their writing thinking that they read the passage so they can just write on it. We need to really practice that so they use it on the test.

For the hour the teachers work in these department meetings, they talk about ANet data from their grade levels and share teaching experiences and strategies. Loosely structured, there is no particular rhyme or reason to the sequence of the discussions. As a teacher identifies a trend or has a concern it is shared with the group and the conversation follows suit. As they talk, teachers take notes on their conversations. These notes are used later in the afternoon when reporting out to the entire staff in the group share. The notes are also used for completing the protocols, which are turned in to administration. In this departmental community of practice, the teachers have reviewed the data collaboratively and begun to complete the protocol templates to develop instructional plans.

Group Share. After an hour of working in their departmental teams, the teachers still sitting in their work groups, direct their attention towards the administrators who bring the day to a close with a group share. Melanie and Irene lead the session during which the teachers look for cross-curricular and cross grade (vertical) implications of their data analysis. This "systems thinking" helps to build a cohesive, comprehensive instructional model based on data analysis that spans subjects and grades in order to

address deficiencies. To achieve this alignment, the administrators ask for teachers to share ideas, suggestions, and thoughts that were developed in the departmental meetings. One part of the conversation focused on integrating informational text across disciplines and in student work:

> Teacher 1: Literacy has to bleed out into science and social studies because some of the texts we are reading really require students to read those kinds of informational text. We do it in ELA, but we don't have enough time.
>
> Teacher 2: A science text is different from social studies text. One of the pieces in 6th grade assessment was a science text and we were talking about how we could help a student envision what they were reading. We talked about having them draw pictures to help them make an inference from that. You really need a picture in your head in order to answer some of the questions.
>
> Teacher 3: We picked up on that in the math group, too. What percentage of the problems require them to draw? Not everyone is an abstract thinker. You need to make a drawing and get them to label the parts.

Melanie and Irene provided suggestions when a teacher mentioned that her group was concerned that teachers needed to use the same vernacular with students:

> Teacher 1: We need to be on the same page and be sure that we are using the same terminology across disciplines.
>
> Irene: There needs to be a continuity of approach across the disciplines. With all of the emphasis on the reading across context, if you are going to say "envision" or "make a mental movie," then we need to be using those terms across disciplines.
>
> Melanie: To make the abstract into concrete, we need to make a list and at the next faculty meeting go over the list and give each other examples of exactly what we are going to say what is make a mental movie?
>
> Irene: We should have a book with the strategies because often it's more about the strategies used instead of the content.

> Teacher 2: I know we discussed at another meeting addressing the author's purpose. So every time now in Kindergarten I say, "What is the author's purpose?" I want to lay the foundation.
>
> Irene: We need a "glossary of terms" so that we are all on the same page from Day One.

Other teachers had noticed that students would benefit from a review of general test taking strategies:

> Teacher 1: We need to teach them basic testing skills like going back to the passage referred to in the question…read the question before the passage. I watched 60% of the kids go right to the first page and not read the questions.
>
> Teacher 2: So we talked in our work group about making sure they read first or they can't go on during the next test administration.

The group share lasts approximately 40 minutes. No formal report or notes from the share are created but teachers have had another opportunity to learn from one another and are thus able to use the information as they complete their reteaching plans. Melanie reminds teachers to complete their reteaching plans and to submit them to Irene for review within the next few days. Staff members are then dismissed for the day.

At the end of the day, teachers have familiarized themselves with the ANet data and identified trends in the data and areas in need of additional instruction. The templates for the two protocols are partially filled out, if not completed. What also has taken place, is a sharing of information across the staff team both within departments and across the school. In discussing things such as use of a shared vernacular or the recent emphasis on reading non-fiction, teachers develop a shared purpose.

Communication of Data

At RBCS, data use is not kept to teachers and administrators alone but communication about student growth in terms of measurable metrics is also priority. In this school, where data is perceived as integral to student achievement, communication between home and school goes beyond the traditional. For example, the middle school quarterly report cards include 61 data points concerning academics, behavior, character education and service learning (Appendix E). The data points are organized to report student progress in all three core beliefs of the school.

RBCS also implements Charter Chats, a weekly communication which parents choose to receive either in the form of a phone call or email. The Charter Chat provides an overview of the student's most recent academic accomplishments and challenges. The communication shares anecdotal evidence collected daily as well as the results of other formative assessments including teacher assessments, behavior indicators, and homework. A middle school ELA teacher shared that the teachers learn more about the students from the Charter Chat as well:

> We send the report to the parents on a weekly basis and so in return we get data from the parents about what's going on at home so that we have a beat on it. We get to know if there are any issues that might impact the student. We have a pretty open line of communication with the parents. They don't have qualms about getting in touch with us if they are concerned about anything in terms of the child's productivity or anything that might be impeding it.

Students are also involved in communicating data with the school community. After each grade tallies their character education survey data, students share the data with the school community and set goals for the next quarter. So not only are students involved in generating this data but they are also integral to how it is used. Keri, the fourth-grade teacher, described:

> (The students) actually report out in front of the whole entire community in the meeting in the morning. After we get all the grades to report out what their individual grade level goal is, we (school community) look at it schoolwide and we choose two goals for the entire school. The students are the ones doing the reporting out, so they own it.

Victor, in speaking of the same process, added:

> We really want everybody to share information – how to make a goal, how to measure that goal. We don't just say we are going to respect each other but how are we going to measure it. For example, we used a box where the students could put comments and we actually counted the notes in there. The students explain what we are doing in order to reach our goal and how we are going to measure it.

It has become part of Red Bank Charter's data culture to communicate about data – within the communities of practice, from teacher to students, and between the school and home. The tools they use were developed locally. Case studies about DDI implementation have not examined specifically how communication facilitates DDI implementation.

A Culture of Data

> *I'm at the point where I always want data. I want to know how my students are doing so I can look at the skill set and see what I need to develop. I look at the benchmark assessment and think "Okay what are they going to tell me about these questions?" I want to focus on those skills in the classroom.*
>
> *Lisa a 10-year veteran ELA teacher*

Melanie has developed a vision shared by all staff that everything they do is for the students, that every student is "their" student. In this culture, the responsibility for using data to "do what is needed" and to "get it right" is distributed across the members of the school community. As Lisa suggests in the quote above, data is integral to the work of the school. However, other than on the quarterly data days there are few scheduled opportunities for teachers to work with the data. Time for analysis and collaboration is loosely structured yet teachers like Lisa indicate that the work gets accomplished. Instead

of a reliance on formal communities of practice at RBCS, the reliance is on informal communities of practice developed through a distributed leadership model and a collaborative data culture.

Conclusion

The case studies of Red Bank Charter School and TEAM Academy, two schools described in the 2012 – 2013 School Performance Report as having an academic performance ranked "high when compared to its peers" (School Performance Report, 2013), cast light on different approaches to data-driven instruction. TEAM exercises a prescribed, top-down approach wherein all aspects of the process are outlined by school leaders. This prescription is the means by which the administration ensures that data analysis and planning will inform instruction. In contrast, RBCS employs distributed leadership rooted in a shared culture of data-driven instruction. At RBCS where "students come first," data about student growth – academically, emotionally and socially - is collected and analyzed to inform classroom instruction and achieve the mission of the school. In the next chapter, I probe these differences further to consider their implications for practice and future research.

CHAPTER FIVE: CROSS-CASE ANALYSIS AND IMPLICATIONS

"We are the drivers, not the driven."

Andy Hargreaves (personal communication, February 1, 2014)

Today education rests upon a precipice. The collision of the data movement, the accountability movement, and the standards movement has placed teachers in the middle of a multi-directional tug-of-war. Each day, teachers across the country are bearing the enormous weight of simultaneously integrating data to teach to the standards, meet growth objectives, and prepare for the latest state assessment, all while they are publicly compared to other teachers and schools doing the same. What can easily become lost in all of this is what the focus of DDI is intended to be–students and their learning.

Andy Hargreaves' quote above reminds us that educators are not to be driven by the data but rather should use data to inform teaching and learning. This study documented the way data-driven instruction was implemented in two charter schools where the needs of students and the improvement of instruction were the catalysts for data use. In this chapter, I look carefully across the findings of these cases in relation to current research to consider how school culture, leadership, and collaborative inquiry mediated data generation and use by teachers in these sites of practice. The implications emanating from this discussion for my future work as a charter school director and for other educators are then discussed followed by some suggestions for future research. To provide a context for this discussion, I begin with a brief summary of the research project.

Research Summary

To date, research on DDI has focused on the macro aspects of implementation – structure and timing of assessments, organization of data, and the need for teachers to review data (Ainsworth, 2007; Anderson, Leithwood & Strauss, 2010; Burch, 2010; Long, Rivas, Light & Mandinach, 2008; Mandinach & Honey, 2008; Marsh, Pane & Hamilton, 2006). There is scant research on the micro aspects of implementation: how teachers in the everyday realities of their work analyze data and use it to plan instruction. School leaders are thus left to their own devices to structure the processes and procedures through which teachers engage with data.

By examining the DDI process in two New Jersey charter middle schools, this study sought to identify practices that support work around data in order to improve student learning and academic achievement. The research questions guiding this study were:

1. How do communities of practice mediate the implementation of data-driven instruction in schools?
    a. What is the structure of the communities of practice in each school?
    b. How might the interactions between members of the communities of practice (in reference to data-driven instruction) be described?
    c. How do these interactions affect the use of data to change instruction?
2. How does school culture and leadership style mediate the implementation of DDI?

To look closely at the social and cultural interactions of the process, I conducted a qualitative case study of the teacher and leader interactions around data within the two focal schools. I collected data through interviews of school leaders, observations of communities of practice on data days, and focus groups with teachers. This data was supplemented by review of documents including data day protocols, documents used in formative assessment work, and other sources of descriptive data about each school.

Data were analyzed separately for each school. First codes were developed deductively and inductively and then larger themes were identified describing the culture and work of DDI. Triangulation confirmed that all codes and themes were present in multiple data sources. Obtaining data from a variety of sources added to the reliability and internal validity of the study. A cross-case analysis highlighted patterns in relationships between school culture, leadership, and teacher interactions around data. This analysis led to several key findings which are outlined in what follows, organized under my two main research questions.

How do communities of practice mediate the implementation of data-driven instruction in schools?

Rooted in sociocultural theory, Lave and Wenger (1991) proposed the concept of adult learning as a social act. Learning takes place when individuals meet, talk, share, and collaborate in a social context – communities of practice. In application, the movement to use professional learning communities for collaborative professional development (DuFour, Eaker, & DuFour, 2005) built "structures for success that maintain a press for ambitious teaching and academic achievement" (Darling-Hammond, 1997, p. 150). Little (1990) adds that when teachers engage in joint, collaborative work around a central

focus, it pays off in the form of increased teacher confidence, quality solutions to instructional issues and not surprisingly academic gains.

Other research has focused on the use of multiple data sources to inform teacher learning and teachers who then strategically change their practice to improve student achievement (Fullan, 2000; Long, et al., 2008; Mandinach & Honey, 2008, Tyack & Cuban, 1995). While the call for data-driven instruction has gained ground and has been the focus of national studies (Means et al., 2009; Means, et al., 2010), the concept of using communities of practice as the social context around which teachers engage in the use of data to improve instruction has not received much attention. This study adds to the body of research on DDI by looking at how DDI is implemented in two schools and particularly how communities of practices act as sites for using data for instructional decision-making.

Each school was observed using formal and informal communities of practice in DDI implementation. All teachers actively participated in the COPs and seemed to have bought into DDI as a process of instructional reform. However, the types of COPs differed in each school except for the use of data days.

TEAM Academy has many communities of practices, both formal and informal. Unique to TEAM is the use of coaches whose work in COPs mediates DDI implementation. Coaches not only guide teachers' work using protocols on data day, but they also conduct walkthroughs and review lesson plans in order to follow up on the implementation of reteach plans. In addition, they meet biweekly to guide teachers' ongoing use of data. Thus TEAM's coaches not only facilitate teacher use of data but also

provide a layer of accountability. When teachers at TEAM were asked who they would turn to for advice regarding instructional practices, they replied "[their] coach."

Red Bank Charter has fewer formal communities of practice; the work of the COPs is often conducted informally. Here distributed leadership for learning has placed the responsibility for DDI squarely on the shoulders of the teachers. However, two of the communities of practice particular to the Red Bank case were found to be integral to the school's DDI work: team-teaching and learner in progress meetings. In adopting a team-teaching model, leadership placed an emphasis on collaboration around lesson planning and instruction. The teacher and adjunct are continually collecting data about the students and analyzing it to inform their practice. Learner in progress meetings (LIP) are unique in that the membership of this COP includes teachers, students, and parents – nontraditional participants in a school COP. The communication of data and collaborative setting of goals which take place at these LIP meetings engage all stakeholders in the data process.

At both schools, key communities of practice are those formed during quarterly data days. The work on data day takes place in several communities of practice, and at both schools the end product is instructional plans which address identified skills that students have not mastered. School leaders allocate resources in terms of people, time, and money to this initiative but how the data day is executed and the types of COPs that meet is reflective of each school's culture and leadership.

TEAM Academy leaves nothing to chance when it comes to the interactions between staff and data. Top-down protocols prescribe the data examined, who participates and for how long in data analysis, and the guiding questions which shape the discussions. Protocols also stipulate the reporting-out requirements. With an intensely-

structured format for each meeting, leadership has control over the depth of data analysis and planning for instruction. Alternatively, at RBCS, a distributed model of leadership is enacted and the teachers are given much more responsibility for DDI. There are no specific protocols to guide discussions on data days and leaders do not participate in the communities of practice on these days; therefore the depth of the inquiry, analysis, and lesson planning relies on the teachers' shared culture of data-driven decision-making.

How does school culture and leadership style mediate the implementation of DDI?

School Culture. It has been said that the basic assumptions of culture are so deeply embedded in schools that it is difficult to talk about culture separate from the work of the school (Firestone, 1996). In this study, the use of communities of practice and the work of DDI were embedded in each school's culture. The data that each school prioritizes is indicative of their differences in culture and how the culture is lived. Although the culture (in terms of traditions and artifacts) is different, the basic assumptions at each school are similar. School leaders at both locations establish a focus on data-driven decision-making, develop opportunities for collaborative work in communities of practice, and hold high expectations for staff and students.

At TEAM the data culture is top-down and highly structured. The entire TEAM community works towards a common goal of getting every student to college. Reflective of that goal, leaders chose to establish a data culture focused solely on academic achievement. This impacts the types of data they collect, the assignment of staff, and the structure of the communities of practice where DDI occurs. The data which is collected and analyzed - including exit tickets, weekly academic assessments, content specific and interim assessments – is exclusively academic. Leadership provides specific protocols to

teachers in order to structure all aspects of their work with the academic data and a data team is there for support. Accountability goes beyond review of lesson plans and includes weekly walk-throughs and frequent coaching meetings.

At Red Bank Charter, the shared goals are broader in focus: they include academic, personal growth, and citizenship intentions. As such, the data RBCS chooses to collect is holistic in scope. The work of the COPs at RBCS mirrors their data collection and thus assumes a more holistic approach, as well. In collecting, examining, and sharing data regarding academic, social, and cultural issues, the staff of Red Bank Charter demonstrates its commitment to educating the whole child. Their reporting tools and practices concentrate on all of the above measures, and stakeholders collaboratively establish goals for each of the core beliefs. Although outside the reach of this study, the academic success of the students at RBCS gives reason to consider collecting data more holistically. Observations indicate that such data can assist school leaders in maintaining an environment conducive to teaching and learning.

As described, data *is* the culture at RBCS, yet the specific data processes and procedures are less formal and structured. There are fewer formal communities of practice, fewer protocols, no data team, and fewer visits to the classroom for accountability purposes. With much of the work of DDI taking place informally, it is challenging to observe all of the precise efforts or moments when collaboration around data takes place. As a result, it is difficult to determine the direct impact communities of practice have on DDI. However, the academic successes of RBCS lead one to conclude that if the communities of practice are not mediating the implementation of DDI, there are other factors outside the scope of this study which are serving as mediators.

Leadership. Firestone (2009) reminds educators that leadership establishes school culture. The leadership of both TEAM and RBCS have an intentional focus on teaching and learning. Similar to the research studies of Coburn (2001) and Hamilton & Richardson (1995), this case study did not intend to examine the effects of leadership, yet found convincing evidence of the impact of leaders on the implementation of DDI in communities of practice.

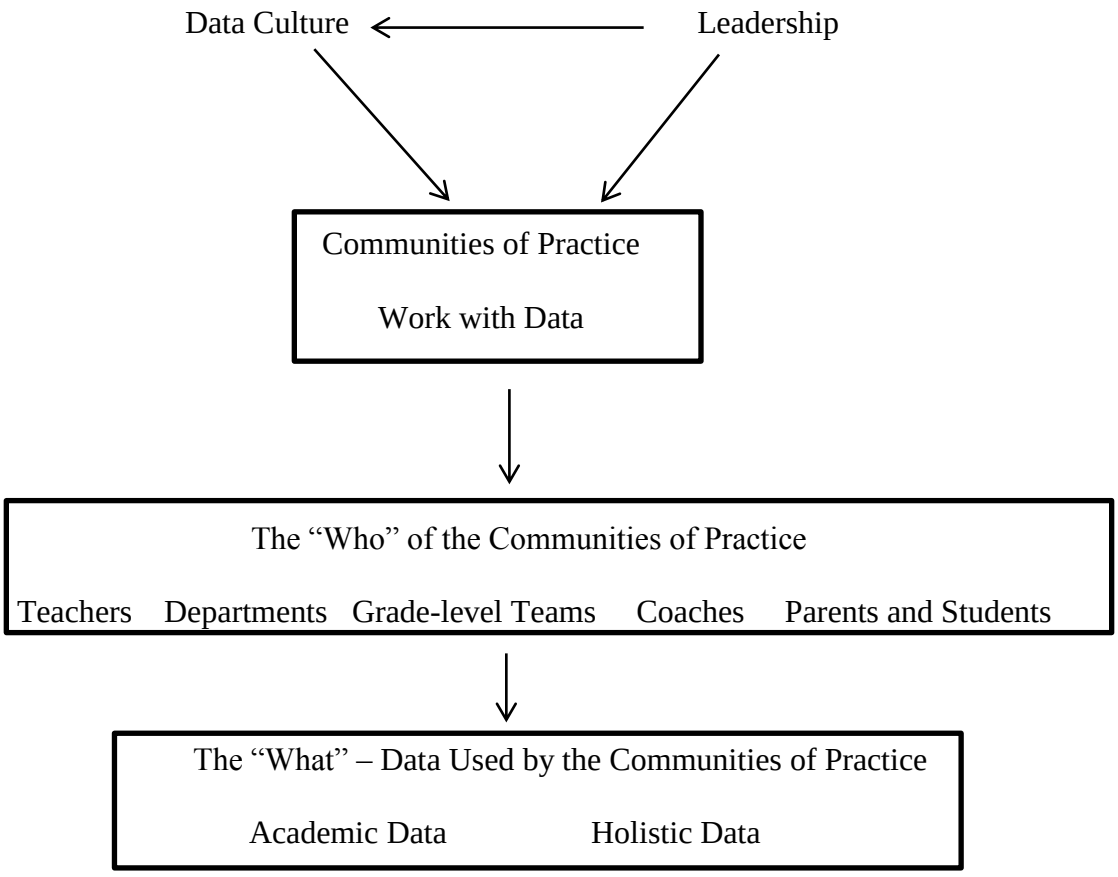
The leaders at TEAM established a top-down system for DDI. The DDI protocols and procedures are overseen by the Dean of Instruction, some department chairs, and select teachers who have been assigned the formal role of coach. This sharing of coaching responsibilities is an example of how leaders can "stretch" tasks over individuals (Spillane, Halverson & Diamond, 2004). In contrast, RBCS follows a form of distributed leadership aligned with improving effectiveness as described by Mayrowetz (2008). Therefore, at RBCS tasks are not assigned through the assignment of formal titles, but rather as a match of the task with the skills of the individual. For example, Maria and Vern, teachers at RBCS, described how they were tapped by their principal Melanie to take on jobs, some administrative in nature, because of their specific talents. In terms of DDI, this distributed leadership is evident in that the teachers drive the data analysis and discussions. Also on data day, when the teachers begin to develop targeted instructional plans, it is their peers who provide the advice, share experiences, or suggest a peer observation.

In summary, in these two schools, school culture and leadership shape how communities of practice around DDI are formed and implemented. They also determine the types of data collected and used to inform teaching and improvement. The following

figure illustrates the school relationships which mediate implementation of DDI (Figure 11).

Figure 11

Mediation of DDI Implementation



This figure portrays how the leadership style of the school shapes the school's data culture. School culture in broad terms is a product of the various stakeholders of the community – leaders, teachers, students, parents, community members, etc. However in terms of data, it was observed to be the school leaders, not others, who established the data culture. Together the culture and leaders determine how communities of practice work with data – the types of COPs, when they meet, and what protocols guide their work. The membership of the communities of practice varies depending on the nature of

the data collected and the purpose of that particular group but membership can include various combinations of staff within the school and even other stakeholders such as parents and students. The leaders and data culture also determine what types of data the communities of practice work with. There may be a focus solely on academic data, as seen at TEAM, or a more holistic approach, as observed at RBCS.

Implications

This case study was limited to two charter schools. Neither school is right or wrong in their approach to DDI implementation, but each offers ideas on how a school leader can use data for academic growth. The findings have implications for both my own work as a charter school director and for other school leaders.

Implications for School Leaders

Table 7 provides a summary of suggested practices that are drawn from reviewing findings across both case studies. These lessons learned can serve as a primer for school administrators seeking to implement or sustain the use of DDI in their schools.

Table 7

Suggestions for School Leaders Implementing DDI

Goal	Suggested Practice
Establish a School Culture	Provide and participate in sustained professional development on all aspects of DDI
	Model good data practices when working with teachers
	Use data to “inform” not to “punish”
	Employ hiring practices to only hire staff who support the data culture
	Hold staff accountable thus building peer

	accountability
Establish Communities of Practice	Allocate time and staff for collaboration
	Implement data days with protocols
	Facilitate formal and informal COPs
Implement Coaching	Use distributive leadership practices based on individual's expertise
	Use coaches to focus and deepen data analysis and subsequent instructional planning
	Use coaches to monitor implementation of data-based instructional plan
Data Collection	Use a variety of sources to make data "friendly" to teachers
	Employ a holistic approach to data collection
	Triangulate data from academic and non-academic sources to identify needs

This study suggests that leaders should establish a school culture not only focused on DDI as a process, but one where data should be used for student achievement and not solely for accountability. The use of assessment data to label teachers as "good" or "bad" contributes to isolationism and fear. School leaders who promote a growth mindset (Dweck, 2006) create a culture in which teachers can accept the data as a means to their student achievement goals. Every teacher in this study had bought into the data culture of their school and saw data practices as useful tools.

Although both schools had established a data culture prior to this study commencing, school leaders and teachers in their interviews referred to actions which helped them work as a team to value the use of data driven instruction. These actions included, school leaders and teachers actively participating together in sustained professional development on all aspects of DDI. Educating the community as a whole on how to read the data, what the data is saying, how the results relate to the Common Core

Standards and instructional strategies goes far to establishing an atmosphere where collaboration is key and data is used for information and not a source of fear. As with any culture, attention must also be given to sustaining the values of the culture; thus it is important that leaders hire new staff that understand and accept the culture they are joining. Informing teacher candidates upfront of the school culture and expectations as well as providing data scenarios for analysis during the interview process can help identify teachers who will fit in and contribute to the growth mindset of the school.

Findings from this study also support the application of communities of practice as sites for collaborative work around data. At each school, teachers engaged in dialogue around data, teaching, and learning with their peers. Similar to the strong communities of practice identified by McLaughlin and Talbert (2001), members of the COPs of both TEAM and RBCS were observed to share methods, materials, lesson plans, successes and struggles-- practices which the research base (Love, 2008; Spillane, 2006; Young, 2006) suggests support student growth. School leaders seeking strong COPs would be advised to allocate resources, in terms of time and staff, in order to structure these opportunities for collaboration. As school leaders commit to using communities of practice to support DDI, choosing to employ structured protocols appears to be another way that leads to data being used for instructional improvement. In addition, the use of protocols provides stability when there is staff turnover or a change in leadership, as they help to ensure consistency in the DDI process.

A third implication emanating from the findings of this study is the use of instructional coaches. The use of coaches at TEAM Academy seems to contribute to more focused and consistent use of data. Moreover, the coaching model helped to ensure

that teachers translated what they learned from the data into their instructional plans. Through lesson plan review and feedback as well as weekly walkthroughs, coaches monitor the translation of data analysis to teacher practice. This method of distributing leadership, by tapping into the expertise of multiple staff members, improves both the efficiency and effectiveness of DDI implementation thus providing the best opportunity for student achievement.

Although not an original area of focus of this study, the academic success of students at Red Bank Charter lends support to implementing a holistic approach to the kinds of data collected and used. The learning environment is a function of the social and emotional context as well as the academic culture, so it makes sense to apply data-driven decision-making to non-academic data as well. Leaders therefore should consider collecting non-academic data, such as the RBCS's school culture survey, in order to gather data on other aspects the learning environment.

Implications for Personal Practice

As the Director of a charter high school, I have implemented several practices as a result of what I have learned from this study. First, drawing on my observations of each school, I negotiated a change in the master schedule at my school for this year so that all teachers could meet for an hour three times a week in communities of practice. These meetings replaced the former professional learning communities which, solely under teacher direction, had not been successful in improving teacher practice or student achievement. I also provided extensive professional development in DDI and collaborative practices to the teacher leaders who led these weekly groups. Mid-year evaluation of these COP meetings indicates that there has been an improvement in

teachers using data to inform their instruction. Reflecting on their work this year, the teams are working to develop protocols to guide the DDI process.

The use of instructional coaches to support data analysis and use by teachers is a strategy which I have already begun to implement at my school. To date, each administrator at my school also serves as a coach. They review and provide feedback on lesson plans and meet individually with each member of their team of teachers several times a year. At each meeting, the coach and teacher reflect on how the teacher is using formative assessments to influence his or her teaching practices following a prescribed protocol I developed in collaboration with my administrative team. Although the meetings are not as frequent as those at TEAM, the coaches have found that individual reflective practices of teachers in terms of data use have improved. I intend to continue to collect data on the practice of coaching from both teachers and administrators.

The mission of the school where I serve as Director states in part, "[the school] is dedicated to providing a challenging, nurturing environment in which each child's social and academic potential is maximized." As such, the administrative team at my school has begun planning how to incorporate a quarterly assessment of school culture in order to address issues in a more timely fashion. We plan to review indicators of academic achievement and other factors such as discipline referrals, HIB reports, etc., in order to evaluate the success of this use of data.

Opportunities for Future Research

Although this study was limited to two middle charter school sites, this study provides insight as to how communities of practice can be used to mediate implementation of DDI. Further research is needed at additional sites to examine more

deeply how leaders establish a culture committed to DDI. The findings of this study indicate that the data culture is crucial to laying the foundation for the work of DDI, yet as each school site was already well-established in the DDI process at the time of the study, the initial steps were not observed. Also, as schools seek to improve students' academic achievement, conducting a study of schools who implement a more holistic approach in terms of data use compared to those with a primarily academic focus would provide direction as to the best use of DDI.

Conclusion

A national emphasis on data and assessment alone is not enough to change instruction; a culture which embodies data-driven decision-making for improving teaching and learning is critical. The cumulative effect of a shared data culture with regular teacher collaboration in communities of practice has the potential to impact student learning in a big way. Lisa, a 12-year veteran ELA teacher at RBCS, summarizes the power of DDI:

> The students I have now versus the students I had 12 years ago are light-years more skilled. Twelve years ago I was looking and thinking, "He can't write. What is that word supposed to be?" Now it's, "Oh, they forgot the comma and I need to talk to them about paragraphs." Or, "That was a good piece of insight, how about a little more evidence?"

As a chief school administrator at a charter school, I hope that leaders of both charter and traditional public schools can use the findings of this study, as I am already doing to support their work in DDI implementation.

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Appendix A: School Leader Interview Protocol

1. How would you describe the faculty culture?
2. To what extent do teachers work in isolation keeping their thoughts and practice private?
3. To what extent is there collaboration between faculty?
    i. Across grade levels?
    ii. Across disciplines?
    iii. Across experience?
    iv. Between leadership and faculty?
4. What are your goals for use of DDI?
5. To what extent were these goals developed collaboratively? What stakeholders were involved?
6. To what extent are these goals perceived by the teachers as integral to teaching and learning?
7. How are teachers supported in using the data to make classroom decisions?
8. To what extent do teachers help one another?
    i. To what extent do you have a role in this process?
9. What facilitates the sharing of practice amongst teachers? What hinders it?
10. What do you think could be done to further support teachers' use of data to shape instruction?

Appendix B:Teacher Focus Group Protocol

1. How would you describe the faculty culture?
2. To what extent is there collaboration between faculty? Between leadership and faculty? Across grade levels? Across disciplines? Across experience?
3. To what extent do faculty work in isolation keeping their thoughts and practice private?
4. What are your goals for use of DDI?
5. To what extent are these goals shared by the school leadership?
6. To what extent were these goals developed collaboratively? What stakeholders were involved?
7. Is there shared time for you to collaborate on analysis and use of data?
    i. If so how is it structured?
    ii. How often does it occur?
    iii. Is there collaboration within subject area? Across disciplines? School wide?
8. What facilitates the sharing of practice amongst faculty? What hinders it?
9. Who on the staff would you go to for advice if you had a questions about:
    i. Motivating students?
    ii. Improving student achievement?
    iii. Making data based decisions?
10. How are you supported in using data to make classroom decisions?
    i. To what extent has there been professional development regarding this?

ii. To what extent do you help one another? If so how?

11. To what extent do teachers perceive the use of data as integral to teaching and learning?
12. How did you use data to make decisions regarding your instructional practice?
13. Did you discuss the practice with another school staff member? Who was the staff member and why did you choose him/her?
14. How successful do you think you were in the process? Why or why not?
15. Is there anything at this time you want to do to make your use of data more impactful in the classroom?
16. How important is culture in setting the stage for collaborative use of data?
17. If culture is important who is instrumental in developing the supportive culture? Teachers? Administration?

Appendix C

An Investigation of the Impact of Communities of Practice on the Effective Implementation of Driven Instruction

You are being invited to participate in a research study about the current practice of Data Driven Instruction in New Jersey's charter public schools. This study is being conducted by Mary Jo McKinley, graduate student under the guidance of Dr. Sharon Ryan, from the Graduate School of Education at Rutgers, The State University of New Jersey. This research study is being conducted in order to fulfill the requirements specified in the dissertation process for the Graduate School of Education.

You were selected as a possible participant in this study because you are identified as an employee of a charter public school currently implementing Data Driven Instruction within the school.

There are no known risks or costs to you if you decide to participate in this research study. There also will be no payment to you for participating in the study. The information you provide will be entered into a database for analysis without overt identification. While demographics will be listed in a generalized format, the results of the questions related to the implementation of DDI are confidential. The questionnaire/interview/observation will take about 45 - 60 minutes. An audio and/or video recording of your interview/observation will be made for transcription to ensure accurate information is captured. _____ (Participant Signature / Date) Further information will be collected through observation. The information collected may not benefit you directly, but the information learned in this study should provide more general benefits to the academic community.

The interview is confidential. Your name will be coded and used only for the purpose of follow-up information. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study. All information gathered will be kept locked during the dissertation process, and then shredded and/or destroyed following the dissertation defense. Individuals from the Institutional Review Board may inspect these records. Should the data be published, no individual information will be disclosed.

Your participation in this study is voluntary; refusal to participate will result in no penalty or loss of benefits. You are free to decline to answer any particular question you do not wish to answer or withdraw from the study at any time without consequence.

If you have any questions about the study, please contact Mary Jo McKinley, 732-483-1102, maryjo.mckinley@gse.rutgers.edu. If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:

Rutgers University Institutional Review Board for the Protection of Human Subjects
Office of Research and Sponsored Programs
3 Rutgers Plaza New Brunswick, NJ 08901-8559
Tel: 838 932 4058 Email: humansubjects@orsp.rutgers.edu

Date of IRB Approval: July 31, 2012 ***IRB Number:*** E13-040

Subject's Signature _____ Date: _____

Investigator's Signature _____ Date: _____

Appendix D

RBCS School Culture Survey, Grades 3-8

Marking period 1 2 3 4

Dear Student,

Take a few minutes to think about your days at Red Bank Charter School. What is it like to be a student here? Please answer the questions below. This is not a test. There are no right or wrong answers. We hope that you will feel free to be honest and answer the questions-in a way that shows how you really feel. Your teacher will help you if there is something you don't understand. Put an X in the box that shows your answer to each question.

Your name: _____

1. I am a girl ☐ boy ☐
2. I am in grade **3** ☐ **4** ☐ **5** ☐ **6** ☐ **7** ☐ **8** ☐
3. Most of the time, this is how I feel coming to school. Place yourself the Feelings Barometer with a circle around the number corresponding to how you feel.

-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5

4. I participate in class activities. Yes ☐ Most times ☐ Sometimes ☐ Not at all ☐
5. I cooperate with others in my class. Yes ☐ Most times ☐ Sometimes ☐ Not at all ☐
6. I listen to other people's opinions. Yes ☐ Most times ☐ Sometimes ☐ Not at all ☐
7. Others in my class listen to me. Yes ☐ Most times ☐ Sometimes ☐ Not at all ☐
8. Students in my class treat each other with respect. Yes ☐ Most times ☐ Sometimes ☐ Not at all ☐
9. Students in my class work together to solve problems. Yes ☐ Most times ☐ Sometimes ☐ Not at all ☐
10. I feel that I can talk to the teachers in this school. Yes ☐ Most times ☐ Sometimes ☐ Not at all ☐
11. When I'm having a problem, other students will help me. Yes ☐ Most times ☐ Sometimes ☐ Not at all ☐

12. When I want to join in a game or an activity

    other kids include me. Yes ☐ Most times ☐

    Sometimes ☐ Not at all ☐

13. I use cool down strategies when I'm angry or frustrated. Yes ☐ Most times ☐

    Sometimes ☐ Not at all ☐

Name cool down strategies that you use:

_____

14. Students in my class respect one another and the teachers when we are in another classroom or in another place in RBCS. Yes ☐ Most times ☐

    Sometimes ☐ Not at all ☐

15. On the school bus, students treat me with respect. Yes ☐ Most times ☐

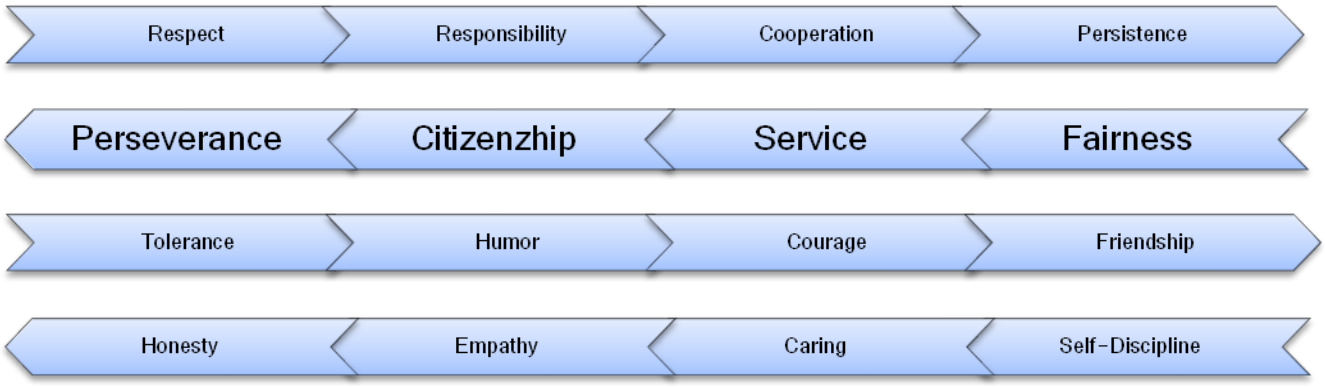
    Sometimes ☐ Not at all ☐

16. On the school bus, I treat my classmates with respect. Yes ☐ Most times ☐

    Sometimes ☐ Not at all ☐

17. On the bus, I cooperate with the bus driver and follow rules of safety. Yes ☐ Most times ☐

    Sometimes ☐ Not at all ☐



1. I practice RBCS values and show it by what I do and what I say. Yes ☐ Most times ☐

   Sometimes ☐ Not at all ☐

Circle a value or values that you practice. Describe what you do or say that demonstrates (shows) that.

_____

_____

2. This is how safe I feel in each of these places and at these times.

	Very Safe	OK	Not Safe
In this classroom	☐	☐	☐
Lunchtime	☐	☐	☐
At recess	☐	☐	☐
In the hallways	☐	☐	☐

3. How often has this happened to you at school?

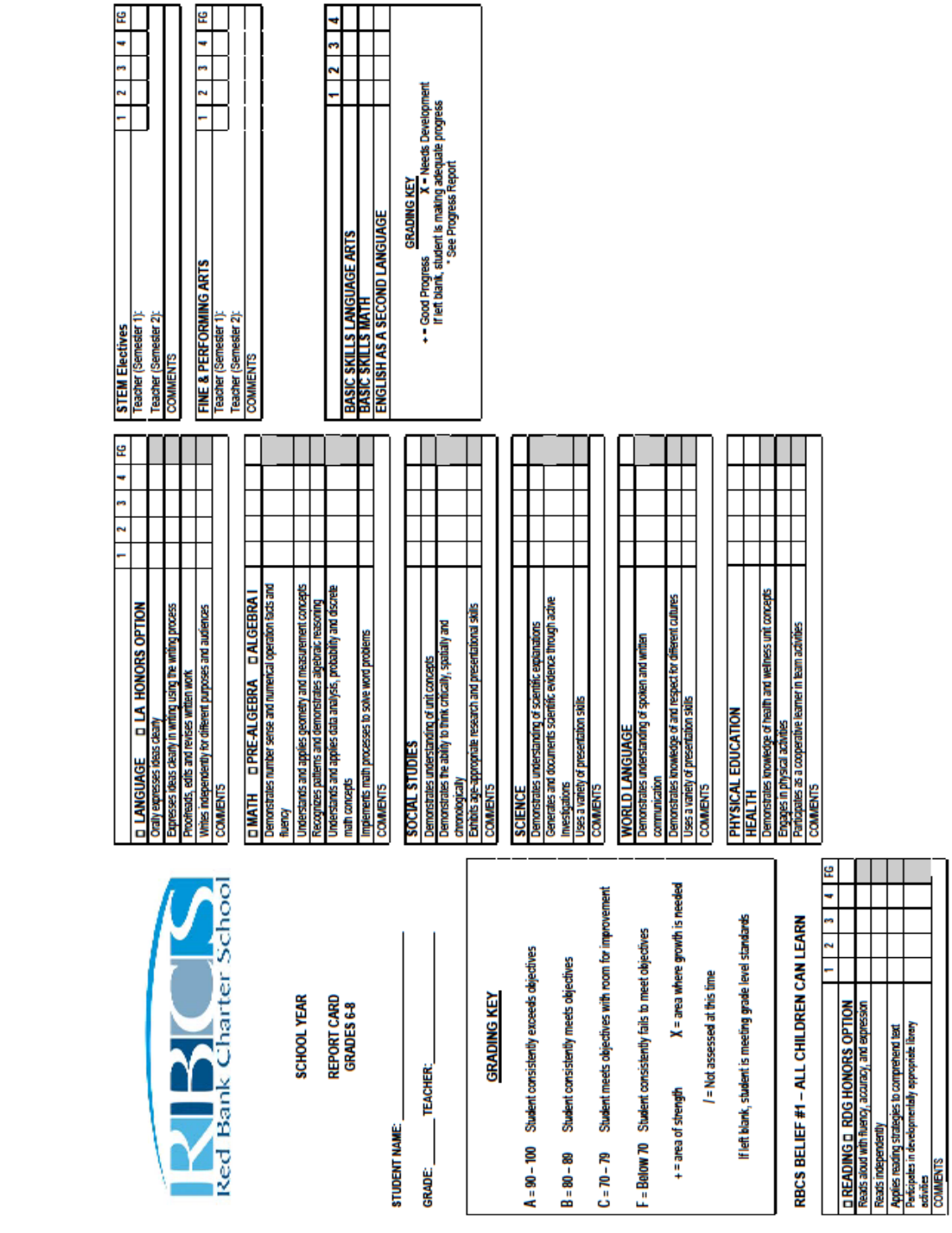
	Not at All	Sometimes	Where?	Very Often
Name calling	☐	☐ _____	_____	☐
Put-downs	☐	☐ _____	_____	☐
Teasing	☐	☐ _____	_____	☐
Bullying	☐	☐ _____	_____	☐

4. How frequently have *you* done any of these to other kids at school?

	Not at All	Sometimes	Where?	Very Often
Name calling	☐	☐ _____	_____	☐
Put-downs	☐	☐ _____	_____	☐
Teasing	☐	☐ _____	_____	☐
Bullying	☐	☐ _____	_____	☐

If you would like to add any additional thoughts or comments please do so below

Appendix E: RBCS Grade 6 – 8 Report Card



Red Bank Charter School

SCHOOL YEAR STUDENT NAME: _____ GRADE LEVEL: _____ TEACHER: _____

Behaviors that Support Learning	1	2	3	4
Listens attentively				
Follows directions				
Completes assigned work on time				
Uses time wisely				
Is able to organize and manage materials				
Works independently				

RBCS BELIEF #2 – ALL CHILDREN MUST CARE ABOUT THEMSELVES AND OTHERS

CHARACTER EDUCATION	1	2	3	4
Assumes responsibility for own actions				
Speaks / listens at appropriate times				
Demonstrates effort				
Respects rights / feelings / property of others				
Interacts well with peers				
Works cooperatively in peer groups				
Resolves conflicts appropriately				
Appreciates humor and uses when appropriate				
Is truthful and honest				
Takes appropriate risks				

RBCS BELIEF #3 – ALL CHILDREN SHOULD CONTRIBUTE TO THEIR LARGER WORLD

SERVICE LEARNING	1	2	3	4
Demonstrates attitude of sharing				
Participates in class and school level projects				
Takes initiative to contribute to school community				

ASSESSMENT KEY

+ = Student achieves beyond expectation in this area
X = Student needs improvement in this area

If left blank, student is meeting grade level expectations

TEACHER COMMENTS

01 Shows a positive attitude toward learning
02 Works to potential
03 Is attentive in class
04 Sets personal goals
05 Demonstrates responsibility for learning
06 Does outstanding work
07 Demonstrates commendable effort
08 Shows encouraging improvement
09 Works well with others
10 Actively participates in class
11 Is an asset to class
12 Would benefit from coming to class prepared for learning
13 Would benefit from completing homework regularly
14 Would benefit from completing course requirements
15 Would benefit from additional help
16 Assignments incomplete and/or late
17 Would benefit from improved classroom behavior
18 Would benefit from improved test/quiz scores
19 Would benefit from participating more in class
20 Would benefit from improved attendance
21 Would benefit from making up missed assignments

ATTENDANCE

	1	2	3	4	FINAL
Days Present					
Days Absent					
Days Tardy					

Teacher Signature_____

I have reviewed this report and goals for next Marking Period

Parent Signature_____

Student Signature_____