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DATA DRIVEN DECISION MAKING: DATA INTERPLAY
WITHIN A HIGH SCHOOL DISTRICT

by
Chris Heilig

A Dissertation

Submitted to the
Department of Educational Leadership
College of Education
In partial fulfillment of the requirement
For the degree of
Doctor of Education
at
Rowan University
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Dissertation Chair: Gini Doolittle, Ph.D.

Dedication

This work is dedicated to my family ….

To my wife, the best-proven female leader and motivator, your love, understanding, and support was unwavering during the journey … you had the hard job. Thank you for your five most meaningful words, "I won't let you quit" … your strength became mine and we did it together! I love you ….

To my children, Declan, Cooper, and Tierney Rose … you are the reasons for every decision that I make and everything that I do. I hope this work and our family sacrifice during this process provides motivation for you to truly "reach for the stars" and do whatever you are inspired to do in life with no limitations … all while respecting the value of education and the love of learning. The three of you are more responsible for this accomplishment than you may ever know. I love you!

Acknowledgments

I would like to thank my committee chairperson, Dr. Virginia Doolittle. Dr. Doolittle made a teacher to student connection long ago that I will never forget. Her ability to relate to the work of practitioners is uncanny, making work like this relevant and useful. Thank you for saving me and taking a risk. I am deeply indebted and I will never forget. Keep making connections … it is a rare skill that even adult students need.

I would like to thank committee members Dr. JoAnn Manning and Dr. John Billen. Your feedback focused my work and greatly facilitated the process.

In addition, I would like to thank my school district leadership and participants in this study for placing their trust in me by being completely helpful, cooperative, and candid during the process. You made it a great professional experience.

Finally, I would like to acknowledge my mother-in-law and father-in-law, Edward and Monica Heffernan. We depend on Grandma and Grandpa for a great deal. This process amplified that need and I would be remiss if I did not acknowledge your unwavering love and support that you give your children and grandchildren. It is truly special … thank you for your love and support so that I could achieve this goal!

Abstract

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DATA DRIVEN DECISION MAKING: DATA INTERPLAY
WITHIN A HIGH SCHOOL DISTRICT
2013/2014
Gini Doolittle, Ph.D.
Doctorate in Educational Leadership

The purpose of this single embedded case study was to examine how a district data team coordinated by the central office influenced the data driven culture in the district's schools that receive Title I funding. The conceptual framework is centered on conducting the process of data driven decision-making through collaborative leadership and data analysis for the purpose of educational change. The research questions guided the investigation to discover how teachers and administrators are using data to make decisions, their perception of data driven decision-making, and the impact made by central office and building leadership to initiate the change to a data driven culture.

A qualitative data collection process included semi-structured, open-ended individual, and focus group interviews with data team and non-data team participants, as well as an in-depth examination of district documents. The findings of the district document analysis illustrated an understanding in the district that teachers and administrators should be using data; however, the absence of proof regarding the expectations to use data in the district policies and strategic plan demonstrates the lack of a strong commitment to build a convincing data culture. The findings from the qualitative data indicated that the central office and the schools matter equally to the use of data and

building a data culture in Title I schools. The reciprocal relationship between the central

office and schools described in the discussion will strengthen the original central office

initiated district data team through changes in policy, professional development, and

providing time for collaboration.

Table of Contents

Table of Contents (Continued)

Table of Contents (Continued)

List of Figures

List of Tables

Chapter 1

Introduction

The following on data driven decision-making (DDDM) in schools was a case study of a high school district consisting of four high schools that make up the largest school district in Burlington County, New Jersey. The four high schools receive students from eight sending school districts across the region. The case study collected qualitative data from the district's professional learning community members focused on data analysis (data team) and from non-data team members in three Title I funded schools. The study was designed to research the influence of the existing district data team on the data culture of the three Title I schools across the district. Earl and Katz (2002) note that a data culture includes making time to use data collaboratively, with a sense of urgency. Furthermore, Owens (1991) adds that the data culture aligns with the beliefs and values and is characteristic of the organizational members. The problem in education of closing the achievement gap between student subgroups and the solution of utilizing data to make decisions was investigated in this school district. It is clear in the review of legislative literature that basing decisions on data will improve educational outcomes.

As previously stated, the problem has been in the implementation of data driven decision-making. This study facilitated that process by investigating data initiatives currently in place and how they influence the schools within the district. Data driven decision-making (DDDM) is recognized as a vehicle for school improvement for both the lowest performing districts and the highest performing districts. The concept of DDDM and the creation of a data driven culture in education are highly touted by scholars for

1

school reform and improvement for both struggling and high performing districts (Boudett, City, & Murnane, 2005; Coburn & Turner, 2012; Love, 2009).

The persistent achievement gap between subgroups and the dropout rate across the country highlights the problem that educators are attempting to overcome by implementing a data driven culture. According to the National Center for Education Statistics, 2.5 million adolescents and young adults ages 16 through 24 were not enrolled in school and did not receive a high school diploma in 2012 (Chapman, Laird, Ifill, & KewalRamani, 2013). On the other hand, the dropouts are coming from only 12% of the nation's schools. Within the 12% of failing schools, more than half of the students end as dropouts without receiving a diploma. The other end of the continuum highlights the fact that even high performing schools have certain sub-groups that are not proficient in standardized testing (Bromberg & Theokas, 2013; Ceci & Papierno, 2005).

The concept of DDDM, prompted by policies such as the No Child Left Behind Act of 2001, and sustained through grants and initiatives such as the Common Core State Standards (CCSS) Initiative (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2011a), the Race to the Top (RTTT) Competitive Grant (United States Department of Education, 2009), the New Jersey Quality Single Accountability Continuum (NJQSAC), and the Partnership for Assessment of Readiness for College and Careers (PARCC) is recommended to improve the practice of educators and turnaround failing schools (Coburn & Turner, 2011; Lattimer, Schonyers, & Arons, 2006; NGO & CCSS, 2011a, 2011b; NCLB, 2001 PARCC, 2013; RTTT, 2010). Educators coordinate data analysis through professional learning communities utilizing a process of collaborative inquiry to make shared decisions (Boudett et al., 2005; Love,

2

2009). This chapter introduces the problem, purpose, research questions, policy implications, and initiatives that have stimulated this study.

Research Problem

The problem closest to the classroom is that barriers to using data by educators are evident (Reeves & Burt, 2006; Wayman, Cho, Jimerson, & Spikes, 2012). Educators must overcome the barriers to building a data driven culture so that teachers can guide instruction more effectively, close achievement gaps, and turnaround failing schools (Datnow, Park, & Wohlstetter, 2006; Marsh, McCombs, & Martorell, 2010). Datnow et al. (2006) and Marsh et al. (2010) argue that educators must also overcome barriers such as the lack of time to analyze data and minimal administrative support to use data for the purpose of guiding instruction. Wayman, Cho, et al. (2012) argue that all of the barriers associated with using data to guide instruction are related to ineffective leadership and data systems. The principals that intentionally supported data use to improve student outcomes had teachers that reported better attitudes and more effective data use in the study (Wayman, Cho, et al., 2012). Piety (2011) addresses the technology component and the use of data systems in his critique of Coburn and Turner's (2011) process of data use.

The broad research problem begins with the inability to close achievement gaps and high dropout rates across the country (Aud, Hussar, & Kena, 2012; Hemphill & Vanneman, 2011; Vanneman, Hamilton, Anderson, & Rahman, 2009). In addition, from an instructional standpoint, there is a gap in the research regarding how teachers and administrators are using data to guide instruction (Coburn & Turner, 2012). The achievement gap in education refers to the disparity in academic performance between groups of students (Aud et al., 2012). The achievement gap is evident in data such as

3

grades, standardized test scores, dropout rates, and college completion rates. It is most used to describe the performance gap between Black and Hispanic students, at the non-proficient end of the performance scale, and their non-Hispanic white peers, and the similar academic disproportion between students from low-income families and those who are not considered low-income.

The No Child Left Behind Act (NCLB) of 2001 called for schools to close the achievement gap between disadvantaged and minority students and their peers. The achievement gaps between subgroups are noticeable on national exams such as the National Assessment of Education Progress (NAEP), and College Board's SAT and Advanced Placement exams as well as graduation and dropout rates mentioned previously (Chapman et al., 2013; Symonds, 2004). Disturbingly, the disparity between subgroup performance increases as students progress through school. For example, Black and Hispanic students graduate with the reading and math skills of White eighth grade students (Hemphill & Vanneman, 2011; Smith, 1995).

Researchers that have examined various components of the data use process since the inception of NCLB have cited success in closing the achievement gap with DDDM. It was clear in Symonds's (2004) study that the schools successful in closing the achievement gap had teachers that used data often. Symonds (2004) found that the achievement gap-closing schools demonstrated administrative support for teachers to use data.

The problem that stimulated this study is the daunting achievement gap between ethnic and socioeconomic subgroups only revealed by data (Aud et al., 2012). This problem must be studied from a systemic standpoint taking into account how teachers

4

and administrators are using data and supporting data use across the organization, but most importantly, to guide instruction. I emphasize the point that achievement gaps do not exist exclusively in under achieving schools. It is common that school districts appear to be high achieving on the surface, but have underachieving groups of children only evident by the use of data (Aud et al., 2012; Hemphill & Vanneman, 2011; Vanneman et al., 2009). Making educational decisions based on data aligns the profession with others such as business and medicine that use data to make decisions; however, educators have to overcome a number of barriers to create data cultures in their districts (Slavin, 2003).

Achievement gap, a social justice problem. The research problem highlights the achievement gap between subgroups. The term achievement gap is used so often that it undermines the depth of the problem. Ladson-Billings (2006) approaches this from a social justice perspective, positing that closing the achievement gap is just the surface of the issue at hand. She argues that we have education debt, not an achievement gap, and that the fluctuation of the achievement gap from year to year is a false impression. Looking at the gap over decades suggests deeper insight into the components of education debt.

Ladson-Billings (2006) describes historical debt, economic debt, and sociopolitical debt as the obligation that is owed due to the past discrimination of certain races and nationalities. Past initiatives funding districts that have predominantly students of color have failed. Bateman (2011) describes how the Abbott ruling that sent $4 billion dollars to New Jersey's poorest schools was a failure due to the low graduation rates and test scores that remain after 30 years of implementation. Ladson-Billings (2006) describes sociopolitical debt by intuitively highlighting the voter registration between

5

Black and White citizens between 1965 and 1988. This indicated a 48 percent increase in voter registration over that time period. Lastly, Ladson-Billings (2006) indicates that moral debt contributes to education debt as well. The moral debt describes the deficit created by years of discrimination against races. The years of discrimination represent a handicap that remains for people of color today. Robinson (2000) states that one cannot expect a person that has been deprived for years to thrive simply because the limitations are not present anymore. This unfair treatment creates a deficit that will need attention and resources to make up for lost time.

The discussion surrounding Takaki's (2008) book highlights the realization that historically oppressed groups harbor feelings of resentment and continue to feel the historical racism for decades. In addition, Takaki (2008) allows one to walk in the shoes of historical figures from a multicultural perspective, emphasizing Ladson-Billings' (2006) point that historical debt contributes to the achievement gap. Ladson-Billings (2006) posits that we must address the education debt for the future of our country. Poverty and the all-encompassing detrimental effects on education, housing, health, and general well-being of individuals created insurmountable education debt. The commonly used term of achievement gap only touches the surface of a social justice issue that will need creative solutions.

Purpose

The purpose of this single embedded case study was to examine how a district data team coordinated by the central office influenced the data driven culture in the district's schools that receive Title I funding as per the No Child Left Behind Act of 2001. The regional high school district researched in this study initiated the district data

team during the 2010-2011 school year. The members, chosen by the central office administration, represented stakeholders from each school with equal representation. The mission of the central office, when developing the district data team, was to funnel the results of the data analysis projects and the knowledge of the data use process to the schools, creating a systemic data culture. After three years of implementing the district data team, it is important to investigate if the mission has been fulfilled.

Specifically, the study focuses on the schools receiving funding from the Title I grant. Title I, Part A of the No Child Left Behind Act (2001) provides funding for schools with a higher percentage of low-income families. The study focuses on Title I schools, as schools receiving Title I funding are regulated by federal legislation that call for the collection, analysis, and use of student achievement data to improve school outcomes (Means, Padilla, & Gallagher, 2010). Furthermore, I have focused on the Title I school with the highest percentage of economically disadvantaged students to recommend action for improvement based on the findings in this study.

The data use process that allows stakeholders to make educational decisions is defined as stakeholders searching for data, noticing data, interpreting data, and making decisions based on data (Coburn & Turner, 2011; Honig, 2003). Data use identified in this manner provided clarity during the data collection and data analysis phase of the study. Stakeholders were the school administration and teaching staff.

Legislation as Motivation

NCLB required using disaggregated data from standardized tests highlighting the performance of ethnic, economically disadvantaged, and special education sub-groups. The NCLB legislation mandates that schools targeted for improvement create an action

plan that will "include specific measureable achievement goals and targets for each of the groups of students identified in the disaggregated data" (NCLB, 2011, Sec. 1116). One of the advantages of disaggregated data is that even if the total school performance is proficient, sub-group data may expose non-proficient subgroups; hence, the name, No Child Left Behind. The NCLB system of accountability prompted further policies, legislation, and competitive grants to continue the effort to remedy the broad problem associated with this study such as failing schools due to achievement gaps and high dropout rates. The policies and legislation can be criticized, but the component of each that promotes the use of data cannot be condemned. New Jersey policy is included in the literature review, as the school district in this study exists in the state of New Jersey. The policies and initiatives in addition to NCLB include NJQSAC, CCSS, PARCC, and the RTTT competitive grant. The timeline in Figure 1 illustrates the chronological order of policies and legislation from federal to state levels. In addition, Figure 1 highlights how each policy promotes data, which contributes to the aforementioned problem associated with this study regarding the barriers educators face analyzing data. The espoused motivation to employ data driven decision-making is to improve student outcomes; however, the policies, initiatives, and grants illustrated in Figure 1 provided motivation to use data due to accountability and financial implications.

8

Key for Motivation to Use Data	
NCLB	No Child Left Behind
NJQSAC	New Jersey Quality Single Accountability Continuum
CCSS	Common Core State Standards
PARCC	Partnership for Assessment of Readiness for College & Careers
RTTT	Race to the Top Grant
TEACHNJ	Teacher Effectiveness & Accountability for Children of NJ
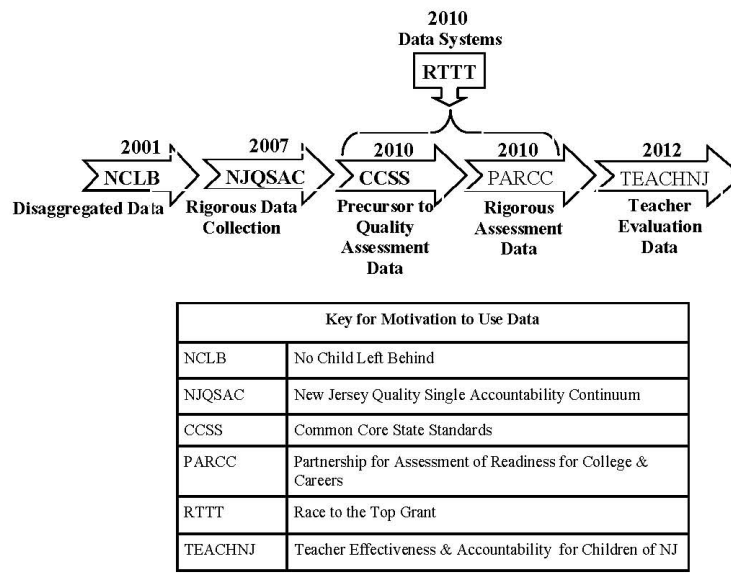
Figure 1. Legislation as motivation

No Child Left Behind. President Bush signed NCLB with very positive intentions for children (Standerfer, 2006). The communication included creating quality education for all students regardless of race, background, or socioeconomic status. This plea to help all children tugged at the heartstrings of opponents resulting in bipartisan support of this act (Berry & Herrington, 2011).

The achievement gaps are noticeable on national exams as well as the graduation and dropout rates (Chapman et al., 2011). The achievement gap has narrowed and dropout rates have improved since the NCLB legislation has passed (Gregory, Skiba, & Noguera, 2010). Jennings and Rentner (2006) concluded that the achievement gap between subgroups is narrowing, but readily admit that others may disagree. This admission regarding the achievement gap improvement suggests that the improvement is minimal. Ceci and Papierno (2005) discuss a possible reason for the persistent achievement gap and an inequity that policies may be creating. According to Ceci and

9

Papierno (2005), research indicates that if educational interventions are offered to both students that are academically proficient and academically at risk, the achievement gap will remain the same or become greater. Policy such as the No Child Left Behind Act of 2001 explicitly state that assistance given to disadvantaged students cannot be given to students who are advantaged or academically proficient. The dilemma created by the policy is twofold. First, the achievement gap across the country does not seem to be improving. Second, if the interventions will help all students, why withhold services to the advantaged students.

The NCLB accountability system mandated school districts to use disaggregated data with a sense of urgency based on performance. Using the data recommended by NCLB legislation created a positive outcome of NCLB when Lee and Reeves (2012) conducted a study at the time of adoption of NCLB in 2002. They concluded that the common characteristic of exemplary schools in the study is that they utilize data to track student achievement with swift action aimed toward deficiencies that are revealed (Lee & Reeves, 2012). This supported the data driven culture at the beginning and the hopefulness remains today for the data driven culture to continue toward facilitating school reform (Coburn & Turner, 2012).

As a proponent of the act, Paige (2006) suggests that the critics of the original intention are far and few between. As NCLB was implemented, Paige (2006) illustrated the fact that when Washington, D. C. dictates what should be done in states, districts, and classrooms, it does not take into account more local nuances, such as collective bargaining and local culture. The lack of knowledge and foresight is most evident during local implementation (Anderson, 2011).

10

The premise of the Elementary and Secondary Education Act of 1965 (reauthorized as NCLB) was appropriate for providing needed accountability across the country (Paige, 2006). Paige (2006) posits that education would be in more disarray without the law and that advocacy for every child and accountability is appropriate. Therefore, the work of improving the data driven culture in schools should be continued. As Lee and Reeves (2012) suggest, the quality use of data in schools will lead to correcting deficiencies instead of placing blame. Therefore, the work of improving the data driven culture in schools should be continued.

The policy (NCLB) itself created issues that may be related to the problems that educators face for matters of data driven decision-making. The issues of more testing, diminished time spent on other content areas, and the perception of federal government control leaves educators discouraged when faced with the talk of implementing a data culture. The issues that developed as a result of the implementation were unexpected consequences of NCLB. McLaughlin (1987) states that even policies with the best intentions can lead to unintended consequences due to varied interpretations across the policy system. In addition, it is difficult to implement policy locally across layers of government due to the lack of capacity or the needed attitude for appropriate implementation (McLaughlin, 1987).

However, the most detrimental problem may be the state's implementation of the policy. Anderson (2011) analyzes NCLB in a case study specifically within the implementation phase of his policymaking framework. Anderson (2011) criticizes the evaluation phase, as he mentions that the impact on quality education is unclear. Federal

11

policy must have a successful process of implementation from the national to the state and local levels (Anderson, 2011).

I have drawn from my knowledge as a practitioner implementing the system in the state of New Jersey. New Jersey ranks among the best across the nation in reading, writing, and math; consequently, New Jersey serves as an example of a state attempting to maintain and exceed academic excellence (Ushomirsky, 2013). Yet, regardless of the New Jersey results of the past, the implementation of the state accountability system has been slow regarding the influence of DDDM.

New Jersey state accountability. New Jersey established annual goals pursuant to No Child Left Behind for measuring student achievement in every school and every district by means of standardized tests. The system of accountability was a result of the New Jersey State Board of Education and the Commissioner of Education passing New Jersey Administrative Code (N.J.A.C. 6A: 30) that became known as the New Jersey Quality Single Accountability Continuum (NJQSAC) in 2007.

NJQSAC evaluated school districts in five key areas including instruction and program, personnel, fiscal management, operations management, and governance. The primary purpose of NJQSAC is to monitor New Jersey school districts' performance compared to state standards (Lattimer et al., 2006). The initial NJQSAC self-assessment tool measuring the five aforementioned areas did not emphasize the use of data to make decisions in school districts, contrary to NCLB. NJQSAC asked districts to respond to the self-assessment tool based on data without explanation. In 2011, Governor Christie employed a transformation task force with the charge of reinvigorating the New Jersey system of accountability in preparation for the Elementary and Secondary Education Act

(ESEA) Waiver Application. The task force specifically mentioned the importance of DDDM.

The mission of the task force was to make all children college and career ready, no matter their circumstances. However, the overarching goal of the New Jersey Department of Education to accomplish the goal of college and career readiness is to have all children graduate from high school. According to the 2012 final report of the Education Task Force, the Governor charged the task force with reviewing the current New Jersey accountability system, (NJQSAC). The 2012 task force final report from the Education Task Force recommended a more comprehensive use of data than the original NJQSAC document in 2006. First, the New Jersey Department of Education created Regional Achievement Centers (RAC) in each county and one priority is to ensure the proper use of data in all school districts as part of the NCLB waiver. In addition, one other systemic change as a result of the task force was to create a rigorous data collection system that will in turn have the customer service ability to provide quality data for school districts.

As a practitioner, it is very clear that school districts should be building a culture of DDDM in school districts based on policy. However, this was not immediately evident locally from the No Child Left Behind Act of 2001. A delay was created in promoting DDDM in New Jersey until the increased DDDM emphasis in the Education Task Force Report of 2012 and the Education and Secondary Education Act Waiver (NJDOE, 2012). The original NJQSAC state system of accountability created to comply with NCLB failed to follow through with the disaggregated data use outlined in NCLB. This study and similar studies by practitioners help facilitate employing a data driven culture in schools

and the proper implementation of policy promoting the initial intention of using data for accountability.

Common Core and Race to the Top. Recently, the National Common Core State Standards revisited the same discussion that Paige (2006) had criticizing federal government control over education across the nation. The National Governors Association and the Council of Chief State School Officers (CCSSO) led the development of the Common Core State Standards (CCSS) Initiative (National Governors Association & Council of Chief School Officers [NGA & CCSO], 2011a). According to Chiaramonte (2013, September 4):

> While Common Core has plenty of defenders, and may prove beneficial, the main criticism is that it is not the federal government's job to impose educational standards. Finding out what works is the job of local districts, working with parents. (p. 1)

Furthermore, critics highlight the fact that states are being forced to use the CCSS by creating incentives such as the Race to the Top (United States Department of Education, 2009) federal competitive grant. The Race to the Top competitive grant was implemented in an effort to reward states that are creating environments to reform schools. The reform areas include adopting the CCSS, building data systems that inform instruction, recruiting effective teachers, and turning around the lowest achieving schools. Regardless of the criticism, the common thread from the No Child Left Behind Act of 2001, Race to the Top funding, NJQSAC, PARCC, and the CCSS is the need to use data in education and make decisions based on data (See Figure 1). Federal initiatives and policy are difficult to implement at the local level (Anderson, 2011), but the concept of using data to make decisions cannot be criticized, as the alternative, making decisions on gut instinct, cannot substantially be supported.

TEACHNJ Act. In 2012, Governor Christie passed the Teacher Effectiveness and Accountability for the Children of New Jersey (TEACHNJ) Act, P.L. 2012, c. 26 ("Act"). According to the Evaluation Pilot Advisory Committee (EPAC) Final Report (2013), the TEACHNJ Act was the first recommendation of the EPAC which conducted a three year study investigating teacher and school leader evaluation in New Jersey. The EPAC, along with Commissioner Cerf, proposed a set of recommendations that would bolster New Jersey's evaluation system at the time. As a result of the TEACHNJ Act of 2012, the New Jersey School Board approved regulations outlining the requirements of the new statewide educator evaluation systems, known as AchieveNJ. According to the EPAC Final Report (2013), the ultimate goal of Achieve NJ is to "ensure that every student in our state has access to a high quality education – and that every educator is given timely and meaningful feedback and opportunities for growth" (p. 2).

The EPAC (2013) report describes the details of the new evaluation systems, but, most relevant to this study, the report contains a section on how this will promote data driven decision-making in New Jersey. The guidance in the section explains the importance of using teacher evaluation data as a form of professional development for teachers and to improve rater accuracy among administrators using the evaluation tool. The section emphasizes the use of the evaluation data, however, the guidance on how to use data effectively does not align with the data use model outlined in the literature review of this study. The EPAC (2013) report outlines productive data use regarding teacher evaluation by leading discussions with data and taking measures to improve the evaluation tool in an effort to inform staffing decisions. The data use model is grounded in literature and influenced by Honig (2003). Coburn and Turner (2011) depict a

15

collaborative model of analysis that includes searching, noticing, and interpreting data ending in actionable outcomes. The EPAC (2013) report does not utilize a model of data analysis that is grounded in literature or cited.

The Achieve NJ evaluation system will provide an opportunity to gather data that will highlight information about teaching at the individual, grade, school, and district level. These data, along with the ability to align them with student performance data, will allow educators to lead discussions to improve practice and student outcomes and design valuable professional development. The EPAC (2013) report highlights the importance of using data from the Achieve NJ evaluation system by "leading discussions," but unfortunately the process of "leading discussions" was not provided. The leading discussions piece absent from the literature is an important piece that could outline effective use of data. This study outlines a data use model in the literature review that could supplement the EPAC (2013) guidance for educators.

The school district in this study has been utilizing a specific process of using data for three years prior to this study. The process of data use is outlined, supported by literature in Chapter 2. The research questions below provided the data needed to assess how educators are using data to make decisions along with their perceptions of DDDM.

Research Questions

Literature supports the fact that the school district central offices matter to school-level use of data to make decisions (Honig & Venkateswaren, 2012). Honig and Venkateswaren (2012) conducted a meta-analysis of 30 articles, book chapters, and peer reviewed papers and reports. Their findings support the fact that the central office staff matters to the school staff's use of data to make building level decisions. Specifically, the

schools are dependent on the central office to provide access to data, time to use the data, professional development needed to analyze the data, and the expectations for school-level staff to use data to make educational decisions. Similarly, this study will focus on a central office initiated district data team and its influence on the school's ability to use data. The central office in this study implemented the district data team in an effort to funnel the results of the data analysis projects and the knowledge of the data use process to the schools, creating a systemic data culture.

The following questions guided the investigation to discover how teachers and administrators are using data to make decisions, their perception of DDDM, and the impact made by central office and building leadership to initiate the change to a data driven culture. Specifically, as Honig and Venkateswaren (2012) ask, "Do central offices matter to school-level data-use processes?" (p. 199). The study focused on the following four questions:

1. How do the regional high school district teachers and administrators of Title I schools perceive the use of data to make informed decisions from a district and building perspective?

2. How do the regional high school district teachers and administrators of Title I schools use data to make educational decisions?

3. How do school administrators and teachers perceive the district data team in relation to their building based data use efforts?

4. How did the central office and building administrative leadership impact a change in the organization and schools?

17

Summary

The projected broad impact of this study addressed the achievement gap and the barriers to data use stated previously in the research problem. It is clear in the literature that using data is effective in improving student outcomes and initiating positive change in districts and schools. The findings of this case study facilitated the federal and state charge to use data to inform educational decisions in school districts. This case study addressed the needed research identifying the importance of the central office. The literature highlighted the importance of the central office in this process, but research was limited. In addition, exploring the unique concept of utilizing a central office coordinated data team consisting of members from each school building forming a professional learning community is important to the broad educational audience. This unique concept combined a collaborative model, central office support, and a data use process that school districts can utilize to fulfill accountability requirements, initiate school change, and turn around failing schools.

18

<center>**Chapter 2**</center>

<center>**Literature Review**</center>

Introduction

      Federal and state education agencies continue to emphasize data analysis and

DDDM as a result of external pressures, including state accountability systems and

federal policies such as, the No Child Left Behind Act of 2001. Education professionals

know what effective schools look like when utilizing data to make decisions, however,

very little research has been conducted taking into account the influence of the district

central office (Coburn & Turner, 2012). According to Coburn and Turner (2012), using

data to inform decisions in education is an important strategy to "foster improvement in

public schools and universities" (p. 99). As a result of policy influence, school districts

are combining the data analysis initiative with the implementation of professional

learning communities to create a group for collaborative analysis, professional

development, and the improvement of student learning (Boudett et al., 2005; Love,

2009).

      Sharrat and Fullan (2013) outline 14 parameters that are essential in changing

school organizations in order to increase student achievement. Within the 14 parameters,

assessment was one of the "big ideas" that Sharratt and Fullan (2013) call "improvement

drivers" (p. 46). Sharratt and Fullan (2013) conducted a case study at Sanger Unified

School District in California. In the case study, the superintendent analyzed

disaggregated data to find that most students were not proficient in standardized testing.

The district administers the California Standards Tests (CSTs) in language arts,

<center>19</center>

mathematics, science, and history to students in grades 2-11. The district committed to the use of data as a primary tool for improvement. Their work in the California school district aligned with Sharratt and Fullan's (2013) four improvement drivers: assessment, instruction, leadership, and ownership. The school district put all four drivers into practice in combination with the practice of data analysis.

The concept of using data along with the four drivers allowed the California school district to build a culture that teachers and administrators collaboratively supported. Professional learning communities developed at every site that utilized data to measure student learning and create action steps for improvement. Within two years of starting this improvement and change process the district transformed from one of the lowest performing in the state to exceeding the state average in student achievement in all areas.

It is common that barriers and challenges are revealed during the policy implementation phase (Anderson, 2011). Many school leaders across the nation share frustration stemming from a lack of knowledge about how to transform mountains of data on student achievement into an action plan that will improve instruction and increase student learning (Reeves & Burt, 2006). Education professionals are uncomfortable with the word "data" or the phrase "data analysis" unless they have a statistics background (Flowers & Carpenter, 2009). Educators have also been called upon to do work they have never done before and were never prepared to do, including working in professional learning communities, analyzing data, defining root causes, implementing improvements, and monitoring progress (Love, Stiles, Mundry & DiRanna 2008).

Conceptual Framework

This study is framed in the context of educational change, collaborative leadership, and professional learning communities. The review of literature below indicates that the combination of change, leadership, and collaboration promotes improvement in schools with actionable outcomes. The data team implemented by the school district in this study followed this model.

Educational change. The data team in the study was designed as a vehicle to initiate change, utilizing collaboration with stakeholders in a professional learning community format. Huffman and Kalnin (2003) investigated the effect of using data through collaborative inquiry among teachers and administrators. They found that using data collaboratively positively influenced teachers to maintain a continuous improvement process. Huffman and Kalnin (2003) posit that the collaborative experience encouraged the teachers and administrators to take ownership of the data. The participants in their study indicated that the team approach had an impact on individuals and stimulated positive change in their schools. Love (2009) conducted similar work in Arizona with the Using Data Project. The results that emerged from the high poverty Arizona schools supported previous work on using data (Boudett et al., 2005; Huffman & Kalnin, 2003). Love (2009) found that through using data teams and collaborative inquiry, the teachers and administrators became facilitators of data. Similar to Huffman and Kalnin (2003), Love found that the collaboration created a team of change agents that produced quality actionable outcomes for the school district.

Collaborative leadership. A strong instructional leader delegates authority, involves others in critical decisions to pose questions, and creates an environment where

21

teachers grow and learn (DuFour & Eaker, 1998). According to Goleman, Boyatzis and McKee (2002), the best leaders are visionaries and democratic. Democratic leadership values people's input and obtains commitment through participation and collaboration. The democratic leader is a transformational leader that engages followers, helping to make each other better by creating a professional bond and rapport. Burns (1995) describes transformational leadership as a leader follower relationship that raises both to a new and better level. This dynamic moral style of leadership works with teachers, as colleagues working collaboratively to make decisions. The collaborative, democratic, transformational leader is appropriate for the conceptual framework for this study to initiate change with collaborative data analysis.

Professional learning communities. Coburn, Toure, and Yamashita (2009) found that educators would notice data and interpret it more efficiently when discussing it collaboratively. The professional learning community concept often used to analyze data has been linked to educational reform and improvement (Bullough, 2007; DuFour, 2004). According to Dufour and Eaker (1998), the most promising strategy for sustained, substantive school improvement, is developing the ability of school personnel to function as professional learning communities. Dufour and Eaker (1998) emphasize that the shared values of the group are the core of the community, not just articulated by leadership, but they are the foundation for every stakeholder in a school system. People who engage in collaborative team learning are able to learn from one another, thus creating momentum to fuel continued improvement. Also, according to Dufour and Eaker (1998), what separates a learning community from an ordinary school is its collective

commitment to guiding principles that articulate what the people in the school believe and what they seek to create.

Fullan (2007) agrees that a shared vision or ownership is unquestionably necessary for success, but differs from the other authors by saying that the vision is more of an outcome of a quality change process than it is a precondition for success. Fullan is in favor of including all stakeholders, but cautious about superficial exchanges within professional learning communities. Fullan (1998) states that professional learning communities must foster an open exchange where teachers can explore elements of their own practice that they see as ethically responsive or problematic. One of the major differences between individual work compared to collaborative work may be in the accountability that is a part of the professional learning community culture (Putnam, Gunnings-Moton, & Sharp, 2009). Combining the professional learning community concept with the collaborative analysis of data led by a leader with a vision will stimulate positive outcomes in schools.

The remainder of the chapter outlines data driven decision-making and a specific data use process embedded in past research (Coburn & Turner, 2011; Honig, 2003; Spillane & Miele, 2007). Honig (2003) and Coburn and Turner (2011) influenced the data use model for this study that supports the use of DDDM to initiate change in school districts. The process includes searching, noticing, interpreting, and creating action outcomes from data.

Data Driven Decision-Making

The literature on DDDM illustrates an evolving definition of data and DDDM. First, researchers and practitioners have used the words data, evidence, and information

to describe what they are using to inform decisions. Phillips (2007) points out that evidence is not a synonym for information or data. Phillips (2007) states that the process of selecting available information and introducing it to a group with an argument defines the process of DDDM in general. Marsh et al. (2010) define DDDM as educational stakeholders systematically collecting and analyzing data to guide decisions for the purpose of increasing student success and improve schools. Coburn and Turner (2011) define the process of data use as "what actually happens when individuals interact with assessments, test scores, and other forms of data in the course of ongoing work" (p. 175). Honig (2003) aligns the process of data driven decision-making with organizational learning. She states that the process of DDDM includes organizational stakeholders searching for data, using the data for interpretation, and producing outcomes for the organization based on the data. Collectively, the authors agree on a collaborative process that uses data to make informed decisions. The DDDM process that the authors allude to parallels the process of data analysis through collaborative inquiry used by the school district researched (Love, 2009).

The model of DDDM created for this study (see Figure 2) depicts what motivates teachers, principals, and administrators to systematically collect and analyze various types of data, including demographic, student learning, perception, and process data, to guide a range of decisions to help improve the success of students and schools (Marsh, Pane, & Hamilton, 2006). The data driven decision-making model created from the literature reviewed for this study includes the motivation to use data, influences on how teachers and administrators use data, and the actual process used to analyze data that lead to certain actionable outcomes (Figure 2). The model illustrated in Figure 2 was

influenced by Honig (2003) and Coburn and Turner (2011) along with the policies listed in the motivation to use data section of the model that practitioners work to implement on the local level. I simply describe data as information about students, stakeholders, and the organization. When the need arises, for specificity I relied on Bernhardt (2003), who defines data by four categories that include demographic data, student learning data, perception data, and school process data.
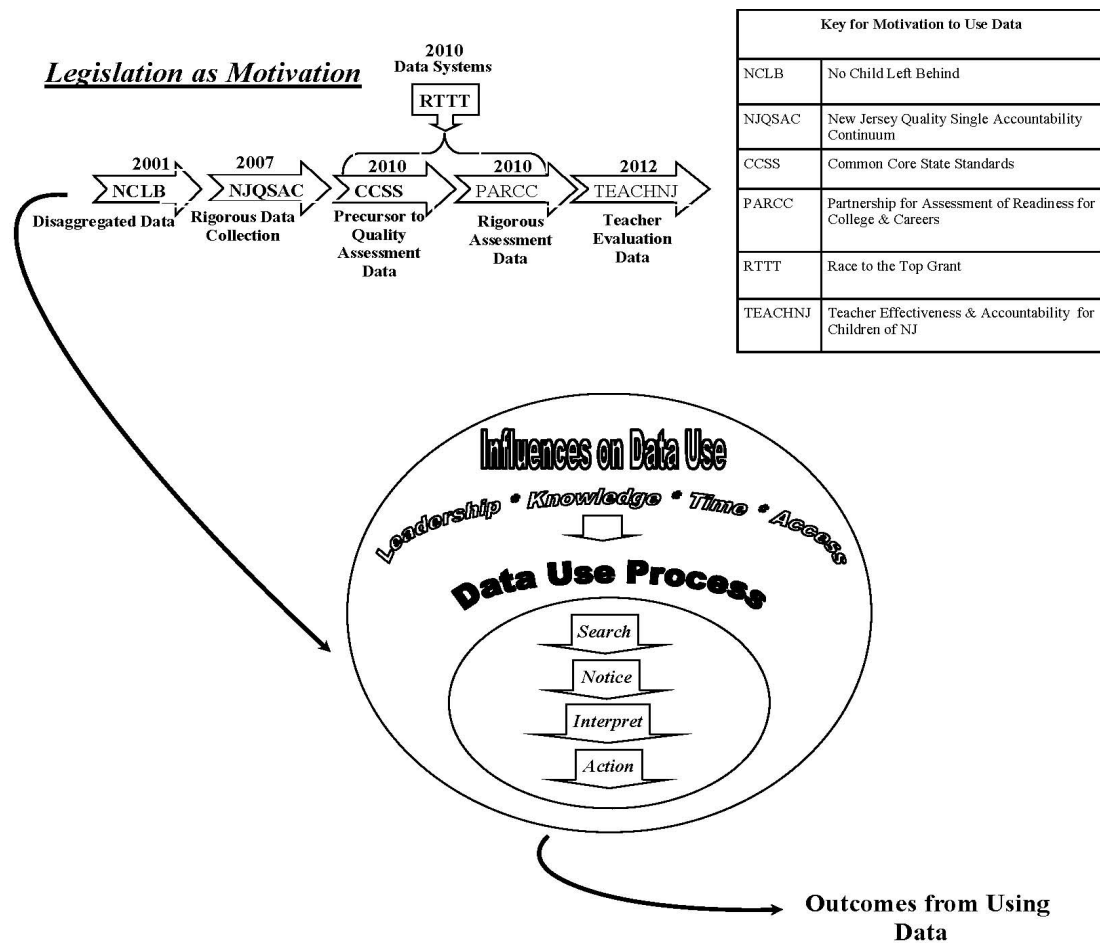

Figure 2. Data Driven Decision-Making. Adapted from Coburn, C. E., & Turner, E. O. (2011). Research on data use: A framework and analysis. *Measurement: Interdisciplinary research & Perspective, 9*(4), 173-206.

Why educators use data. The espoused reason to employ DDDM in a school district is to improve student outcomes, however, the motivation to use data is a result of policies such as NCLB (2001) as well as other policies and funding sources that have been implemented in an effort to improve and sustain NCLB's data driven effort (see Figure 1). NCLB states that local education agencies should include statistically reliable data in the annual report to the state agency (No Child Left Behind, 2001). The legislation clearly emphasizes the use of data by local education agencies. The field of education has been criticized in the past as a field that bases decisions on gut instinct or implementing initiatives based on fads (Slavin, 2003). Since this time, policies, initiatives, and grants such as the New Jersey Quality Single Accountability Continuum (NJQSAC) (Lattimer et al., 2006), the Common Core State Standards (CCSS) Initiative (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2011a), the Partnership for Assessment of Readiness for College and Careers (PARCC, 2013), and the Race to the Top (RTTT) Competitive Grant (United States Department of Education, 2009) have emerged to sustain the effort of NCLB. Figure 1 illustrates the timeline of the aforementioned policies, initiatives, and grants along with the contribution to DDDM.

Researchers support DDDM in response to the criticism, yet challenges exist within the implementation (Coburn & Turner, 2012; Lashway, 2002). In an effort to overcome the challenges, education practitioners used professional learning communities to promote collaborative inquiry (Dufour, 2004; Love, 2009). The professional learning community concept has been linked to educational reform and improvement (Bullough, 2007). A Professional Learning Community is a collaboration of educational stakeholders

26

who work together to investigate processes and create cycles of action to improve those processes (DuFour, Eaker, & Dufour, 2005). The professional learning community concept allowed educational stakeholders to collaborate utilizing data to make decisions. The main component of professional learning is gathering and using data (DuFour, 2004). As the concept of DDDM and professional learning communities merged, "how to" literature surfaced describing a specific process of data analysis (Boudett et al., 2005; Love, 2009).

Influences on data use. The influences that affect the use of data discussed in this chapter include leadership, knowledge, time, and access. Leadership that focuses on using data has been effective in building a data culture in schools (LaRocque, 2007). The leader can correct the negative influences on data use such as the lack of time to use data and limited access to data. The knowledge of data use that a leader has could be the result of leadership preparation programs or the absence of accountability regarding the use of data in school (Honig & Venkateswaren, 2012). As I have reviewed the literature with the research questions in mind, I began to suspect that the knowledge barrier and fear of data might indeed be related to the leadership component proven to be successful in some turnaround schools.

Leadership. According to Wayman (2005), the successful implementation of data based decision-making in schools requires strong leadership. However, successful organizations that employ data based decision-making will need a network of people to embed the data based culture into a district. The vision and support from a single leader is crucial. Love (2009) supports the use of a network of people focusing on collaborative inquiry with a specific process. Love (2009) and Boudett et al. (2005) represent the "how

to" literature that attempted to facilitate DDDM for improving schools. Both data analysis systems employed a sequential process for data use, utilizing collaborative analysis mostly focusing on working in a group with very little "how to" instruction on the leadership needed.

Coburn et al. (2009) expose not only the importance of leadership, but the importance of consistent leadership. In their study of urban schools, each change in leadership created a new philosophy on how to make decisions using data for the schools. Coburn et al. (2009) noted that due to conflicting data leadership philosophies the change in leadership created negative consequences. In a similar study regarding leadership and data use, Wohlstetter, Datnow, and Park (2008) applied the principal-agent theory to study the relationships between the central office and schools. The principal-agent theory allowed them to investigate how school district leaders empower a network of constituents to carry out a data culture within the schools. Wohlstetter et al. (2008) reported in their conclusion that superintendents and school district leaders recognized the importance of central office support by centralizing curricula and data information systems. In addition, they concluded that DDDM should be cultivated with strong, system level support from the central office leadership for continued improvement within the schools of the district.

Researchers agree on the importance of school and central office leadership to cultivate a culture of DDDM. LaRocque (2007) emphasized the efforts of a middle school principal in her study of a reformed Florida middle school as the main reason for the dramatic school reform. According to LaRocque (2007), the primary cause for the dramatic turnaround was the implementation of data based decision-making led by the

28

principal. Fusarelli (2008) argues for the importance of the central office leadership by stating that the vision of data based decision-making must come from a school district leader such as the superintendent. Data based decision-making is an initiative that should start at the district level that initiates a chain reaction of empowerment to the principals and teachers. In turn, the building staff will return research findings through data analysis back to the building and district leaders, creating a bottom-up approach to data analysis (Wohlstetter et al., 2008). The previous studies support the importance of a system of leadership that emphasizes central office support for the schools and empowerment of the school building stakeholders to execute DDDM throughout the organization.

Influence of knowledge, time, and access to data. Educators come up against a host of barriers that prevent utilizing a process of data analysis to make decisions. Generally, the categories that the barriers fall into are the following: knowledge, time for analysis, and access to data. Crum (2009) mentioned in his research that even though research supports the use of data, most educators lack training to engage in data based decision-making. Specifically, Crum (2009) proved that the administration's perception of a knowledgeable data driven staff was inaccurate. In reality, the staff lacked the knowledge needed to implement the use of data to make decisions. Several principals admitted to Reeves and Burt (2006) that they had fears regarding mathematics and data analysis. In addition, the principals often criticized their leadership preparation programs for not preparing them properly to engage their constituents in DDDM (Reeves & Burt, 2006).

The fear of math, numbers, and statistics among educators prompted some of the "how to" literature promoting data analysis among all educators, not only mathematics

educators. Flowers and Carpenter (2009) clearly stated that educators do not have to be statisticians to use data effectively. In addition, the work of Boudett et al. (2005) and Love (2009) illustrates what collaborative inquiry from an eclectic group of educators to make decisions from data.

The next common barrier to data analysis is the lack of time. School leaders revealed to Reeves and Burt (2006) as well as Wayman, Jimerson, and Cho (2012) that the lack of time to look at data was a key challenge. The contributing factor was a feeling of an inordinate amount of data to dissect, and the fact that standardized assessment data results did not arrive in a timely fashion. Often, data from standardized testing arrives after the school year has completed, which is an issue with state and federal policy. The remedy to the challenge of time is to create built-in periods of time for data analysis. Feldman and Tung (2001) used six schools for their study and found that the schools most successful in the data based decision-making process made time during the day to collaborate. Educators found that the traditional school day schedule was not conducive for data analysis.

Finally, educators often describe the inability to access data as a challenge. According to Wayman and Cho (2008), effective use of data to make decisions is directly related to the ability to utilize the student data system. Early on, Stringfield, Reynolds, and Schaffer (2001) found that student data were inaccessible to educators and that the attempt to obtain data took an inordinate amount of time. This contributed to the aforementioned barrier of the lack of time for analysis. The inability to access data has eased some due to the implementation of newer user-friendly student information systems (Wayman, 2007). The root of this accessibility barrier is the student information

30

system that school districts utilize. Most student information systems are designed for easy access of a central administrative data processing department. This forces many school districts to outsource data systems that they can access, but the current financial constraints in New Jersey limit this practice (Olah, Lawrence, & Riggan, 2010).

Data use process. Honig's (2003) work on DDDM and Coburn and Turner's (2011) data use framework contain separate philosophies on how data enters an organization as the initial phase of using data. The data use process for this study will include the stages of searching for data, noticing data, interpreting data, and acting on data (See Figure 3). Honig provides a framework that describes searching for data as a process that individuals perform to initiate change in an organization. Coburn and Turner's (2011) framework describes the process of noticing that occurs as data enters the organization followed by the phases of interpreting and acting on data. I utilized both actions: search, describing how educators find needed data, as well as notice, describing how data is noticed as it becomes available within the organization (Coburn & Turner, 2011; Honig, 2003).

It is important to dissect each step of the data use process (Figure 3) and support each phase in the literature review to provide clarity regarding data use during the data collection phase of this study. Coburn and Turner's (2011) work is important as it provides guidance on "how the pieces of the data use puzzle fit together and how it (data use) might be studied" (p. 174). Honig's (2003) work researching DDDM in education along with my personal experience utilizing the data team concept provide further support to clarify the pieces of the data use process.
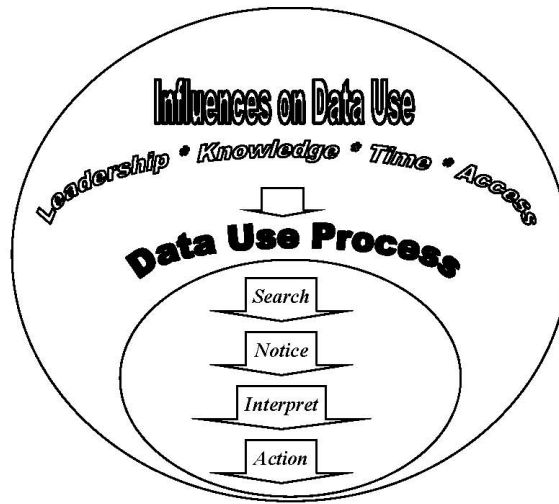
Figure 3. Data Use Process. Adapted from Coburn, C. E., & Turner, E. O. (2011). Research on data use: A framework and analysis. *Measurement: Interdisciplinary research & Perspective, 9*(4), 173-206.

Search. Search is defined as the process by which data will enter an organization through individual, organizational, or external efforts. Honig (2003) posits that search is a broad process of organizational learning and that organizational learning is a result of individual efforts conducted to initiate change. Honig, influenced by Levitt and March (1988), proposes a definition of search as processes that are developed by a collective influence of organizational members resulting from data that entered the organization. The individual efforts and experiences regarding the search process result in a combined change in practice. Argyris and Schon (1996) call this "collective wisdom" and March (1994) refers to this as "organizational rules" that develop as a result of data entering the organization.

Data can enter an organization from individuals as newly hired members bring new data or current members seek data through continued education coursework,

professional development, or professional learning communities. An organization may establish professional development or professional learning communities specifically with the charge of collecting data for the organization. External organizations, such as state and federal entities may provide data from test scores, monitoring, or auditing. Also, data may be stored within the organization, but the search process of individuals or groups will allow that data to be used for change purposes.

Notice. Coburn and Turner (2011) use the term notice within the data use framework as a way of describing how organizational members become aware of data. The emphasis within the data use framework and Coburn's (2001) earlier work is what influences what stakeholders notice. In the data use framework, Coburn and Turner (2011) argue that people search for data that align with their preexisting beliefs and knowledge. Furthermore, they feel that data contradictory to their beliefs are not noticed at all. Coburn and Turner (2011) feel that certain conditions such as leadership, access, knowledge, and motivation influence the data that are noticed by stakeholders. The federal and state initiatives may motivate schools to use data, but the pre-existing beliefs and knowledge influence what is noticed; consequently, affecting policy implementation at the local level (Anderson, 2011).

Coburn's (2001) earlier work posits that the action of stakeholders is a result of how people notice or select data. Coburn's concept that stakeholders notice data centered on preexisting beliefs and knowledge was constructed and supported with the work of other researchers. Porac, Thomas, and Baden-Fuller (1989) argue that organizational stakeholders notice and interpret ongoing cues in the workplace. Furthermore, they feel that problem-solving issues allows stakeholders to notice data grounded in preexisting

beliefs and experience. According to Weick (1995), the process of noticing is an early stage of interpretation and making sense of the data. A synthesis of Coburn's (2001, 2005, 2010) work describes the initial stages of how stakeholders notice data and extract what they feel is important based on beliefs, knowledge, and experience. Honig's (2003) search process, and Coburn's process of notice, allowed me to define how data enter an organization and how stakeholders make sense of the data by extracting what is aligned to their preexisting knowledge. The clarity provided regarding how data enter an organization was critical as I investigated the influence of the district data team on individual schools in the case study.

Coburn (2001) found in a study investigating reading comprehension that teachers notice data and interpret them more efficiently when discussing the data collaboratively. Furthermore, these collaborative interpretations led to action regarding classroom instruction. In addition, Coburn et al. (2009) found that the central office administrators' preexisting beliefs influenced the evidence that they used to make decisions. Specifically, the preexisting content knowledge of central office administrators influenced the data that were noticed and led to 16 out of the 23 decisions made by the group in the study. Collaborative analysis prevents a jaded data analysis due to the central office collection of data based on current knowledge. A collaborative professional learning community utilizes stakeholders with different skill sets and equal influence to initiate change without the influence of past practice (Dufour & Eaker, 1998).

Collaborative interpretation. The remainder of the data use framework (Coburn & Turner, 2011) describing the process of data use is closely related to the actual act of decision-making. Coburn and Turner (2011) discuss the process of interpretation and

34

constructing implications for action. Coburn and Turner draw from Weick (1995) as well as Spillane and Miele (2007) to strengthen the connection between stakeholders interpreting data, making decisions, and acting on the data. Honig's (2003) framework follows a similar process. Honig utilizes the broad term of use where stakeholders are interpreting, storing, and retrieving data.

Spillane and Miele (2007) label the action of noticing data that align with preexisting beliefs and current knowledge as "selective attention" when we notice data that is relevant to our goals (p. 49). Spillane and Miele (2007) developed a meaning of interpretation that aligns closely with Coburn and Turner's (2011) concept of how stakeholders notice data. Spillane and Miele (2011) state that interpretation follows a progression, whereby stakeholders construct interpretations of data based on previous interactions with similar types of information. Hill's (2001) findings supported this when teachers attempted to collaboratively interpret policy in a professional learning community. Hill found that a committee of teachers interpreted state policy regarding mathematics curriculum completely different than the intended interpretation of the policymakers. Considering the great amount of time spent on this by teachers, the misinterpretation could not be the lack of attention to the policy, but it was due to interpreting the policy similarly to what they already understood. Consequently, current practice will change very little.

Coburn's (2001) study further illustrates the connection to the interpretation of data in a collaborative educational setting. Coburn (2001) conducted a case study in a California elementary school to examine how teachers interpret policy regarding reading instruction. She focused on teachers making meaning of policy collaboratively, not

individually. Coburn (2001) found in this study that teachers gained access to a range of interpretations through collaborative interaction with other teachers. This was a powerful finding as some interpretations transformed preexisting practice. Honig (2003) found similar results in her case study examining central office stakeholders. She found that data interpretations often happened in group settings such as meetings and group conversations.

Honig (2003) and Coburn (2001) found that group analysis led to data interpretation in education, but Hutchins (1995) demonstrated the possibility for individual interpretation of data. The aforementioned research findings may describe the ability of educators to analyze data in a collaborative setting that continues individually in their classroom. The most important component of implementing a data driven culture is the use of data to guide instruction by teachers in the classroom. Weick, Sutcliffe, and Obstfeld (2005) highlight the notion that making sense of the data is the intersection between interpretation and action. If classroom teachers reach this intersection, the result of improving student outcomes will follow.

Acting on data. The final part of the data use process is the decision to act or the decision not to act on the data as a result of searching, noticing, and interpreting. Coburn and Turner (2011) refer to this transition from interpretation as constructing implications for action. They refer specifically to the decision that can be made resulting in action or the decision that leads to inaction. For example, a teacher can make the decision to act by changing instruction due to the data analysis. Conversely, a teacher can decide not to act because the findings are out of her control such as standardized test design or the home life of the student. The decision made from data is influenced by pre-existing beliefs

aligning with the conviction of Coburn and Turner (2011) that pre-existing beliefs shape the data that are noticed in the beginning of the process. Coburn et al. (2009) found in their longitudinal study that teachers formed assumptions from data based on their past experience with mathematics standards and programs.

Honig (2003) describes this decision-making phase of the data use process simply as use. She states that this is the point in the process where an educator decides to act or not act based on the data. Honig includes three sub-processes that collectively make up use. Honig includes the interpretation, storage, and retrieval of data in the action phase of the data use process.

Scholars have observed that the outcome of the data use process can be defined as first order or second order change. Argyris and Schön (1996) refer to first order change as change in daily practice and second order change as a deeper change in educational philosophy. In addition, researchers associated with the data use process agree that the decision made may be not to act on the evidence (Honig, 2003; Coburn & Turner, 2012). Consequently, the learning that occurred may be inconsequential to current practice.

Conversely, scholars differ when it comes to the improvement that occurs as a result of change (Argyris & Schön, 1996; Honig 2003; Marks & Printy, 2002). Improvement is not a guaranteed result of change in an organization. Marks and Printy (2002) investigated the influence of transformational leadership and instructional leadership on schools. They found that change associated with transformational leaders along with shared instructional leadership was beneficial. However, change resulting with only transformational leadership was not always beneficial. This suggests that change does not simply equate to improvement, but that the appropriate combination of change

will lead to improvement. The fact that change does not always equal improvement helps to explain why some school districts benefit from a data driven culture and some do not.

Scholars who ascribe to this point of view, that improvement occurs as a result of change, often state that learning occurs as a result of some type of improvement (Marks & Printy, 2002). This point of view may be due to the high stakes accountability associated with improved outcomes. The other view emphasizes improvement less as it can be ambiguous due to a lag between practice and feedback on performance. In this view, organizational learning occurs when stakeholders search and use data to make decisions. Improvement may or may not occur. The process of search and use will distinguish organizational learning, not improved outcomes (Argyris & Schön, 1996). Honig (2003) found, in her study that investigated central office decision-making, that the motivation of central office administration to create positive change was influenced greatly by a perceived need to improve. The findings indicate that organizational learning processes were more effective in changing policy using district administrators that collected data, but actual improvement was not measured within the study.

Professional Learning Communities

Many professionals in education have been searching for an effective process to initiate and sustain change in school districts and the schools within them. The culture of professional learning communities has been introduced in education as a format to initiate and maintain positive change in schools. According to Dufour and Eaker (1998), a promising strategy for sustained, substantive, school improvement is developing the ability of school personnel to function as professional learning communities. The literature states that the transformation of culture is much deeper than common surface

38

characteristics that professional learning communities demonstrate (Bullough, 2007; Dufour & Eaker, 1998; Putnam et al., 2009). Putnam et al. (2009) suggest that the deep culture of a professional learning community has an impact on teachers' morale, energy, thinking, and instruction, resulting in increased learning achievement.

The first common element of the professional learning community is the implementation of a shared mission, vision, and values of the community. It is clear that one key to the success of the group is a shared vision and mission. Dufour and Eaker (1998) emphasize that the shared values of the group are the core of the community and the foundation for every stakeholder in the school system.

A professional learning community must be able to establish collaborative norms and parameters to collectively question the status quo (Love, 2009). The element of collaboration within community norms is the element that creates the cooperative learning that happens as a result of questioning current ineffective practice. People who engage in collaborative team learning are able to learn from one another, thus creating impetus to improve (Dufour & Eaker 1998). Fullan (1982) supported this by stating that professional learning communities must foster an open exchange where teachers can explore elements of their own practice.

Professional learning communities are much more than traditional study groups, formal courses, or traditional in-service training. One of the major differences may be in the accountability that is a part of the professional learning community culture (Putnam et al., 2009). Also, according to Dufour and Eaker (1998), what separates a learning community from an ordinary school is its collective commitment to guiding principles and beliefs of the stakeholders. Dufour and Eaker (1998) explain that an important

characteristic of a professional learning community is persistent discomfort with the status quo and the fact that professional learning communities must be assessed on results rather than intentions.

Dufour and Eaker (1998) and Putnam et al. (2009) have very similar research based strategies that they emphasize pertaining to successful professional learning communities. They focus on shared values, collaboration in a safe environment, shared learning with peer observations and promoting an action oriented team. Fullan (2007) would agree with the importance of the previously stated characteristics, but approaches it differently and seems to be more critical. Fullan (2007) agrees that a collaborative vision or ownership is necessary for success, but differs from the other authors by saying that the vision is more of an outcome of a quality change process than it is a precondition for success. In addition, Fullan (2007) and Dufour and Eaker (1998) support the use of all stakeholders with different skill sets and equal influence to initiate change without the influence of past practice. The authors among the professional learning community and the literature reviewed on data based decision-making intersect with the conclusion that collaborative analysis is beneficial to initiate positive school change (Coburn & Turner, 2011; Dufour & Eaker, 1998; Honig, 2003; Putnam et al., 2009,).

Collaborative models that use data. I describe the work of Boudett et al. (2005) and Love (2009) as "how to" literature. The "how to" literature outlining a specific process of data analysis became prevalent as the influences to analysis arose. Boudett et al. (2005) and Love (2009) analyze data with the philosophy of collaborative inquiry of professional learning communities as the protocol focusing on data analysis. The school

40

district that represents the case study in this research implemented the protocols using a district data team.

Love's (2009) process of collaborative inquiry grew out of a three-year project funded by the National Science Foundation and collaboration between the Technical Education Research Center (TERC) and WestEd. The goal of the project was to prepare data coaches that would lead the charge in leading the creation of a data culture in school districts. The project led to results that included dramatic improvements in student learning, narrowing of achievement gaps, and changes in school culture. The concept uses the professional learning community model with a focus on DDDM. This study will fill the gap left from the aforementioned project, as it did not investigate the support needed from the central office.

Boudett et al. (2005) developed a similar process of collaborative analysis through the Harvard Graduate School of Education's course titled Data Wise. The course led to a book used by practitioners to implement a process of data analysis in schools. The Data Wise research is ongoing as the school of education at Harvard investigates the best practices that surround the Data Wise process.

The regional high school district in this study utilized the models developed through the work of Love (2009) as well as Boudett et al. (2005) to create the district data team. The district data team is a professional learning community made up of administrators and teachers from each of the four schools in the district led by central office administration. The data team demonstrates Dufour and Eaker's (1998) four characteristics that must be present to be a professional learning community. The characteristics necessary are: time made for collaboration, a clear vision collaboratively

41

created, training as a team, and acceptance of collaborative norms to cooperate effectively. The data team initiates the process by making observations of visual data that leads to identifying problems and action plans that will become remedies for the problems that were diagnosed. The collaborative professional learning community format emphasizes the point that one does not need to be a statistician to analyze data. In fact, the observations from team members without a math background added depth to the projects as those members have a slightly different lens compared to team members with a math background.

Culture of Data Use

School districts need to maintain the DDDM process to promote a culture of data use for continuous improvement. Sutherland (2004) conducted a study to investigate how data use can contribute to a culture of continuous improvement. She found that a culture of data use could occur if organizational members think of data use as something that will facilitate the process of improving student outcomes instead of punitive information. In addition, the findings summarized the need to collaborate, communicate, and demonstrate transparency to build a data culture. Sutherland (2004) posits that an organization that operates in a data driven culture initiates data use with extrinsic motivation such as legislative mandates, but must become intrinsic for individuals so that personal benefit can be realized. This, along with distributed leadership, created a data culture in some schools in the study.

Sutherland's (2004) conceptual framework outlined the characteristics of a data culture using the work of Earl and Katz (2002). Earl and Katz (2002) posit that a collaborative process of data analysis is necessary, as groups will develop a common

purpose while working together to solve a problem. The collaborative process and common purpose create a sense of urgency that stimulates a process of action needed to solve the problem at hand. In addition, they include the act of making time to analyze data for organizational members, as this is a common barrier to data analysis in the literature (Datnow et al., 2006; Marsh et al., 2010). Last, Earl and Katz (2002) believe that a data culture promotes using stakeholders that do not have an immediate interest in specific projects to critically review the data from a different lens. This promotes an open-minded view of the data, ultimately focusing a group on the final outcome of the project. The conceptual framework created by Sutherland (2002) provides clarity toward the requirements needed to maintain a culture of data use.

Central office and school relationship. Research established that the central office matters when initiating and supporting change in school districts (Honig, Copland, Rainey, Lorton, & Newton, 2010). The role of DDDM has received attention in the literature (Kerr, Marsh, Ikemoto, Darilek, & Barney, 2006; Wayman & Cho, 2008). Honig and Venkateswaren (2012) posit that if federal policy prompted the use of data in schools then the central office must be involved. The literature reviewed investigated the use of evidence from the central office (Honig & Coburn, 2008), improvement of student achievement (Datnow et al., 2006), data use within curriculum and instruction (Moll, 2009), and data use from an organizational context (Farley-Ripple, 2012; Wayman, Jimerson, et al., 2012).

Coburn et al. (2009) expose not only the importance of central office leadership, but also the importance of consistent leadership. In their study of urban schools, each change in superintendent leadership created a new philosophy on how to make decisions

using evidence for the schools. Coburn et al. (2009) noted in the literature that the change in leadership created negative consequences regarding the DDDM culture due to the philosophy differences of the incoming and outgoing leadership. In a similar study regarding leadership and data use, Wohlstetter et al. (2008) applied the principal-agent theory to study the relationships between the central office and schools. The principal-agent theory allowed them to investigate how school district leaders empower a network of constituents to carry out a data culture within the schools. Wohlstetter et al. (2008) reported in their conclusion that superintendents and school district leaders recognized the importance of central office support by centralizing curricula and data information systems. In addition, they concluded that DDDM should be cultivated with strong system level support from the central office leadership for continued improvement within the schools of the district.

Honig (2003, 2004) is prominent in this research that takes the central office into account in the area of data use. Other researchers investigated data use exclusively in the central office (Moll, 2009). Moll (2009) stressed the importance of the central office in the improvement of student achievement. However, the push for student achievement forces school district central offices to reconsider the top-down approach in favor of a more collaborative relationship between the central office and schools (Honig & Coburn, 2008). Wayman, Cho, et al. (2012) investigated DDDM in three different school districts. They found that the school district with a strong data driven relationship between the central office and schools had a central office administrator specifically to support data use across the district. The specificity of the central office position facilitated the district's ability to support the school's data driven efforts.

44

The research that included the central office approached studies from a systemic perspective often utilizing organizational learning, organizational routines, as theoretical frameworks (Coburn et al., 2009; Honig & Coburn, 2008; Spillane, 2012). The literature in this section highlights the importance of the central office in creating a data culture in schools (Earl & Katz, 2002). The importance of the central office has been studied in the past (Datnow et al., 2006; Wohlstetter et al., 2008). Most important for this study, Honig and Venkatewwaren (2012) posit that the central office and schools matter equally in the process of using data for positive change and improvement.

Conclusion

The problem that stimulated this study is the achievement gap between ethnic and socioeconomic subgroups as well as the barriers to DDDM. The trend for improvement investigated in this study is the use of data to make informed decisions that contribute to improving practice. Federal and state policies have enforced the need for educators to base decisions on data. Gaps in the research have prompted an investigation of data based decision-making from an organizational perspective (Coburn & Turner, 2011; Honig & Venkateswaren, 2012; Spillane, 2012). The study investigated the influence that a district data team, directed by the central office, has on the data driven culture of the schools.

The data use process of Coburn and Turner (2011) and Honig (2003) provides a clear picture of what data use looks like in school districts. Data were collected from teachers and administrators related to the data use process of searching, noticing, interpreting, and acting on data in the form of an educational decision. The data use process grounded in literature allowed me to accurately investigate the influence of the district efforts to build a data culture on the district's Title I schools and stakeholders.

45

The literature reviewed included the positive influence of data when used within a collaborative analysis among different stakeholders. Professional learning communities and DDDM have been used in combination to initiate organizational change in school districts. Finally, since the influence of policies prompted the use of data in schools, educators have been attempting to overcome barriers such as leadership ability, knowledge of data analysis, time constraints, and the access to data by stakeholders. This study provides findings on the influence of a district-wide data team on the data culture of the individual schools.

Chapter 3

Methods

Introduction

This study was designed to uncover how a district data team influences data driven decision-making (DDDM) in schools. The district in this case study implemented a district data team three years prior to this study in 2010-2011. The district data team utilized a process of collaborative data analysis in a professional learning community (Boudett et al., 2005; Love, 2009). The data team was implemented utilizing administrators and teachers from each of the four schools across the district in an effort to filter the data driven process and culture into the school buildings. The data team's initiative was self-initiated as a proposal to the school district superintendent in an effort to create a data culture across the district. This study investigated the perception of teachers and administrators regarding the data culture in their schools. The study focuses on the following research questions:

1. How do the regional high school district teachers and administrators of Title I schools perceive the use of data to make informed decisions from a district and building perspective?

2. How do the regional high school district teachers and administrators of Title I schools use data to make educational decisions?

3. How do school administrators and teachers perceive the district data team in relation to their building based data use efforts?

47

4. How did the central office and building administrative leadership impact a change in the organization and schools?

The purpose of this chapter is to discuss specific methodologies and procedures in the study to answer the research questions. Information is provided regarding the research design, rationale for the research design, detailed research questions, sampling techniques, setting of the study, data collection, and analysis techniques.

Research Design

The strategy and method of inquiry was conducted utilizing a single embedded case study design. According to Yin (2009) one rationale for utilizing the single case study method is that it is a unique case. The data for the study was gathered in a unique setting within a regional high school district in New Jersey. Embedded case studies can be conducted when the single case has embedded units of analysis (Yin, 2009). The study design allowed me to view the district from a systemic, organizational perspective while recognizing each of the three schools as a unit of analysis. I collected qualitative data from interviews, focus groups, and document examination.

The purpose of this single embedded case study was to examine how a district data team coordinated by the central office influences the data driven culture in the district's schools that receive Title I funding as per the No Child Left Behind Act of 2001. The questions guided the investigation to discover how teachers and administrators use data to make decisions, their perception of DDDM, and the impact made by central office and building leadership to initiate the change to a data driven culture. Case studies are used in a variety of environments, including educational organizations, to contribute to our knowledge of a particular phenomenon (Yin, 2009). The single embedded case

study of a regional high school district researched the influence of a district level data team coordinated by the central office on the data driven culture in the schools.

Scholars have described case studies as a method for allowing the researcher to focus on a specific aspect of a group or organization that is of special interest to the researcher (Creswell, 2009; Yin, 2009). For the purpose of this study, the specific interest was to examine DDDM in my current workplace setting. Datnow, Park, and Wohlstetter (2006) utilized a case study design in a similar study analyzing DDDM across the district including the central office, schools, and classrooms. They concluded that the case study design allowed them to gather the evidence necessary to reveal the systemic support that is needed for effective use of data. I employed a similar design to answer the research questions designed for this study.

Research Questions

The single embedded case study design used qualitative data to answer the research questions of the study. The questions were designed to collect data from teachers and administrators of a district data team as well as teachers and administrators that were not acting members of the collaborative team. The mission of the district data team was to funnel the knowledge of the data use process from the experienced team members to the building teachers and administrators to create a data driven culture in the schools. I collected qualitative data from the team members and non-team members to investigate the influence of the district data team on the school's ability to create a data driven culture and make building level decisions based on data. The research questions were designed to gather data to discover how teachers and administrators used data to make decisions, their perception of DDDM, and the impact made by central office and building

leadership to initiate the change to a data driven culture. This allowed me to determine their knowledge of DDDM and the ability to implement a data driven culture that they gained from the data team and how they view their schools through that lens. In addition, the questions allowed me to ascertain the level of data driven knowledge of non-team members and how they perceive the data driven culture in their school buildings. Collecting data from both team and non-team members allowed me to assess the influence of the district data team on the schools and the effectiveness of the district data team on the data driven culture.

Sampling

Researchers have criticized the lack of specificity in qualitative studies when describing sampling (Coyne, 1997). In reality, sample selection has a major influence on the quality of a research project. Coyne (1997) outlined a paper in an effort to provide clarity between purposeful and theoretical sampling. First, researchers agree that all types of sampling can fall under the overarching term of purposeful sampling (Coyne, 1997; Patton, 1990). The common characteristic in qualitative research is that interview participants will be chosen, purposefully, based on their ability to provide rich information.

On the contrary, theoretical sampling allows a researcher to choose the data to collect next based on the analysis of current data. The process is to extract codes from the data through constant comparative analysis and to use codes to guide the next data collection based on the needs of the study (Boeije, 2002; Glaser, 1965). However, theoretical sampling involves purposeful sampling in the initial stages of data collection

(Coyne, 1997). The next sample that will continue to provide rich data is based on the needs that develop as a result of the current data analysis.

This study initiated data collection with a purposeful sample from the established district data team. The decision to purposefully select data team members to gather data was based on the previously mentioned literature and due to the fact that data team participants are data rich regarding the process of DDDM in the district. During the analysis of the data from the current informative data team through constant comparative analysis, the decision was made as to which school administrators and teachers were to be utilized for data collection (Boeije, 2002; Glaser, 1965). The selection of non-team members for data collection initiated theoretical sampling that guided the remainder of data collection.

Setting and Participants

The setting of the study was a regional high school district in southern New Jersey. The New Jersey Report Card data indicate that this district has a 97% graduation rate and 92% of the students going on to attend a two or four year college or university. The report card reveals that the student body is 90% white with a less than 10% rate of economically disadvantaged students. The district includes four high schools with an alternative program that serves grades 9 to 12.

The rationale for utilizing the single case study method is that it is a unique case (Yin, 2009). This school district is one of four regional school districts in the county and it represents the largest of all districts in the county. According to Yin (2009), embedded case studies can be conducted when the single case has embedded units of analysis. The individual schools in the regional district represent the embedded units in the case study.

The district was conducive for this study, as it has been building a data culture through specific initiatives over time. The organization employed a district wide data team that performs a method of collaborative data analysis. The structure and membership of the data team encourages a natural funneling of data and knowledge of the process back to the buildings. The team was made up of representatives from each school building. Those representatives are responsible for reporting findings, following up on action plans, or continuing the analysis at the building level. This process stimulated the use of data among teachers and administrators across the district.

The school district data team had 22 members on the team in total. Each school had one administrator, one counselor, and three teachers representing their school on the district team. In addition, the team had a member from the alternative program within the district and a participating central office staff member who directs it. The school district has 615 teachers in total, six principals among four schools, and 33 assistant principals that serve as disciplinarians and supervisors of instruction.

Data Collection

The data for the study was collected through semi-structured, open-ended individual and focus group interviews with data team and non-data team participants (Appendices A, B, and C). The interview protocol was constructed utilizing the case study research questions to develop a series of more probing questions to elicit useful data (Creswell, 2009). The semi-structured interview format allowed flexibility to admit new questions based on the participant's response creating a conversational flow to the interview. Craig (2009) suggests utilizing multiple forms of data in an effort to achieve triangulation and validity of findings. In addition to the aforementioned interviews, data

were collected through the examination of district documents (Creswell, 2007; Yin, 2009).

According to Lambert and Loiselle (2007), the focus group can be used either as a primary means of data collection or as a supplement to a multi-method approach, depending on how it fits into the overall research plan. I acted as the facilitator of the four group interviews. This format was conducive, as the focus group consisted of current data team members with a rapport about data. The participants were more willing to offer information during group interviews as they currently work together.

 Focused interview data captures evidence that contributes to answering the research questions regarding the impact of the district data team on the data driven culture of the school (Yin, 2009). Yin (2009) calls the interview "one of the most important sources of case study information" (p. 106). According to Yin (2009), knowledgeable interviewees can provide important data regarding human affairs and events. The district data team was chosen due to their knowledge of the DDDM topic as well as being quality informants regarding the data culture in their respective schools.

Interview protocol. According to Yin (2009), the questions written in the interview protocol should be questions that act as reminders to the researcher regarding the data that needs to be collected. In addition, Yin (2009) suggests listing the questions and where the researcher might obtain that data. I used Yin's (2009) process to design the interview protocol questions. The main questions were used to keep me on track regarding the data needed and the focus questions asked of the individual case. Interview protocols were developed for data team member focus groups, administrators, and teachers. Interview protocol questions were developed from the case study research

questions inquiring about the impact of the district data team on the district school's data driven culture and the probing research questions listed at the beginning of this chapter.

Data Analysis

The analysis of the data consisted of memos and a method of coding to record reflective notes and segment the data into categories (Johnson & Christensen, 2007). According to Johnson and Christensen (2007), it is beneficial to record reflective notes during the study. The ideas and insights can be used as data during the analysis phase. According to Saldaña (2009), analytic memos document and provide an opportunity to reflect on the entire process. I employed Saldaña's (2009) method of concurrent memo writing and coding during data analysis. The memos gave me an opportunity throughout the study to reflect on all aspects of the methodology.

The data from the interview participants were transcribed and analyzed using the constant comparative method (Boeije, 2002; Glaser, 1965), descriptive first level coding, and second level pattern coding (Saldaña, 2009). The constant comparative method allowed me to compare and contrast interview data between individual interviews and between different teacher and administrator interviews (Boeije, 2002). Descriptive first level coding allowed me to assign a label to passages of transcribed data. Second level pattern coding allowed me to analyze the codes developed from the first level to further breakdown those codes into themes of data. I investigated pattern codes that appeared across multiple data sets such as individual interviews, focus group interviews, and examining district documents. Triangulating the data by looking for codes across multiple data sets increased the validity of the findings. A codebook was developed as the codes emerged from the data. The purpose of the codebook was to maintain organization of the

codes that developed to facilitate ongoing analysis. The codebook included the code, a brief definition, a full definition if needed, guidelines for use of the code, and examples (Saldaña, 2009).

Validity

It is important to design a study so that it represents quality research that is trustworthy, credible, confirmable, and dependable (Yin, 2009). According to Maxwell (2005), "validity is a goal rather than a product" (p. 106). The goal to produce a valid study was achieved through a variety of measures in the design of the study and the methods chosen. These measures to ensure validity included using the constant comparative method, triangulation of data, collecting multiple sources of data, and using consistent protocols throughout the study.

Utilizing multiple forms of qualitative data over time within the case study gave me the opportunity to produce valid results (Creswell, 2009). Utilizing the constant comparative method and finding highly regarded comparisons increased the internal validity (Boeije, 2002; Glaser, 1965). According to Fielding and Fielding (1986) as cited in Maxwell (2005), triangulation of data does not guarantee validity but ultimately, threats are eliminated by data. Also, Maxwell (2005) states that a practical approach is to address validity in the research design. The ability to collect different forms of data in a case study along with purposeful and theoretical sampling (Coyne, 1997) provided a flexible approach utilizing data. In addition, this established a relationship between the conclusion of the study and the reality of finding solutions to research problems (Maxwell, 2005).

55

Ethical Considerations

The study proposal posed low risk to the participants' psychological, physical, or social well-being. According to Teddlie and Tashakkori (2009), in minimal risk projects the participants will not experience greater stress than they would on a typical workday. As a district that is building a culture of DDDM, the content of the questioning was not taxing and the participant time invested was minimal. The quantitative results were used to influence the choice of participants for the more extensive qualitative interviews. The interviews were conducted with participants that exhibit proficiency for DDDM and non-team members that may or may not be proficient. Choosing willing participants, comfortable with the content, decreased the risk for that component of data collection.

Conclusion

O'Day (2002) found in her study that schools' use of data proceeded as a "symbolic exercise in responding to formulaic requirements of the district office" (p. 17). On the contrary, Wohlstetter et al. (2008) found that central office data use was dependent on a "bottom-up information flow from school-level participants so that the central office had access to the information necessary for accurately assessing the causes of performance at each school" (p. 248). The two studies contradict each other regarding teachers and administrators depending on other levels of the organization for data. The aforementioned quotes emphasize the specific need for scholars to research how to build a data driven culture including all levels of the organization. This study was a starting point in necessary research regarding DDDM from a systemic organizational perspective.

The research design using a single embedded case study was chosen in an effort to study the school district from a systemic lens including the embedded subunits of the

individual schools across the organization (Yin, 2009). The questions aligned with the design were constructed to assess the influence of a district data team on the data driven culture of the schools. The district data team is made up of teachers and administrators from each school and coordinated by the central office.

The data collection utilized individual interviews, focus group interviews, and document examination as the primary sources of data. Both individual and focus group interviews were included in the study, as Yin (2009) suggests that the interview is one of the most important sources of data. The analysis that was conducted during data collection used the constant comparative method and compiling the data for analysis by organizing the data in categories, themes, and specific codes. The measures to ensure validity included using the constant comparative method, triangulation of data, collecting multiple sources of data, data replication, and using consistent protocols throughout the study.

Chapter 4

Data Driven Context of the District

The first part of this chapter will provide background context for the school district and participants. The second part of the chapter focuses on the content of several district documents analyzed to provide the district's current context for DDDM. The district documents provide data regarding the current commitment to a data-driven culture from the district and school perspective. The documents include Title I guidance documents, the district's strategic plan, the school strategic plans, district policies and regulations, principal and teacher evaluation tools, and curriculum documents for the districts instructional model professional development. Finally, the chapter will end with a summary of the conceptual framework of the study framed within the context of educational change, collaborative leadership, and professional learning communities.

Background and Context

The purpose of this case study was to examine how a district data team coordinated by the central office influences the data-driven culture in the district's schools that receive Title I funding as per the No Child Left Behind Act of 2001. I implemented the data team concept in the district researched during the 2010-2011 school year. My job description at the time prompted me to investigate a method of data analysis that would promote a data culture in the district (Earl & Katz, 2002). The proposal that I outlined highlighted the implementation of a central office data team model. The process of analysis was collaborative and aligned to models developed by Love (2009) and Boudett et al. (2005). The model that I proposed to the superintendent included a

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framework to accomplish educational change through collaborative leadership within a professional learning community setting to establish a culture that promotes DDDM. The members, chosen by the central office administration, represent stakeholders from each school with equal representation. The members included supervisors, counselors, and teachers within the English, math, and science content areas. The mission of the central office, when developing the district data team, was to funnel the results of the data analysis projects and the knowledge of the data use process to the schools, creating a systemic data culture. After three years of implementing the district data team it is important to investigate to what extent the mission has been fulfilled.

Research site. The Lakeside School District researched has four schools serving students in grades 9 through 12 that come from eight different school districts prior to high school. Three out of the four schools receive Title I funding for students that are economically disadvantaged and academically at-risk. The Lakeside School District is one of 31 high school-only school districts in New Jersey (New Jersey Department of Education, 2013). The total enrollment is 7,000 students with 14% of the students classified as special education and 10% of the student body considered economically disadvantaged receiving free or reduced lunch as per the National School Lunch Program (Ralston, Newman, Clauson, Guthrie, & Buzby, 2008).

Lakeside High School has the highest number of economically disadvantaged students of the three Title I schools studied with 13%, followed by 11% at Sea View High, and finally 9% at Chesapeake High. In addition, Lakeside has the highest percentage of ethnic minority students followed by Chesapeake then Sea View. The three Title I schools have very similar academic performance in math and English standardized

testing proficiency, SAT scores, and graduation rate. The biggest difference was found in AP test scores. The rate of students scoring 3 or better is 15% lower at Sea View than at Chesapeake and Lakeside.

Participants. Each focus group interview consisted of five members of the district data team that are on staff at the respective schools. The group participants included supervisors of science, special education, and one that supervised math and science, as well as a counselor, and teachers in math, English, and science. In addition to the focus group interview, I conducted six individual interviews of non-data team members at each school. The six individual interviews aligned with the focus group by including a counselor, teachers in math, English, and science, and a supervisor. I included the principal of the building in the individual interviews to help address the research questions that led the investigation of leadership. A summary of, the participant matrix that highlights demographic data such as position, years of experience, highest degree held, and participation in a professional development course provided by the district on the district's instructional model is provided in Figure 4. I included this course in the document analysis as the professional development has a module specific to using data to drive instruction in the classroom. The impact of this module was evident in the interview data collection and analysis.

Lakeside High School Focus Group Interviews

Position	Years Exp.	Degree	District PD Complete
English Teacher	9	MA	Both
Math Teacher	14	BA	Both
Counselor	13	MA+60	Course #1
Science Teacher	12	BA+15	Both
Science Supervisor	9	MA	Both
	Total: 57, Avg: 14	3/5	

Lakeside High School Individual Interviews

Position	Years Exp.	Degree	District PD Complete
Principal	14	MA	Both
Math Teacher	13	MA+30	Both
English Teacher	5	BA+15	Both
Science Teacher	9	MA+15	Both
Counselor	21	MA+45	Course #1
Math Supervisor	30	MA+45	Both
	Total: 92, Avg: 15	5/6	

Chesapeake High School Focus Group Interviews

Position	Years Exp.	Degree	District PD Complete
English Teacher	26	BA+15	Both
Math Teacher	14	BA+15	Both
Counselor	9	MA+45	Course #1
Science Teacher	6	MA	Both
SPED Supervisor	22	MA	Both
	Total: 77, Avg: 13	3/5	

Chesapeake High School Individual Interviews

Position	Years Exp.	Degree	District PD Complete
Principal	29	MA	Course #2
Math Teacher	4	MA	Both
English Teacher	2	BA	Both
Science Teacher	12	MA+60	Both
Counselor	19	MA+30	Course #1
English Supervisor	17	Ed.D	Both
	Total: 77, Avg: 13	5/6	

Sea View High School Focus Group Interviews

Position	Years Exp.	Degree	District PD Complete
English Teacher	9	MA	Both
Math Teacher	9	MA	Both
Counselor	25	MA	Course #1
Science Teacher	6	MA	Both
SPED Supervisor	14	MA	Both
	Total: 63, Avg: 11	5/5	

Sea View High School Individual Interviews

Position	Years Exp.	Degree	District PD Complete
Principal	10	MA	Nothing
Math Teacher	13	BA+15	Both
English Teacher	9	BA+30	Both
Science Teacher	23	MA	Both
Counselor	26	MA+45	Course #1
Science Supervisor	14	MA	Both
	Total: 95, Avg: 16	4/6	

Figure 4. Participant Matrix

Lakeside High School has 10 administrators, 178 teachers, and nine guidance counselors. The average number years of experience were 14 for the Lakeside data team focus group. Three out of the five members held master's degrees in education. All of the focus group participants participated in professional development on the district's instructional model.

The Lakeside individual interview participants had an average of 15 years of experience, and five out of six held master's degrees. All of the individual interview participants at Lakeside participated in professional development on the district's instructional model. The Lakeside principal for the past seven years has been in education for 14 years and held a supervisor's position for two years prior to receiving the principal's position at Lakeside. This is the only district that the principal has been employed by since starting his career in education.

Chesapeake High School has nine administrators, 210 teachers, and 11 guidance counselors. The average number years of experience were 13 for the Chesapeake data team focus group. Three out of the five focus group members held master's degrees, and all of focus group members participated in professional development on the district's instructional model.

The Chesapeake individual interview participants had an average of 13 years of experience, and five out of the six participants held master's degrees. All of the participants participated in professional development on the district's instructional model. The principal of Chesapeake has 29 years of experience at the school with the last three as principal. This is the only district that the principal has been employed by since starting her career in education.

62

Sea View High School has six administrators, 132 teachers, and eight guidance counselors. The average number years of experience were 11 for the Sea View data team focus group. All of the Sea View focus group members held master's degrees, and all of them participated in the professional development on the district instructional model.

The Sea View individual interview participants had an average of 16 years of experience, and four out of the six held master's degrees. All of the individual interview participants participated in professional development on the district's instructional model except the principal. The principal has 10 years of experience in the district, but has worked in other school districts in the past compiling around 25 years of experience in education. The district's professional development on the instructional model is mandatory for teachers, but optional for administrators. However, all of the administrators must take the course specifically on observing and evaluating the instructional model. The Sea View principal is the only administrator that was not formerly a teacher in the building, consequently, did not take both teaching courses prior to administration.

As previously stated in the methodology, the focus groups were made up of the data team members from each school in the study. The groups were invited to participate by electronic mail with the informed consent form attached. All of the focus groups were very willing to accommodate by participating in the study. The focus group and individual participants from each school in the study were very similar when comparing experience, education, and participation in district professional development. The calculated difference between the focus group participants and the individual interview participants was the participation on the district data team. Having similar characteristics,

63

but different experiences regarding membership on the data team, allowed me to investigate the influence of the central office district data team on the school's ability to use data.

District Documents

As mentioned above I analyzed district documents such as the district and building strategic plans, district policies and regulations, the Title I Grant guidance, the teacher evaluation tool, and the curriculum from the district's instructional model professional development course. The purpose of choosing the aforementioned documents was to provide a foundation of data that would indicate the district's commitment to create a data-driven culture in the district. The documents selected govern and guide the actions of the administrators and teachers in the district and would demonstrate the importance of DDDM. The district policies and regulations have evolved since the origin of the district's first school in 1958. The most recent district strategic plan is dated 2008. Two of the school's strategic plans were updated in 2013, and the strategic plan of the third school was completed in 2007. The building strategic plans are developed as part of the Middles States Association of Colleges and Schools accreditation process. The district's mandatory professional development on the instructional model has been based on John Saphier's text *The Skillful Teacher* (Saphier, Haley-Speca, & Gower, 2008).

Title I documents. The study's embedded units represent the three schools in the district that receive Title I funding. I analyzed Title I legislation and New Jersey Department of Education guidance documents on implementing targeted assistance

programs for federal and state requirements regarding the required use of data in Title I

schools. Title I, Part A of the No Child Left Behind Act (2001) states:

> Each local educational agency receiving funds under this part shall the State
> academic assessments and other indicators described in the State plan to review
> annually the progress of each school served under this part to determine whether
> the school is making   adequate yearly progress (Sec. 1115).

In addition, the legislature directs deficient schools to "include specific measurable

achievement goals and targets for each of the groups of students identified in the

disaggregated data, consistent with adequate yearly progress" (Sec. 1489).

However, the New Jersey Department of Education request for flexibility in

implementing the Elementary and Secondary Education Act, formerly, NCLB, stated that

the accountability system for New Jersey would eliminate the use of adequate yearly

progress (AYP) and replace it with Annual Measurable Objectives (AMO). The AMOs

are developed in conjunction with specific math and language arts performance data as

well as a detailed school performance report that highlights academic achievement from

standardized test data, college readiness, and post-secondary achievement data. As I

described in the previous chapters, the No Child Left Behind (NCLB) Act of 2001

stimulated the use of data, particularly in the schools receiving funding through the Title I

grant.

The reference to using disaggregated data is evident within the NCLB legislation,

however, the New Jersey guidance provided for school district Title I coordinators

contains only four mentions regarding the use of data. The guidance illustrates the

definition of DDDM and when to use data according to the New Jersey Tile I Office. In

previous chapters I discussed the prevalence of poor federal policy implementation at the

local level (Anderson, 2011). The guidance fails to inform stakeholders on how to use

data during the implementation of Title I programs, consequently contributing to the poor implementation by school districts. The analysis of the Title I document provided an example of a strong emphasis of data use from federal legislation, but the lack of consistency at the state and local level implementation, particularly in the school district studied.

District strategic plan. The district's strategic plan was developed in 2008 through the collaboration of representatives from each stakeholder group within the school district and the community including parents, law enforcement, business people, and local officials. The plan developed a collaborative mission, beliefs, objectives, and strategies that were used to create action plans for change and improvement. The document includes 11 beliefs, nine objectives, and seven strategies (see Appendix D). The mission of the Lakeside High School District:

> A leader in progressive education, is to develop physically and emotionally healthy students who excel in an ever-changing world, accomplished through unlimited educational experiences, a curriculum which exceeds the New Jersey Core Curriculum Content Standards, integration of technology, expectations of higher achievement for all students and staff, partnerships with families and community in a secure, challenging and energizing environment (Strategic Plan, 2008).

The school district mission, beliefs, objectives, and strategies did not have any evidence of a commitment to use data to make decisions in any area. There were seven references to data in the 64-page document. Most of the references were aligned to compiling data or using data to communicate to stakeholders such as alumni, senior citizens, or community members. Two references were connected to student outcomes. First, an action plan to change the current grading system mentioned the necessity to change the student data management system. This plan was created to challenge students

66

academically. The goal of the plan was to implement the use of pluses and minuses in the grading system as an incentive for students. The implementation of this plan was denied after reviewing a more detailed description and the actual benefit if completed. The denial of the plan was unanimous by the superintendent and principals at that time due to an assumption that parents of students would not be in favor of the plan. The second approved plan connected to student outcomes outlines replacing traditional midterms and finals with benchmark assessments in an effort to provide quality data for analysis. In summary, the roadmap of the future for the organization, the district strategic plan, provided only one quality reference toward data-driven decision-making.

School strategic plans. The three Title I schools that served as the embedded units of this case study underwent a strategic planning process through the Middle States Association of Colleges and Schools (MSACS) Commissions on Elementary and Secondary Schools. The accreditation visionary process uses strategic planning as a vehicle for growth and improvement in student performance. Five educators from MSACS conduct the review to determine if the school receives accreditation and to make commendations and recommendations for the future of the school. Lakeview and Chesapeake High School received their Middle States Accreditation in 2013, which will last for seven years. Sea View High School received accreditation in 2007 and is due for a new strategic plan in 2014. As an extension to the district strategic plan, the building plans and the review team final reports, developed through the accreditation process provide a foundation of data indicating the level of commitment in each building toward a data-driven culture.

Lakeside final report. The final report of the visiting Middle States team at Lakeside High School in 2013 contains 15 comments referencing DDDM. Six of the comments served as commendations regarding Lakeside's use of data, and nine of the comments represented recommendations for improvement. The commendations included the use of data in department meetings, curriculum development, and software to improve student performance. The recommendations included comments stating that administrators did not specifically ask teachers in the building for data during the process. In addition, the review team stated that stakeholders mentioned data, but did not use specific data in practice. The review team from the Middle States Association mentioned that the use of data was evident from a district level, but warned that data should be used at the building level specific to the school community. Lastly, the review team recommended that the school data be organized in a visual manner, so that all stakeholders easily understand it. The final report from the Middle States team indicates that data use is evident at Lakeside High School, but may not be the data culture that they would expect at the end of the seven-year strategic plan.

Chesapeake final report. The visiting Middle States team at Chesapeake High School concluded with six commendations in the final report regarding DDDM. Two specific commendations referenced the district data team and the emphasis to maintain the use of the team to analyze data. In addition, the final report commented on Chesapeake's commitment to continuous growth and improvement, and use of data as a monitoring tool. The review team commended Chesapeake for developing procedures to collect and analyze assessments and data of individual learning from school, state, and

nationally based sources. It is clear after analyzing the Middle States report of the visiting team that the team felt as though Chesapeake operated within a data culture.

Sea View final report. Sea View High School, the newest high school dedicated in 2003, currently has a Middle States Accreditation from 2007, just four years after opening its doors. The Middle States Accreditation process in 2007 was very similar to the 2013 process that the other two schools accomplished. The visiting Middle States review team at Sea View High School concluded with seven commendations related to data use and data-driven decisions. The review team praised Sea View's use of data to provide for student needs, track academic progress, career preparation, post secondary preparation and use of standardized testing scores. In addition, the review team commended the school's commitment to using standardized test data and the ability to disaggregate the data to analyze progress and chart new directions as needed. The tone of the final report sounded positive toward the school's use of data and the technology available to gather data. Sea View had a different principal in 2007, but the current principal was one of the internal coordinators at that time. See Table 1 for a summary of review team comments related to data use and the number of those comments that were commendations for all three schools.

Table 1

Middle States Association References to Data in Final Report

School	Year of Final Accreditation	Total Number of Commendations & Recommendations Referring to Data	% of Comments that were Commendations
Lakeview	2013	15	40%
Chesapeake	2013	6	100%
Sea View	2007	7	100%

District policy and regulations. The policies of the district are approved by the Board of Education and provide rules and guidelines in reference to the areas of bylaws, administration, program, teaching staff, support staff, students, finance, property, operations, and community. The regulations are superintendent-approved documents that outline specific steps and guidelines needed to carry out the policies. The policy and regulation document includes 1,371 pages that have been developed and revised since the origin of the district in 1958. I analyzed the document for any indication of using data, information, or evidence to make decisions.

References to data were found on 75 pages—or about 6%—of the 1,371-page document. The job descriptions included in policy had the greatest number of references to data analysis. The various job descriptions of teachers and administrators referenced the expectation to use data 11 times between the two job descriptions and only three times out of 11, specifically mention data analysis. The document included 15 other references to using student information data. In summary, the policies that guide the actions of all stakeholders in the district highlighted expectations that teachers and

leaders in the district will use data and that the district will have a method to keep all student data, however, a policy or regulation did not exist outlining how the stakeholders should use data. The newly implemented principal and teacher evaluation references the use of data by leaders and teachers. The emphasis on data in the evaluation tool is a sign of the times as legislation such as NCLB and TEACHNJ Act are attempting to infuse the use of data for administrators and teachers. The evaluation instruments are Board of Education approved, however, they are not part of the district's policies.

Principal and teacher evaluation. In previous chapters I explained that in 2012 Governor Christie in New Jersey passed the Teacher Effectiveness and Accountability for the Children of New Jersey (TEACHNJ) Act, P.L. 2012, c. 26 ("Act"). As a result of this legislation, the school district adopted new teacher and principal evaluation documents utilized first in the 2013-2014 school year. The principal evaluation tool was developed by school principals and central office directors with strong influence from the ISLLC standards written by the Council of Chief State School Officers (2008). The principal evaluation tool includes expectations to use student-driven data for change and to improve student outcomes and teacher instruction.

Building on the TEACHNJ Act of 2010, the State Board approved regulation N.J.A.C. 6A:10, Educator Effectiveness, outlining specific principal and teacher evaluation policies. The school district applied to the New Jersey Department of Education to develop an evaluation system connected to the professional development utilized since 1998 through Research for Better Teaching. The teacher evaluation tool, developed by teachers and administrators, aligned with the principal evaluation by highlighting the expectation to use data to modify instruction and improve student

achievement. The committee of teachers and administrators along with the guidance from the Research for Better Teaching founder John Saphier, created an evaluation tool that reflected the instructional model that the district has been using for the past 16 years (Saphier et al., 2008). Furthermore, the tool describes what this looks like from a highly effective teacher to an ineffective teacher. The teacher evaluation tool was created in alignment with the district's instructional model since 1998. Analysis of the curriculum for this professional development, mandatory for all district teachers is listed below.

Student growth objectives. As part of the student achievement component of the teacher evaluation, teachers are required to establish student growth objectives (SGO) with input from principals and supervisors (NJDOE, 2013). The student growth objectives are academic goals for the teacher's students aligned to standards that can be tracked through objective measures. The school principals are accountable for the performance of the teachers' students as well. The principal's evaluation will reflect how well they helped the teachers meet their SGOs in their school.

Instructional model professional development. It is the expectation of the district that all of the teachers and administrators in the Lakeside School District complete professional development courses on the district's instructional model prior to receiving tenure in the district. The professional development is provided by Research for Better Teaching (RBT), a school improvement organization founded by Dr. John Saphier in 1979. RBT serves over 100 schools across the country. Turnkey teachers that have been trained by RBT to instruct others on the instructional model teach two courses in the district. The first course is Studying Skillful Teaching and the second course in the sequence is Investigating Obstacles to Achievement. The courses are based on the

instructional model outlined in *The Skillful Teacher* written by Saphier and colleagues (2008). Teachers must complete the series of professional development before the first day of their third year teaching in the district. I analyzed the brochure that describes the district's mission regarding this professional development and the syllabus for each course. The purpose of analyzing the aforementioned documents was to ascertain the knowledge of DDDM that the teachers are expected to utilize in the classroom related to instruction.

The brochure highlighting the professional development for teachers and administrators outlines the mission, who must take the courses, and a description of the instructors. The brochure specifically mentions that the mission is to use research based DDDM to improve instruction. In addition, the brochure emphasizes the positive aspect that the courses provide a common language about instruction between teachers and administrators (Saphier et al., 2008). Also, the brochure indicates that the instructors are district teachers trained on the instructional model and who provide in-house training for all teachers. This mandatory professional development played an instrumental part in creating a quality teacher evaluation tool as per the requirements of the TEACHNJ Act. It was a great benefit for the district to align a mandated teacher evaluation tool with an instructional model that all teachers have been trained in for the past 16 years. The already credible system of professional development reached a new level of credibility by creating an evaluation tool using language and skills deeply embedded in the district's culture relating to instruction when many other districts chose new unfamiliar models.

The syllabus of both teacher courses summarize that a key focus of the course is to cover the skill of using data and assessments to inform planning, teaching, and

reflecting on lessons, including how to collect and analyze data. The course includes an emphasis on providing the teachers with tools to adjust learning based on formative assessment data. The administrators attend professional development related to evaluating teachers within the district's existing instructional model. The administrator course syllabus includes training on examining and experimenting with multiple data sources to support decision making, identify learning problems, and provide a comprehensive picture of teacher's practice.

Conceptual Framework

Before proceeding further into this discussion it is important to reiterate that this study is framed in the context of educational change, collaborative leadership, and professional learning communities. The data team in the study was designed as a vehicle to initiate change, utilizing collaboration with stakeholders in a professional learning community format. Honig (2003) and Coburn and Turner (2011) influenced the data use model for this study that supports the use of DDDM to initiate change in school districts. In addition, Coburn et al. (2009) found that educators will notice data and interpret it more efficiently when discussing it collaboratively. Lastly, the professional learning community concept often used to analyze data has been linked to educational reform and improvement (Bullough, 2007; DuFour, 2004).

In addition, the literature review outlines a specific data use process embedded in past research (Coburn & Turner, 2011; Honig, 2003; Spillane & Miele, 2007). The data use process illustrated in Figure 2 outlines the process that educators go through when using data. The process includes searching, noticing, interpreting, and creating action outcomes from data. The findings are clear that the three schools in this case study have

different strengths and weaknesses in reference to the steps in the data use process. Woven throughout the findings are my references to the effectiveness of the school's data use within the specific data use stages.

Chapter 5

Findings

This chapter is organized to represent the outcomes of the single embedded case study design. Firstly, the single case study, the district, was the overarching primary unit of analysis. Secondly, the data from embedded units, three Title I schools, are organized to answer each research question.

The findings are organized to highlight each school's data team and non-data team participants and the data collected regarding the perception of data use, actual data use, and the influence of leadership, including the central office driven district data team. Finally, the findings are summarized from an overarching district perspective to provide insight into the original question: How does a central office-initiated district data team influence the school's ability to use data?

The study was designed to investigate the impact of a central office-initiated district data team on the school's ability to use data. When this question was introduced in Chapter 1, I explained that the research questions will guide the investigation to discover how teachers and administrators are using data to make decisions, their perception of DDDM, and the impact made by central office and building leadership to initiate the change to a data-driven culture. The research questions that guided the investigation included the following:

1. How do the regional high school district teachers and administrators of Title I schools perceive the use of data to make informed decisions from a district and building perspective?

2. How do the regional high school district teachers and administrators of Title I schools use data to make educational decisions?

3. How do school administrators and teachers perceive the district data team in relation to their building-based data use efforts?

4. How did the central office and building administrative leadership impact a change in the organization and schools?

Research Question One

This section presents the qualitative data findings regarding the perception of DDDM from teachers and administrators that are members and non-members of the current district data team. The themes presented are beliefs and the perception of how teachers use data, the perceived data culture, and the perception of data use by content areas. Furthermore, respondents were clear that decisions could not be made with one data point. It was clear that data can be part of the decision making process, but the humanistic side of the educators that participated expressed using different types of data to make decisions. Some of the participants immediately express the belief that using data is most beneficial to guide and improve instruction. Finally, one leader, when simply asked her belief about DDDM in education immediately responded with her belief about the effectiveness of this in that particular building by saying, "I believe the importance of using data in decision-making is highly relevant and often the impetus for the direction that we go, though it is not the ultimate decision maker … it gives you the facts."

Beliefs. The most prevalent response when participants were asked about their beliefs regarding DDDM was to validate and justify the decisions that they make. A teacher from Lakeside expressed from a classroom perspective, "For me I feel like the

data helps you to verify if decisions are the right choices. Data really helps me decide whether or not decisions actually have some positive outcome or not."

A teacher from Chesapeake High School expressed a need to validate a gut feeling with data by saying,

> The biggest thing is that you cannot just rely on what your intuition is. Just because you think that something should be true, it does not mean that it is true and you need something to back that up before you can make any action. If you base a belief on data and it is true then I can make my action based upon that.

The literature review highlights the criticism of educators for using gut feelings and experience instead of data to make decisions (Bernhardt, 2003 Slavin, 2003. The sentiment of the Chesapeake teachers above reflects the contrary regarding their beliefs about DDDM. The teachers quoted above demonstrated the belief that decisions cannot be based on gut feeling alone.

The counselors interviewed expressed a more intense feeling about the need to validate all data given to students. As counselors in a high school district, they often guide students in the college search and application process. This part of their job seemed to add an emphasis on validating data, as they were guiding students toward future endeavors. One counselor expressed the constant validation to base decisions on data by saying, "I think using data is essential in making decisions. I look at test scores and information so if I have to make a decision I can validate with a parent that it is data driven."

The participants in leadership positions had a view of validating decisions with data that was exclusive to their positions. One administrator at Lakeside High School stated, "I think decisions based on data makes it a lot cleaner. If somebody questions your decision you can present the exact reason why you made that decision and I can make

myself very clear." This expresses the belief of validation and justification, but from a leader's point of view that may be a need to consistently present how he based his decisions.

The principal at Lakeside automatically moved toward looking at his building through a critical lens by claiming, "I do not think many people use data to drive a lot of their decisions, which is sad and I think I probably need to do a better job of infusing that more and teaching how they apply it." The principal was critical of the DDDM culture in his building, but pointed to himself first recognizing the need for improvement. This demonstrates the recognition that data should be analyzed, but the lack of DDDM skill may be preventing it from happening.

Shift in beliefs. During data collection for research question one regarding the perception of data use, the interview participants were asked specifically if they have noticed a shift in the beliefs about data over the past five years. Most of the participants interviewed believed that they have seen a shift in the beliefs about data use in their buildings, but the degree of conviction differed. The participants reported that the shifts in beliefs are due to technology and access and DDDM awareness developed through professional development, to assess curriculum and instruction. However, the perception of the shift was not all positive. Some expressed their perception that teachers are not using data and that they have not witnessed much of a shift.

Technology and access. One of the Chesapeake data team participants expressed her perception regarding a shift in the beliefs about data:

> I think we already said it before … the student information system is one reason. It is accessible and it is very user friendly and whatever student management system you're using is going to have all of that data so it has helped us to see where we can readily get the data.

79

The Lakeside counselor attributed the shift in using data to technology when he said,

> I'd have to say for the counselors again, the big thing for us was bringing the college and career readiness technology to the district. It was a great move. I know most districts use it now but before that, gosh you basically had to do it yourself or it was anecdotal information not vetted data. So … the college and career readiness technology was the big shift for us in terms of data.

Another Chesapeake data team member agreed that there was a shift in the beliefs about using data by referring to comfort with data and technology by saying, "Don't you think the idea of having people being more comfortable with computer use has something do with it?"

The principal of Chesapeake perceived a shift in her building and assumed the reason related to technology access:

> Yes, I think there has been an increase in data use. I definitely see teachers finding more relevance with data and also seeking data for certain things. I'm sure it will also coincide with the use of technology because technology is so widespread and we input so much information, it is easy to extrapolate

She continued by reflecting on the time at the school and how teachers use data by saying, "This is my thirteenth year, I do not think I used data the first couple of years and we definitely use it a lot more or rely on it a lot more now." The Sea View counselor related his perception of an emphasis on data to the district leadership by saying, "I feel like it is a conscientious decision by the district, our superiors, to pay more attention to data use, to give it more merit."

Awareness through professional development. Teachers related a shift in the beliefs about using data to specific professional development on the district's instructional model. The document analysis included an analysis of documents related to the course and the reference to the professional development will emerge again later in

this chapter related to other research questions. The math teacher from Chesapeake

referred to this in the interview:

> I felt when I was taking those classes for our instructional model; they were
> pushing the data use from a day-to-day standpoint. Maybe it is just because I am a
> math person; I did many of those things already. There is the push from the
> administration to the teachers, but I think math people lend themselves to it.

An English teacher referenced the district professional development and the importance

of using personal qualitative data collected from observing students:

> The thing that I found interesting from our professional development on our
> instructional model is that the data collected may be just getting to know a kid.
> That data may be more helpful than what they have done on a test.

The English teacher references that the professional development course teaches the use

of quantitative and qualitative data in the classroom. This emphasizes the use of multiple

data points consisting of both types of data.

Negative shift in beliefs. Members from the Chesapeake data team expressed that

they do not feel as though teachers are using data to drive decisions as much as they think

they should. The data team, trained and experienced in data analysis, often looks at the

practice of other educators through a critical lens. They disagreed with a shift in beliefs,

but communicated more of a deficiency in practice by saying, "I do not think that we

actually make decisions on data, but I think we have made data more available." The

aforementioned quote reflects the perception of a data team member trained and

experienced in the process of data analysis. The data reflects a difference in DDDM

beliefs between data team participants that are experienced with DDDM and non-data

team participants without formal training and experience.

The data collected and summarized above about the beliefs and the participants'

perception of using data in their schools and across the district reflects a perception that

81

data is important and more people are using data to make decisions. The data team expressed a critical view of teacher use that may be a reflection of their effort to make DDDM more of focus than it is perceived to be at this point in time.

Perception of teacher use of data. The data that surfaced regarding the perception of how teachers use data asked of research question one contributed to improving instruction and the use of formative assessments to guide instruction. The use of formative assessments to guide instruction is supported in the literature (Kerr et al., 2006; Means, Gallagher, & Padilla, 2007). The teachers focused on the day-to-day data collection to guide instruction in the form of formative rather than summative assessments. The findings indicated that the teachers were more concerned with assessing for daily understanding compared to the summative assessment at the completion of units, marking periods, or semesters.

Formative assessments. Many of the teachers and leaders interviewed referenced the use of formative assessments to guide student learning and improve instruction more often. The Lakeside math teacher said, "I think that our staff is more aware of formative assessment of data than staff that might not have such a program." The math teacher from Sea View stated some specific formative assessments that align with the districts instructional model:

> I mean certainly we use it from the standpoint of, are we ready to move on to the next lesson, whether it be a summarizer, a ticket to leave, that kind of collecting data, it could be simply dip sticking strategies that we do throughout the class period.

The Chesapeake principal gave an example of how teachers use technology as formative assessments that she has observed in the classroom:

Teachers will often use technology as a formative assessment as either an activator or a summarizer. The students then pull out their cell phones, answer the questions and that is displayed on the data projector with live data of their responses.

The perception of teacher use illustrated in the aforementioned data indicates that teachers are using formative data in their classes. The emphasis on formative data is a component of the district's professional development course on the instructional model. However, the perception of teacher data use did not indicate that data were analyzed collaboratively, but more in isolation.

Perception of data culture. During questioning I described that a data culture in a school or district would be an environment where time is provided to use data collaboratively with a sense of urgency (Earl & Katz, 2002) and is characteristic of teachers and administrators (Owens, 1991). When the participants were questioned about their perception of a data culture, most respondents stated that they felt the data culture was present, but not completely. The Sea View principal said,

> I'm going to answer that with a yes but I'm going to put an asterisk next to my answer regarding the data culture at Sea View. And the asterisk is that when you say data culture I do not know that we will define it that way. If they have the opportunity to use it then some type of action has to follow.

The Sea View teacher that is a member of the data team expressed a different perspective when he said, "I would say no because when you look at data we use it to a degree, but not to a degree that builds culture."

A Lakeside supervisor's perception was that the school does demonstrate a data culture and proceeded to provide an example of how the administrative staff models that behavior by articulating, "On the teacher level yes they do that informal data collection driving the instruction or to adjust the instruction based on what they are getting … this is

83

a result of the administration role modeling using data." The data team teacher indicated

that the data culture was present, but not at great degree. The teacher explained, "Yes, but

it is very minor. Minor but it is a little bit more than it was before. I think the

administration would be using data differently, but turn keying it to our departments is

probably necessary." An English teacher and non-data team member expressed a stronger

point of view utilizing the work of the data team as the reason for the data culture:

> Yes, absolutely. Because I think if there is a good model of representation of what this is supposed to look like when it is being done correctly and accurately … that it funnels down to each school's individual data team who can model that behavior in that format and use it to filter down into the teaching staff.

The Chesapeake principal stated that the data culture is present due to the expectation

from the central office. She described the culture:

> The district office makes decisions using data. My teachers do not talk to me about data unless it is in a post-observation conference or initiated. I see more evidence of it in their decision making because it is in my decision-making. So if I asked a teacher why did you do this versus this, they can usually tell you why referencing data.

The Chesapeake supervisor pointed to the influence of the data team when discussing the

culture in their building:

> I feel like there is a culture. There have been times when your data team member said something to me that indicated a culture that you have built with them by not just analyzing data but that you are also talking about common policies and common pit falls of data usage. They are picking up parts of the culture that I am hearing in the building.

Summary of findings for research Question One. The participants' first

perception of DDDM was that of validating and justifying different types of decisions.

This is contrary to the conceptual framework of the study, which focuses on improving

the organization and student outcomes. The findings indicate that the participants have

the knowledge that quality DDDM involves using multiple data points (Love et al.,

2008). The teachers and administrators interviewed believe it is important to use multiple data points to make decisions. Also, the data indicated a shift in the beliefs about DDDM. Most of the participants believe that teachers and administrators have been using data more over the past five years, however, I should note that some participants adamantly felt that the culture to use data was not present in their school.

The findings are laced with evidence that demonstrates a resistance to use data. This is due to their perception that too much focus on data could lead to a less humanistic environment. For example, the perception was that if the teachers and administrators simply focus on data from student performance, such as formative or summative test scores, they would miss "other important data." This resistance is due in part to a lack of overall knowledge about DDDM from the teachers and administrators.

The perception of the participants was that a data culture does not exist as defined in the interview (Earl & Katz, 2002; Owens, 1991). The findings indicate that progress has been made developing an environment where teachers and administrators use data collaboratively with a sense of urgency. The lack of time developed as a major theme and will be discussed in the next session.

Research Question Two

This section presents the qualitative data findings from teachers and administrators that are members and non-members of the current district data team regarding how they actually use data. The themes presented are types of data used, their authority to make changes based on data, using data to reflect, district components that facilitate data, and barriers to data. Furthermore, accountability systems, policies, and legislature were a common reference in the findings.

The school principals referenced the use of standardized test data to gain an overall picture of the school performance. This was a common theme among the principals as they approached DDDM from a global perspective compared to the teachers. The teachers' data use was specific to their classroom by collecting formative quantitative and qualitative data to guide their instruction. The principals expressed that they have the authority to make changes based on data within their buildings, but they were cautious as they felt gaining consensus to make a change was important. In addition, the data analysis indicated certain technology that facilitated the use of data and specific barriers that prevented the use of data.

Types of data. The principal of Lakeside High School described his use of data as a result of a district initiative that allowed all freshman, sophomores, and juniors in the district to take the PSAT exam. A benefit of the initiative is the data received from administering the test. The Lakeside principal described his use of the data such as PSATs and using that data to target students that would be successful in certain Advanced Placement courses. The principal at Lakeside utilized a similar approach as the other principals in the study. They were interested in the type of data that would give them a broad overarching picture of whole school performance. The focus of this could be due to the fact that the overarching data, such as SAT data, is the type of data that is available to the public and often presents an inaccurate picture to the community. Principals that succumb to the pressure may lose focus on true data analysis efforts in their school by only focusing on the overarching data and not the disaggregated data highlighting subgroups.

A science teacher from Lakeside described the type of data that he collects in his class including qualitative data by saying, "I am into qualitative data by keeping journals of my own, reflections of what's happening in the classroom, and trying to establish different themes that I'm seeing. Just listening to what students are saying, picking up on their vibes."

The Chesapeake math teacher described the type of data that he used to make a specific decision about the content that his students were struggling with. He reflected about qualitative data that he collects through formative assessments. According to Dorn (2010), formative assessment can be the most powerful tool for a teacher. Using formative assessment properly is an indication that the teacher is utilizing the curriculum and more important, re-teaching the content when the students do not understand. The non-data team English teacher from Chesapeake described his use of qualitative data collected from his students to change his delivery of literature:

> We were reading, a piece of literature and I would give them maybe 10 to 15 pages to read at night. They would come in the next day and most of them had not read even half of that. So we talked about it and the students said between some of the work they get in other classes, their after school lives, or they do not have the support at home. So I read more of it in class and it just took longer to go through the novel.

The types of data that participants utilized ranged from standardized test scores, classroom assessments, formative assessments, exit surveys, and qualitative data collected through conversations with students. The common theme that presented during the data analysis regarding the actual data used was the knowledge of using multiple data points and different types of data.

The data analysis indicated a relationship between the type of data and the role of the educator. The principals were interested in only the data that would quickly give them

the overview of the school performance. This practice contradicts policies such as NCLB that mandates the use of disaggregated data so that particular subgroups are not ignored. The mindset to seek the overall performance from standardized test data by the principals is a dangerous practice. As stated in prior chapters, a school may be high achieving on the surface, but may have failing subgroups. The teachers were interested exclusively in the performance of their particular class to guide instruction. They utilized formative assessments often, but, once again, no analysis of students in different subgroups.

Facilitating the use of data. The data gathered for this study in reference to research Question Two, designed to investigate actual data use, indicated certain variables that facilitated the use of data across the district. Both the document analysis and interview data supported this. First, the professional development discussed during the document analysis had an impact on the ability of the district's stakeholders to use data to make decisions. Second, a strong theme regarding actual data use was the current access of data through technology.

Professional development. The document analysis described the professional development course in the district's professional model that all teachers and administrators have taken for the past 16 years. I highlighted the emphasis on data driven decision-making that I found in the documents associated with the course in the document analysis in Chapter 4. The English teacher from Lakeside mentioned the impact of the professional development:

> I think the professional development classes have made me realize how much more conscious I can be of those decisions based on data. I am always looking at the pattern of errors inside and that is the choice I will make for grammatical instruction in the next few weeks.

88

An English teacher at Chesapeake described his learning from the professional development course that was useful for his classes when he said, "The thing that I found interesting from the professional development is that the data purposefully collected could be qualitative data recorded from conversations with students or comments heard during class. This feedback provides a more student friendly response." A Sea View English teacher discussed the focus of the instructors that teach the professional development course:

> The instructors of the professional development on our instructional model stress that data can be anything that you use to inform your instruction when you see a trend, certain students are getting a certain question wrong and how that informs your instruction.

One math teacher form Sea View discussed the fact that teachers only have to take the courses once, but she chose to refresh her teaching by taking the course again:

> I went through the course very early on in the timeframe, I am in my fourteenth year of teaching now, but there were some openings so I just took the first course again to refresh myself and to refocus my career and my classroom activity. I see a big difference in the way that I proceed in my classroom this year and how I am trying re-implement things that might have started trickling away.

It is clear from the document analysis and the interview data analysis that the district professional development made an impact on our teachers regarding the awareness of using data in the classroom. This will continue to increase the awareness of DDDM and will increase the data culture.

Technology and access. The data overwhelmingly indicated that technology contributed greatly to the use of data by teachers and administrators by facilitating access. Administrators and teachers have different levels of access to the student information system that frustrated some teachers. This measure is put into place to maintain student confidentiality and aligns with policy that I analyzed in the document analysis. The

district has two primary sources of electronic data in the student information system and the cloud based service that provides information to educators, parents, and students regarding the preparation for college readiness and the college application process. The principal from Lakeside expressed how the student information system facilitates their use of data:

> Running reports from the student information system and to analyze that, we ran the course reports along with ethnicity when I found out that all three of my AP courses or females dominate honors courses. The student information system is probably the big one that helped us.

A math teacher from Lakeside reiterated the feeling about the student information technology by stating, "I do feel like I have quality access with the student information system. I have a wealth of data at my disposal to make some informed decisions about instruction which I couldn't do before. Technology has made it easier."

The student information system implemented in 2005 provides teachers with data that is needed to guide their instruction. The participants expressed this in their interviews by indicating that they have easier access to data saving them precious time. Time to analyze data will be discussed further as a barrier to using data properly.

The Chesapeake principal expressed the positive influence of technology by saying, "I am sure the increase in the access of data will coincide with the use of technology because technology is so widespread and we input so much information, it is easy to pull what we need." The Chesapeake science teacher agreed with the benefit of technology regarding the access of data, but offered an idea that could expand on the student information system. She said that using shared computer drives that people could access at their leisure could facilitate data analysis.

90

Barriers to data use. The data collection to answer research Question Two in reference to data use aligned with the literature review regarding the barriers that educators face in practice with DDDM. The literature review outlines Datnow et al. (2006) and Marsh et al. (2010) who argue that educators must overcome barriers such as the lack of time to analyze data. In addition, the review of literature summarizes the frustration of educators regarding the lack of knowledge needed to implement DDDM (Reeves & Burt, 2006) and the fear of data among educators (Flowers & Carpenter, 2009). The barriers that surfaced in the data relate to time for collaboration and analysis, the reliability of data, fear of data, lack of knowledge, filtering mounds of data, and the access to data.

Time and collaboration. The literature review describes a data use model designed for this study. The data use model influenced by Honig (2003) and Coburn and Turner (2011) depicts a collaborative model of analysis that includes searching, noticing, and interpreting data ending in actionable outcomes. The collaborative professional learning community concept has been linked to educational reform and improvement (Bullough, 2007). The participants involved in this study expressed a need and like of collaborative work to improve student outcomes, but they simply do not have the time. The Lakeside math teacher spoke about the lack of time for collaborative work when he said, "I think if we had more time. I think there is very little time in the day to collaborate with guidance or CST or other departments in the school world. Maybe that data is available."

The Lakeside English teacher described her experiences with collaborative work in her department as she said, "I think that when we get together across the district we

could share student growth objectives and how that is connected to our curriculum model."

The Sea View math teacher articulated the frustration that collaborative work is restricted to the teacher workrooms if you are in the room at the same time that other teachers are present. She described this by saying,

> Here at Sea View our planning centers are grouped by department. It is never anything official with my department, but it is a sidebar conversation that you have in the planning center about different aspects of data, and all realms of it whether we are talking about the standardized tests or about your students, all different forms of data.

She elaborated by simply saying, "We want more, more collaborative time." The principal of Lakeside expressed frustration regarding the intention to use data and the reality of a principal's job:

> I think people have good intentions. I do a lot of data stuff when I have ideas in the summer, and then once the school year starts I do not have time for that. I have a whole plan to use data to drive programs.

A supervisor from Lakeside concurred by saying, "You are pulled in many different directions." The Lakeside English teacher mentioned how the district data team can help overcome the barrier of limited time when she said, "I know data use is a lot of work and I think it is important that we have the data team to do that because it would be completely time consuming and not done in the best way."

In the previous section highlighting the perception of the participants I outlined the perception that there is not an increase in data use by Chesapeake data team members. When I inquired about the reason for that perception the team member replied,

> One of the issues is good old time; it is just a rough process. Unless you really are good at stats, you back away from it, because you are so worried about doing it wrong and making the wrong decision.

The Sea view principal discussed the fact that my leadership in the district and the increased access to technology facilitates the time barrier in the district by saying, "Data is readily available to us. We do have a Director of Programs Planning who can give us data so it is easier to look at. Data has not been put in front of them in a threatening way." The supervisor from Sea View emphasized the need to use data when making decisions, but added the importance not to analyze data in isolation. He expressed this by saying, "I think you should always make decisions with some type of data. If you are making decisions without all of the data you are not going to make a good decisions."

The lack of time to collaborate with other educators in data analysis is a common theme in the literature described in both Chapter 1 and 2. Earl and Katz (2002) define a data culture as a school or district that provides time to collaborate together on something that is initiated with data. The lack of time and the yearning by teachers for collaborative work that is evident in the data above highlights a topic that will be discussed in the next chapter.

Mounds of data. The interview participants expressed that one of the contributing factors to the lack of time to analyze data is the amount of data available. The data collected within this theme aligns with the barrier of time. The educators expressed during the data collection that there is more data than time. The Lakeside math teacher articulated this barrier regarding the amount of students and an extra class that many teachers have in an effort to decrease personnel cost. He said, "How much data can you process if you have 125 or 150 students or six classes? In the ideal world you have fewer students to really get to know them and make good decisions, differentiate instruction based on data." He continued by emphasizing, "There is so much data … faculty

members are overwhelmed by this amount of data." The Sea View principal recognized the fact that teachers only need specific data and it is his job to be the gatekeeper. He described this feeling when he said, "I do not know that there is anything from a data perspective that I want that I cannot get. I think that you have to be careful with that because it could be become overwhelming."

Reliability of data. The participants expressed concerns regarding the reliability of data or the trustworthiness needed to make the right decision. The feeling communicated during interviews aligns with the participants' emphasis on using multiple data points outlined in the previous beliefs section. This section differs from the previous concern in that the participants question the belief that data can be presented in a way that will emphasize any point or can be skewed heavily. The belief that data are skewed aligns with the other perception that most people do not have the knowledge to use data properly.

The Lakeside supervisor described this feeling by explaining, "You have to be careful with data. I understand there is a lot more data to support one point of view or the opposite. You can communicate the support any way you want to." The Sea View data team member aligned with this perception of data reliability by saying, "Numbers do not lie. You can also pick and choose the numbers you are using or the pieces of data you are using. So that's the cool thing about math I guess you do what you want with it." Furthermore, the Sea View data team math teacher expressed the view that people can draw different conclusions from the same data. She expressed this lack of confidence using data by saying, "Sometimes I feel pretty confident with the data and spreadsheets.

But then somebody else has drawn a completely different conclusion from the same data. I do not really know if what I'm doing is correct."

This discussion is not resistance to using data, but aligns with the common thread that participants are fearful that students will be reduced to numbers with an intense focus on data. Findings related to this will be discussed in the following section. In addition, the feeling that educators should not forget about measuring what students learn along with measuring the actual high school experience. The Sea View data team member succinctly summarized this concern by saying, "You could learn everything in the world and have a horrible high school experience and it is very hard to measure those things."

Fear of data. The participants conveyed an overall fear of data that will act as a barrier to creating a data culture. The fears included the lack of knowledge, losing the humanistic component of education regarding what is best for the student, teacher evaluation, and the emotional toll that negative results take on educators. A Chesapeake math teacher and member of the data team expressed this fear by saying, "When another person has drawn a completely different conclusion from the same data that I look at it scares me a little bit. If I am just using a gut feeling I do not feel confident." The Lakeside math teacher articulated the interest in data, but the need for knowledge regarding how to use data when he said, "It is fascinating what the data can tell you, but you have to be skilled in knowing what to do with data and how to calculate averages, make graphs and displays and that kind of thing."

The data highlighted the different comfort levels among content areas. The math and science teachers felt more comfortable with data compared to other content areas such as English. The Chesapeake English data team member confirmed this by saying,

"My department members are not math brains. People talk about data and you get the blank look because we do not understand. We do use it to a certain extent, but by majority most teachers do not use it."

The Sea View participants indicated that data are used in visual formats in faculty, department, and committee meetings. This type of data use does not align with the process utilized by the data team. As the Sea View principal worries about appealing to the emotion time is being wasted without actionable outcomes.

The Chesapeake math teacher expressed the fear of change with the staff members when the data informs them that change is necessary when he said, "I would just add that, I get really frustrated when people say that we do not do it that way because that is how we have always done it. It just drives me up a wall."

The Lakeside math teacher expressed a fear from data due to the new teacher evaluation system developed from the TEACH NJ Act legislation. He expressed his feelings when he said, "A huge fear is data when it comes to teacher evaluation. That is huge now due to the TEACHNJ Act and our new evaluation system connected to student scores. How do you reduce a lesson into single number?" The Sea View English teacher held the same frustration regarding the teacher evaluation instrument when she emotionally said, "Can numbers really give as much insight as some people believe regarding teacher performance?"

The data indicate a fear that developed among participants. The fears include losing the humanistic side of education, the trust associated with data related to deficient personal data analysis skills, and the data that will be reported to the state department related to teacher evaluation. All of the fears can be addressed in the recommendations

with a strong commitment from the principals for the Title I schools. The support from the central office is evident in the findings, however, the support must be reciprocal and equally as strong from the building leadership.

Summary of findings for research Question Two. The leaders indicated using data that illustrates the overall performance of their school and the teachers expressed that their data use is exclusive to their classroom through formative assessments on a daily basis. The participants expressed their authority to make changes based on data that were specific to their role. The leaders felt like they had the authority to make changes within their building and the teachers within their classroom, but the authority did not extend outside of their particular roles.

Themes developed indicating particular resources that facilitated the use of data. The professional development that all teachers receive on the district's instructional model gave the teachers knowledge of how to use data to guide instruction. Specifically, the reference to formative assessment and checking for understanding is a direct result of the professional development courses. Participants indicated that this knowledge was not from their undergraduate or graduate teacher preparation programs. In addition, the participants referenced the technology available through the student information system as one of the primary resources that facilitates accessing data. Student information systems can be a very helpful resource for teachers and administrators when searching and noticing data (Coburn & Turner, 2011; Honig, 2003).

The theme that developed as the main barrier to DDDM was the lack of time to collaborate. This barrier greatly diminishes the effort to build a data culture. School leaders revealed to Reeves and Burt (2006), as well as Wayman, Jimerson, et al. (2012),

97

that the lack of time to look at data was a key challenge. This challenge is present in the school district studied and will be addressed in the next chapter. Teachers and administrators challenged the reliability of data. The challenge presented by participants was not resistance to use data, but a lack of confidence in their data analysis skills. The varying interpretations during that phase of the data analysis process may be due to an ineffective method of analysis. According to Love (2009), specific ground rules and norms must be established prior to collaborative analysis. Putnam et al. (2009) concur with Love in that establishing norms will increase the confidence of a group during collaborative work. This will be addressed in the district recommendations developed in Chapter 6 to utilize trained and experienced data team members to train school teachers and administrators in the process of data analysis.

Research Question Three

The themes presented below are the perceived importance of the data team, the influence of the data team on the building data culture, and the knowledge of the data team's work and members expressed by the participants in the study. In addition, this section will include data collected regarding what is missing in the data team framework and practice from a building level perspective.

Importance and influence. The Lakeside principal discussed the data team by saying, "I think the data team is a good thing to have and the data team has collected and analyzed a lot of data for us." The Lakeside counselor expanded on the positive aspect of the data team when he said, "I like the data team concept because then decisions and policies are being made from actual data."

The Lakeside math data team member expressed the importance of the team and how it influenced her department and personal practice:

> I was very excited when we were going through all the information that was brought back to the math department. I go through and collect my own data. That is exactly what the data team does… make the teachers better and we can do this with data.

The supervisor from Chesapeake described the importance for all of the schools to have representation on the data team. He expressed this by stating, "I have seen how important it is for a building to have voice in district operations. The best decisions are arrived at through contributions from all schools. Having a place at the data table is important for our building."

The Chesapeake data team member expressed that the team gives staff members confidence that decision are made with data to base it on. The science teacher expressed this by saying,

> I think it makes people more comfortable knowing that decisions, especially at the district level, were made based on data not without something to base it on. We've looked at the problem, we studied it, we analyzed it, and we think this is a solution.

The Chesapeake English teacher views the data team as a role model for data driven decision-making as well. He articulated this by expressing, "I think the data team is a good model of representation of what this is supposed to look like when it is being done correctly and accurately." The Sea View principal elaborated on specific examples regarding the importance of the district data team as he said, "It allows me to know what is happening in the other three buildings in our district … this allows us to formulate those engaging informal conversations and see if we want to formalize analysis at the building level."

99

The Sea View principal's quote refers to his interest in knowing how his school measures up against the other schools in the district. The quote indicates that he is superficially concerned with how the data look compared to the other schools, but analysis related to specific goals was not evident. The Chesapeake supervisor articulated his perception of the district data team influence by summarizing, "I see the data team as the building base. I would say their influence in the building is more indirect by influencing district operations." The Sea View science teacher confirmed the influence from a teacher's perspective by saying, "This has become a part of what we all do now as we look at things a little more in depth as a result of the data team and the influence from increased awareness."

Knowledge of work and team members. The data collected to answer research Question Three in reference to the perception of the data team below will highlight how well the study participants know the data team members and how aware they are of the work that the data team does. The knowledge of team members in the building was apparent with most administrators and some counselors, but for the most part teachers could not name the data team members outside of their department. The Lakeside guidance counselor had knowledge of the data team member in his department. He mentioned, "She is a real good friend so we talk all the time. I would feel very comfortable talking to her about the data team work." The English teacher on the Chesapeake data team described her experience with department members when she said, "I know my department is aware I am on the data team. When I tell them there are times when they are interested and times when they are not. I think it depends on the topic."

The supervisor from Chesapeake had knowledge of who the data team members were in the building and the influence that they had within their role in the building. He described the feeling that the team members play different roles with different levels of involvement that is actually a positive aspect of the building data team,

> I see the value of the building data team, but as far as their work directly with people in the building, I think there it is indirect in a sense because as I think of the people … they have different roles. I think within the data team that sometimes … we do not want a team full of infielders.

A number of the teacher participants in the study had very little knowledge of the data team members in the building. The math supervisor at Lakeside High School had very little knowledge of the role of the data team in his building and the district. He articulated this by saying, "I know our test coordinator is on the data team when she goes to the meeting. What she is doing or what the purpose of that is I am not sure." The Lakeside math teacher reiterated the importance, but was not aware of the team members or the work that the team does. He said,

> I think that your data team is really important. I think the fact that we are willing to spend some time and manpower and effort analyzing data is good. I've always been baffled about what the data team actually does.

The participants expressed a similar awareness regarding the work that the data team does. The Lakeside counselor expressed knowledge that the team is analyzing data, but not specific knowledge by saying, "I know we have the data team and I know there has been a lot of work done, but maybe even more could be done in terms of making it available."

The Lakeside math supervisor was as unknowledgeable about the work of the team as he was the actual team when he revealed, "From what I am seeing here around

the data team it has had no effect … I have not heard anything from the data team on how the data is used."

Missing link. The study participants were asked the question inquiring what the data team could do differently moving forward. The themes that developed are strategies to create awareness, increased access in data, and more activities in the building for data team members. The Lakeside principal suggested, "I think we would have to give prime examples to the staff of how the data team could benefit them. I think that if data team projects were presented, that would be positive promotion of the team." The Lakeside math supervisor concurred with his principal by saying, "Have the data team maybe report out to the administration on a regular basis. When I say regular I do not mean necessarily monthly." In addition, he suggested continual emphasis on data in general when he said, "First of all to build a data culture with the administration it would be to share the results that the data team gets, to share any time the district is making decisions based on data to share and use the word data." The Lakeside supervisor on the data team suggested, "I do not know if we have done an effective job in letting all of our teachers in on what we have identified, what we found out."

Chesapeake participants suggested making the data team meetings and work more available to all teachers. The math teacher at Chesapeake suggested, "You could present it to the teachers. If it is on math, and you present it to the math teachers, then you can maybe hand it over to them and get feedback from them." The Chesapeake English teacher held a similar sentiment suggesting, "Maybe see if teachers who have enough interest would like to be a part of this, the data team that is at their school and they can sit in on a meeting and become familiar with the work first hand." The Chesapeake data

team counselor spoke about the lack of communication regarding the end result when he described, "I think there might be a piece missing at the end. Sometimes I wonder what actually happens to all that data. I think we come up with our action plans, our conclusions but what happens with it over time."

The principal at Chesapeake described the enthusiasm of her data team members when she said, "I know that people from my building love data. So they often come back from your meetings very excited." She felt that we could harness that excitement by having a formal discussion at administrative meetings. She said, "It would be good if they visited the administrative meetings that link the data team to the building. Supervisors can discuss with their teachers because it is going to be relevant in some content areas depending upon the current analysis." The Chesapeake supervisor aligned with his principal when he suggested that the building data team members work in a consulting fashion for established groups in the school. He summarized this by saying, "We have different building based committees and the data team members are involved with them. I think it might be important to maintain that role helping other committees to help them like data consultants. They are specialists in data."

The principal of Sea View expressed the difficulty taking the data analysis completed through a district lens and turning them into actionable outcomes at the building level. He expressed this by saying, "I do believe that these conversations are taking place and I think it is harder because the data team is looking at it from a district perspective."

Summary of findings for research Question Three. The findings for research Question Three indicated that the participants feel as though the data team concept is

important with an indirect influence on the school's data culture. The teachers and administrators recognized the importance of the data team acting as a data role model for the schools. However, there was a lack of knowledge of the team members that represent their building and the actual work that was completed by the team. Remedies to this lack of knowledge were related to involving the data team representatives in the school to make better use of their data analysis knowledge. The recommendations included in the findings are valid, but the building commitment must align to the central office data team commitment. This will be discussed in the next chapter as the reciprocal relationship that is needed to build a data culture.

Research Question Four

How did the central office and building administrative leadership impact a change in the organization and schools? The themes that emerged in the data are related to leadership across the district. Specifically, the themes highlighted school building leadership, central office leadership, and my personal leadership. In addition, the data highlighted what the school district central office could do to facilitate data driven decision-making in the schools.

The participants were asked if they feel like they have the leadership authority to make changes based on data. Overall the response was that they did have the authority, but only to a certain extent. The participants described a definite comfort level with the authority that they are given regarding decisions that are made from data. One hundred percent of the teachers said that they have the authority to make changes in their own classroom based on data that they analyzed, however, all of the teachers referenced seeking approval from superiors for anything outside of their particular classroom.

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Principals held a different perspective as the leaders of the school and the level of authority that they have in their position. The principals felt as though the district supported them as they were given the autonomy to make decisions based on data that illustrates the overarching performance within their building.

School leadership. The evidence was convincing that the Lakeside principal utilized data in his building. The math teacher in the building confirmed this by saying, "I know the principal has taken a look at data to increase student interventions for those kids to succeed. He identified resources for those students in the first marking period, which is phenomenal." The Lakeside data team teacher confirmed this role modeling when he said, "I know the principal makes a point at our faculty meetings. He talks a lot about how many failures we have and then uses the plan for success to help those students."

The Lakeside principal expressed the interest in DDDM and the need to improve when he reflected, "I think I have really grown in to data analysis for myself and I would like to get even better. What I have read and investigated really motivated me to become more data driven."

His perception of his supervisors was that not many use data on a regular basis. He expressed this by saying, "I would say I have a couple supervisors that use data. I want to say some supervisors are very good with the data component, scheduling, you know, using the course selection software."

The Chesapeake staff for the most part perceived their administration as data driven. The Chesapeake math teacher summarized this feeling by saying, "Yes, department and faculty meetings usually, whether it is the principals or my supervisor, usually they explain why they are doing something and usually it is data driven." He

continued with the reaction from the staff when he stated, "I think our administration, you hear some moans and groans from teachers, but when they explain something and why they are going to implement something, it is pretty cut and dry." The Chesapeake focus group compared this administration to past administrations by saying, "I am just thinking five, six years ago with the administrative team and we have had quite a change overall. I do not think our administrators were using data like the new team does." The Chesapeake counselor emphatically said, "Absolutely, the administration, I know that they value data and I know that they definitely discuss it with their faculty, whatever they feel will affect our lives." Another supervisor from Chesapeake described the expectation of the principals when he stated that he did not go to them without data to base his solution:

> They might not always ask for the data but I have it. I do not ever go in and say, trust me on this one; this is what I think. I feel like that data use practice is an expectation at all levels.

The Chesapeake principal described the district expectation to use data and one example of how they use it:

> I think in this district you have a superintendent who is driven by data so once you know how people make decisions; it is a lot easier to prepare yourselves because you know what they are looking for. So we have a superintendent who is very much data-driven … it would be stupid not to come prepared for whatever you are advocating with data to support it, because that is the first thing the central office will ask for.

Sea View's English teacher described an occasion when the principal utilized data with staff:

> Recently, one example that I am thinking of is he is been having small group faculty meetings just so that we could discuss more in an intimate environment. He shared data about the schedule changes and the data that they have at the time. I know you or the data team put together information about how schedule changes could benefit us, how it is a district benefit.

The Sea View data team member highlighted that data may only be used in certain situations. He described this by saying, "I feel like around here we do not use data unless there is an issue that has come up. Nobody comes out and tells us to go collect this data and see what is happening with it."

The Sea View science teacher described an interesting mentoring situation when a teacher of the year served as a leader that motivated him:

> I taught with the teacher of the year when I was in my second year. After looking at midterm exam scores, I was proud of the job my kids did and you go and you see his scores, he is all over the place and he is fantastic. That was a motivation for me.

The Sea View principal described his leadership plan regarding the use of data over his six-year tenure:

> Data driven decision-making was step two of my transition into the role of principal. First was building trust. So if I just came in here and rocked the world with data, data, data … it would be intimidating. All of this data wouldn't have been on my desk four years ago. If I need data in a conversation I can access it very easily. I would like to tell you that is something happening overnight, but it is a slow process.

The data collected from the Lakeside staff indicated that their perception of the principal was that he was a role model for data use to validate decisions and initiatives. However, his personal reflection indicated that he wanted to become more knowledgeable about the data use process. Burns (1995) posits that transformational leaders act as role models for their followers. The willingness of the principal was evident at Lakeside, but the knowledge was deficient. The perception of the Chesapeake principal was that she was a "manager of data." The data use that existed consisted of reporting data to the people that the principal thought should be aware of it. This technique utilizes the first two stages of the data use process established in Chapter 2, but

fails to accomplish the interpretation of data followed by actionable outcomes. The Sea View principal had a reputation with the staff that data use was a result of problems. The principals are using data, but the full data use process of searching, noticing, and interpreting data for actionable outcomes is not fully present in the schools. Data analysis often starts with a problem (Love, 2009), but the participant data indicated the absence of the true data process.

Well positioned to use data. In reference to research Question Four regarding the impact of district and building leadership, the participants were asked if they are well positioned to use data in their building and the district. Well positioned was described as someone who has access to data, the knowledge to use data appropriately, the ability to collaborate with data, along with the authority to make changes. The Lakeside principal responded,

> I feel like I can get better, I feel I can get whole lot better. I am interested in data and, I think I could use it so much better if I knew a better way of how to use it. I would be interested in using the data to drive just some of the decisions, and that is just a part of the equation to making the decision.

The Lakeside math teacher aligned with this feeling:

> I do feel like I am well positioned especially with the student information system. I do think I am well positioned to collect meaningful data and use that data for my instruction.

The English teacher on the Chesapeake data team stated, "I feel a little more comfortable because I have learned things from that, but I think I still have a lot more to learn and I think I might speak for a majority of our faculty." She expanded by demonstrating the self-confidence to ask for help when she said, "I am not able to manipulate data like you do but I know who to ask. I know who to ask to help me." The Chesapeake principal expressed the importance to feel well positioned to use data:

I feel well positioned; I do not like making a decision that is just to make a decision. That is not how I make the decisions, at least not big ones. I am not someone that loves to play with numbers, I have people that are. So I will either present them with the data or tell them this is what I am thinking, is this supported?

The Sea View English teacher described the access of data in her building by describing the following,

I do think that some of the data, again, at the higher levels I think is harder to get your hands on and also a little harder to interpret. But I think obviously if I have wanted to I can approach the principal and ask him about it or I could approach a supervisor and ask him about it. I feel very welcome addressing that.

The Sea View counselor aligned his ability to use data with his job compared to a teacher when he said, "Yes, very much so. That might be the nature of my job versus a teacher. I feel I have access to everything and anything that I want, with easy access to it." The Sea View principal completed the perception of being well positioned by stating, "I do not know that there is anything from a data perspective that I want that I cannot get. I think that you obtain anything, but it can become overwhelming.

Central Office. During the interviews I inquired about the central office leadership and how the central office can help to make data use more prevalent in the building. The Lakeside math teacher simply stated, "I think we are doing a lot of great things already. I really do." The Lakeside English teacher expressed the need to do something collaborative around the data collected with the new teacher evaluation system:

Now that we have a teacher evaluation connected to data through the student growth objectives it would be helpful to collaborate with teachers across the district analyzing this data. I am not sure if any other departments do this and this way the data we are each collecting from our student growth objectives would have a bigger purpose.

She continued by clarifying that data utilized in the past were not what she was referring to regarding what was needed when she said, "I do not need NJASK scores like that is what we get, it doesn't mean anything … the standardized tests are not the only data." The Chesapeake math teacher described his perception about how they receive data as a teacher by saying, "It is a trickle down from the top concept. I think that this is something that the principals have been pressing and putting out there and encouraging. They certainly encourage it a whole lot." The Chesapeake counselor expressed a similar theory when she said, "I think it starts at the top, that is how we feel. Everything starts with the district office and then comes here and then goes out. We understand the process and at this point I trust the process." The Chesapeake principal described her feeling about the district's ability to use data by saying, "Right now, I think we have a very healthy balance of data and still that culture that education is not the business." She continued with a confident, "I think we are a model." The Sea View English teacher aligned with Lakeside's by mentioning the data from the teacher evaluation tool:

> One thing I think with the teacher evaluation tool, clarifying what is data. And that is something that I think we are going to try to do more in our professional development for new teachers, clarify all that counts as data.

The data from Sea View indicates this concern that resistance would arise if they were "forced" to use data. This is a reflection of the principal's lack of urgency that is contrary to the definition provided by Owens (1991). The Sea View science teacher offered a suggestion by saying,

> I guess just an invitation. I do not know that there is a culture that needs to be improved in terms of a negative. You have to be careful with telling a teacher how this data is something that is important for you to move forward because maybe a teacher does not feel they need that.

The Sea View principal outlined his vision for DDDM in his building:

It is a transition as a district because you know it is nice to look at the data before you were in a certain position. When you are actually implementing decisions, and policy and procedure and you are looking at the data in real time. I look at Sea View data now when compared to when I first started as principal. Now there is no piece of data there that is not somehow related to the decisions that I am making.

The participants indicated that future efforts should create awareness about data team work from the central office. The suggestions include using the teacher evaluation data collaboratively so that the mandate as a result of the TEACHNJ Act is valuable for our staff. The effort needed as a result of the data collected is to ensure that data received are obtainable by all stakeholders.

My leadership. The data collected from the participants included data that described my leadership or central office actions related to my leadership. I outline below the positive aspects of my leadership that contributed to DDDM in the district and some constructive criticism that will be appropriate for future implications. The Chesapeake principal expressed,

I would be hard pressed to find a district that uses data the way we do. I really feel anything we want it is usually you and data processing are able to either figure out a way to get it for us or you know we have access to it because you guys are so familiar with using it.

She adds, "When we come out with difficult requests, we have you or we have data processing take us through how to gather what we need. It is easy for us." The Chesapeake supervisor described my presentation of PSAT data:

The PSAT data that you brought to us today was presented in the right frame. You gave it to us with the correct frame this morning. Coming out the way you did and then in turn lets us be a part it. You know your audience because we are only like one or two levels below you.

He added by mentioning the biology data project provided by the data team and central office annually:

I was looking today at the biology data that you gave us from last year. It is really interesting and I thank you very much. It is so fascinating and I love the last page of all. Each page had different windows but the last page where it breaks up like clusters because there it is like sort of the most precise slices of data and I had my own predictions in my mind, how my teacher are going to rank and I was kind of curious to see how that played out and it was really interesting that not all was exactly like I would have predicted.

The Sea View principal praised the efforts coming from the central office when he said,

I probably would not be in a place with data had it not been for central office so I think there is obviously a stress there and there has been an overarching theme of how to use it properly. It has guided decisions. We present it in a fashion that is non-threatening. We give tools.

He expanded by summarizing how they benefitted from my work with the district data team by saying, "It is a great informal tool for me to either funnel information out to teachers or get information funneled back to me for great informal conversations."

Summary of findings for research Question Four. It was evident that the Lakeside principal made the most impact regarding data use in his building. The Chesapeake leadership expressed that it is expected to validate and justify decisions with data, but the principal's use of data was merely reporting data without the use of collaborative analysis. The Sea View principal indicated that his focus was not on data and that will come in phase two of his entry as principal at Sea View. Meanwhile, six classes of students have graduated under his leadership. This finding indicates a lack of urgency to develop a data culture (Owens, 1991).

Participants indicated that they feel well positioned to use data, but admitted a need to improve personal skills and resources. The term well positioned included the ability to access data, the knowledge to analyze the data along with the authority to make changes. Leaders expressed a need to develop their skills and admittedly, they said that they reach out to their building experts due to personal deficiencies.

Teachers expressed disinterest in standardized test data. Previous finding summaries in this chapter describe the fact that teachers were more interested in immediate, formative data from their classes. The standardized test data is received months after the test and it has very little meaning to the teacher's instruction. In addition, teachers and administrators demonstrated the belief that the central office commitment to DDDM is necessary and the central office commitment is evident. The school principals were positive about the central office support for DDDM in their buildings. However, teachers felt as though the central office was committed to DDDM, but data takes time to reach the teachers' level if it makes it through the principals at all.

The findings were mixed with direct and indirect references to my leadership due to the data team initiative. In reference to research Question Four, the feedback was positive regarding the perceived commitment from my office and the administrators praised the access to data. The teachers did not praise my work as they are farther removed from me and their knowledge of the central office is limited. The teachers' knowledge of the central office commitment to DDDM reflects how the principal portrays that to them in the building. My leadership and the needed reciprocal commitment from the school principals will be discussed more in depth in the next chapter.

The sections above discussed perceptions of each participant group, administrators and teachers within the case study's embedded units, the Title I schools. The participants provided data to appropriately answer four research questions that highlight the four themes of DDDM perception, actual data use, perception of the district data team, and the leadership of the central office and schools related to creating a data culture. The final

chapter will provide clarity by discussing the major findings, recommendations, and

implications of this study.

Chapter 6

Discussion, Implications, and Recommendations

The study was designed to research the influence of the existing district data team on the data culture of the three Title I schools across the district. The school district researched in this study initiated the district data team during the 2010-2011 school year. The mission of the central office, when developing the district data team, was to funnel the results of the data analysis projects and the knowledge of the data use process to the schools, creating a systemic data culture. After three years of implementing the district data team it was important to investigate through this study if the mission has been fulfilled.

This chapter will contain three major sections. First, a discussion of major findings from the data collected. Second, the implications for Title I schools regarding the implementation of DDDM through the data team concept. Last, I will present recommendations for the district, Title I schools, and future research. The aim of the present study was to better understand how a central office initiated district data team influences the school's ability to use data. The common threads that connect the three Title I schools emerged as themes in the findings: overall DDDM beliefs, the subtle data culture, the fear of data, barriers to DDDM, perception of the district data team, and the leadership involved at the central office and schools. To obtain an optimal picture of data use, the data for the study were collected through semi-structured, open-ended individual and focus group interviews with data team and non-data team participants (Yin, 2009).

In addition to the aforementioned interviews, data were collected through the examination of district documents (Creswell, 2009; Yin, 2009).

Previous studies examined DDDM strategies initiated at the district level in communities of practice with a systemic focus (Coburn, Honig, & Stein, 2009; Feldman & Tung 2001; Honig et al., 2010; Wayman, Cho, et al., 2012; Wohlstetter et al., 2008). The most recent and similar would be the study by Levin and Datnow (2012) that used the data from high school case studies gathered by Datnow et al. (2006). Levin and Datnow specifically focused on the connections between the district, building principals, and teachers regarding DDDM. This study highlights how teachers and administrators are using data to make decisions, their perception of DDDM, and the impact made by central office and building leadership to initiate the change to a data driven culture.

Document Analysis

I analyzed district documents such as the district and building strategic plans, district policies and regulations, the Title I Grant guidance documents, the teacher evaluation tool, and the curriculum from the district's instructional model professional development course. The purpose of choosing the aforementioned documents was to provide a foundation of data that would establish the district's commitment to create a data driven culture in the district. Furthermore, some participants mentioned the district documents that allowed me to triangulate the data to determine the perception and use of data in the Title I schools.

The district policies and regulations did contain procedure that expected teachers and administrators to use data, but the language did not make it mandatory for teachers and administrators to use data. DDDM was not enforced through policy, consequently,

administrators cannot be held accountable for the use of data. The expectation to use data in the new principal and teacher evaluation must be linked to policy for accountability. Datnow et al. (2006) recommended utilizing policy to communicate explicit expectations to create a DDDM culture in their study. The district strategic plan, the roadmap of the district, reflected the policies and regulations and this too had very little evidence of a commitment to use data.

The building strategic plans conducted by the Middle States Association of Colleges and Schools (MSACS) indicated different levels of data use according to the MSACS final reports. Chesapeake and Sea View were commended for their use of data during the time of the Middle States review. Both schools were given six to seven commendations respectively from the Middle States review team for their use of data to make decisions. Lakeside's final report represented some commendations regarding data use, but included more than nine recommendations for improvement. According to the documents, Lakeside was the least proficient in using data, however, the discussion of findings below will demonstrate a strong effort by the building principal to change the deficiency in the building. Lakeside High School has the highest percentage of economically disadvantaged students of the three Title I schools in the study. This serves as the motivation for the principal to create a data driven culture in his building.

The newly created teacher evaluation and principal evaluation created to comply with the TEACHNJ Act legislation included a strong theme making teachers and principals accountable for using data. In addition, the district's mandatory instructional model professional development focuses on DDDM for teachers in the classroom. The district applied to the Department of Education in the state to obtain a waiver that

117

allowed them to create their own teacher evaluation instrument related to the instructional model that they have been trained in for the past 16 years. These documents call for a strong commitment to using data to make decisions.

The professional development in the district's instructional model created a strong theme in the findings. The professional development is provided by Research for Better Teaching (RBT), a school improvement organization founded by Dr. John Saphier in 1979. RBT serves over 100 schools across the country. Turnkey teachers have been trained by RBT to instruct others on the instructional model and teach two courses in the district. The first course is Studying Skillful Teaching and the second course in the sequence is Investigating Obstacles to Achievement. The courses are based on the instructional model outlined in *The Skillful Teacher* written by Saphier et al. (2008). Teachers must complete the series of professional development before the first day of their third year teaching in the district.

The RBT documents and syllabus included material on using data in the classroom to guide instruction. Also, participants mentioned the teacher evaluation system, as the new instrument is connected to student performance through student growth objective (SGO) data. This new mandate in the state created nervousness among the teaching staff that surfaced in the data collection and findings of this study. The document analysis described the new evaluation system implemented as a result of the TEACHNJ Act. The findings and the discussion below highlight the references to the new evaluation system and the apprehensiveness of the participants, as the evaluation includes the performance of students through the Student Growth Objective (SGO).

118

In summary, the district documents demonstrated an understanding that teachers and administrators should be using data. This was evident as it was included in professional development curricula and both the teacher and principal evaluation instruments. However, the absence of proof regarding the expectations to use data in the district policies and strategic plan demonstrates the lack of a strong commitment to build a convincing data culture in this school district. This evidence from the document analysis aligned with the findings from the participant interviews that will be discussed below.

Discussion of Major Findings

The first research question specifically looked at the perception of teachers and administrators using data to make informed decisions. The analysis uncovered the participants' beliefs regarding DDDM, the perception of data, the perception of teachers using data, and the perception of a data culture in their schools. The second research question looked at the participants' actual data use. Themes developed from the types of data used, the authority that participants had to initiate change, items that facilitated and barriers that impeded data use. The third research question investigated how the teachers and administrators perceive the district data team. Themes developed from the data about the importance of the data team for the district, the influence of the district data team on the schools, the general knowledge of the data team by participants, and information regarding how the data team can improve. The fourth and final research question investigated the leadership of the central office, schools, and my personal leadership in reference to DDDM.

Finding 1: Overall DDDM beliefs. The goal of the interview protocol questioning developed for research Question One was to investigate the perception of the participants regarding DDDM. It was important to collect data simply regarding the participants' belief of DDDM. The description below establishes a starting point for the discussion. The questioning elicits data that indicate their surface knowledge of DDDM as well as their espoused belief of the concept. The espoused theory, according to Argyris and Schön (1974), is what people would like others to think about what they do. This finding illustrates the espoused theory of the participants regarding DDDM. Other findings related to actual use will describe the theory in action (Argyris & Schön, 1974).

Overall, the participants in the Title I schools believe that using data to make decisions in education is recommended to improve their practice. The teachers and administrators have been exposed to information related to DDDM in the instructional model professional development, the new evaluation instruments, and the data team either directly or indirectly. The most interesting finding related to the participants' perceptive belief of DDDM was the difference between their roles in the organization. Teachers instinctively related their belief to instruction, whereas administrators related their beliefs toward simply validating decisions. The principals' need to validate is their leadership attempt at creating the buy-in necessary for initiatives to be effective. However, the automatic reference to instruction is a reflection of what is most meaningful to the teachers, their classroom.

When asked about their belief of DDDM the teachers responded with a strong belief that data affect instruction by guiding or improving the classroom instruction. Datnow et al. (2006) found in their study that the school systems achieved success using

DDDM, but had different approaches. According to Levin and Datnow (2012), "Data need to be effectively used to improve instruction in schools, and individual schools often lack the capacity to implement what research suggests" (p. 3). Furthermore, DDDM is successful when individuals at different levels of the organization are committed to data use. Findings discussed below will provide clarity to realize if the teachers in this district have the capacity to use data effectively.

The administrators responded with the belief that data validate decisions, but did not indicate if the data made the principals' decisions quality. The principals and supervisors indicated a need to be able to support decisions made with data when presenting to their constituents. The need to convey to the culture that decisions are not being made by gut feelings or on a whim was very important to the principals and supervisors. The literature review described the criticism of educators that instinct or gut feeling was used instead of data (Slavin, 2003). The administrators in this district wanted to emphasize the contrary, that decisions are based on data in this district. This aligned with evidence that the administrators recognized the importance of data due to the emphasis across the district through the data team, professional development, and the expectation from the central office highlighted in the findings.

The theme that developed among the data team participants was the expected belief that decisions should be made with data. In addition, the data team belief was to emphasize utilizing more than one data point. According to Love (2009), the recommended method of analysis for teachers is to utilize multiple sources of data when making decisions. One of the models utilized to analyze data for the district data team was developed by Love (2009). The finding that the data team recommends this supports

121

the fact that the team retained the model of analysis enough to emphasize proper analysis to other staff members.

Finding 2: Subtle data culture. Earl and Katz (2002) note that a data culture is making time to use data collaboratively with a sense of urgency. Furthermore, Owens (1991) adds that the data culture aligns with the beliefs and values of the organization. Making educational decisions based on data aligns the profession with others such as business and medicine that use data to make decisions, however, educators have to overcome a number of barriers to create data cultures in their districts (Slavin, 2003). According to the findings, the participants indicated a data culture was present in their school, but with caveats. The caveats were the barriers that remain in the schools preventing the participants from being completely confident that their buildings have a strong culture of data. The findings in the previous chapter and discussed later in this chapter include the lack of time to work collaboratively. The participants expressed that DDDM was important, however, the time to collaborate with data was not provided in their schools on a regular bases. Consequently this barrier prevented the participants from articulating that their school has a data culture. This finding aligns with the aforementioned literature and was consistent in this study.

The teachers, administrators, and data team members each expressed a data culture was present along with a barrier or caveat that prevented them from reporting confidently about the data culture of their school. The principals and data team members were the most critical of their school. The principals in all three schools reported a hopeful 'yes' regarding the data culture in their building, but they admitted that it did not fit the definition of data culture provided. They indicated that time to use data

122

collaboratively with a sense of urgency was not necessarily the way their buildings operated in reference to DDDM. The data team members, the most trained staff members in using data, reported emphatically that their buildings did not represent a data culture in all three Title I schools. The teachers reported a similar opinion by responding that their buildings used data, but not to the extent that they would consider it a data culture.

The data use process developed in the literature review outlined the steps necessary to analyze data. The process developed with the influence of Honig (2003) and Coburn and Turner's (2011) work included the stages of searching, noticing, interpreting, and acting on data. The data culture was not present due to the fact that time to collaborate was not provided to fulfill the interpretation stage, preventing the teachers and administrators from reaching the final and most important stage, action.

Facilitating the use of data. The data collected to answer the research questions indicated certain items and activities that prompted the participants to reference positive beliefs about the use of data or an indication that the district beliefs have shifted over time. The perceived shift was due to the professional development courses offered through Research for Better Teaching (RBT) and the improvement in technology through the student information system. First, the participants often referenced the instructional model professional development as the reason for a shift in the beliefs regarding the use of data, however, this is not policy, but it is expected that teachers complete RBT prior to receiving tenure. The document analysis and the summary in this chapter describe the strong reference to data use in the classroom in the professional development course curriculum. Second, 16 out of the 21 participants discussed the use of technology to access data as a reason for the shift in the beliefs about data.

Professional development. Levin and Datnow (2012) stated four actions necessary to influence educators in the DDDM process. One specifically was the need to build the data driven knowledge and skills for teachers. The districts involved in Levin and Datnow's (2012) study had a district driven professional development very similar to the school district in this study. Teacher comments were very similar in this study compared to Levin and Datnow's (2012) study. The school districts studied in the Datnow et al. (2007) study had a strong investment in professional development in an effort to build school capacity for DDDM.

The teachers discussed the fact that they did not have the knowledge or awareness about using data in the classroom after they completed teacher preparation programs, but the district professional development courses taken while actually practicing created a shift in their beliefs. One of the participants said, "Collecting data when you are actually practicing in the classroom … is the beauty of our professional development." In addition, teachers referenced how the actual course has changed over the 16 years that teachers have been taking the course. They mentioned, as they were able to go through a "refresher course" and the updated curriculum with an emphasis on data changed the way they teach in the classroom. As previously stated in the document analysis summary in this chapter, the professional development courses through Research for Better Teaching taken by the teachers and administrators evolved over time. The participants indicated that the earlier version of the course did not include instruction on DDDM. Currently, teachers only have to take the courses once in their career, however, this finding indicates the need to take the course each time Research for Better Teaching updates the curriculum.

Coburn and Turner (2011) and Honig (2003) say that one way educators notice data is through professional development or professional learning communities. This step to notice data is needed in the data use process outlined in the literature review followed by the important steps of interpreting data and creating actionable outcomes. The finding that the district's instructional model professional development influenced the teachers and administrators supports the fact that the district's Title I schools are searching and noticing data (Coburn & Turner, 2011; Honig, 2003).

Technology and access. As the findings strongly indicated, the use of technology facilitated the access of data for the teachers and administrators in the Title I schools. The student information system implemented in the district in 2005 has provided the principals and teachers with data from reports and grade books that are easily accessed. The technology allows the teachers and administrators the ability to initiate the data process by easily searching for the data that they need. Honig, influenced by Levitt and March (1988), proposes a definition of search as processes that are developed by a collective influence of organizational members resulting from data that entered the organization. According to Honig (2003), the individual efforts and experiences regarding the search process result in a combined change in practice. This was not evident in this study.

One teacher summarized this finding by saying, "I now have a wealth of data at my disposal to actually make some informed decisions about instruction … technology has made it easier." Many school districts have some sort of technological student information warehouse (Means, Padilla, DeBarger, & Bakia, 2010). When implemented

125

properly, technology will facilitate the access of data and collaboration to analyze data (Lachat & Smith, 2005; Mandinach, 2012).

Complacency suppresses urgency. Within the research problem that stimulated the study I emphasized the point that achievement gaps do not exist exclusively in under achieving schools (Aud et al., 2012; Hemphill & Vanneman, 2011;Vanneman et al., 2009;). In Chapter 4 I highlight the high achieving data regarding test scores and graduation rate associated with the research site. The findings indicate a sense of complacency promoting a lack of urgency, which inhibits a data culture (Earl & Katz, 2002). The complacency may be the reason that a data culture was not fully present in the schools.

Arne Duncan (2014), the United States Secretary of Education, warned the nation of complacency when he outlined marginal improvements in high school graduation rates, college enrollment, and increased scores on the National Assessment of Educational Progress (NAEP). However, the warning came when he described the deficiencies in the Program for International Student Assessment (PISA) scores compared to other countries. Duncan (2014) articulated that the real problem was that U.S. students are not getting worse, but not improving either. The national picture painted by Secretary of Education Duncan is similar to the picture of this study. If the Lakeview district looks at graduation rate, college bound rate, and certain standardized test scores, they may become complacent.

Leithwood, Louis, Anderson, and Wahlstrom, (2004) posit that school leadership is critical to school reform. A leader can prevent complacency and motivate teachers and students through quality instructional and shared leadership (Seashore Louis, Dretzke, &

Wahlstrom, 2010). However, leaders in low achieving schools and districts have a better chance of making an impact on student achievement than their counterparts in high achieving schools (Leithwood et al., 2004; Seashore Louis et al., 2010). At any rate, Duncan's (2014) plea to prevent complacency can apply to any level, including the district researched in this study.

The findings indicate that the participants in the Title I schools had an awareness of DDDM that prompted them to articulate that their school had a data culture. After discussing the data culture of a school that provides time to collaboratively analyze data with a sense of urgency, the participants recanted their original claim that the school had a data culture. The missing component that the findings highlight is the mutual or reciprocal commitment and sense of urgency from the schools. The data included a lack of willingness to seek needed knowledge and work through barriers to create a data culture on their own, even though the participants were aware of the central office commitment to DDDM.

Finding 3: Fear of data. The interview questions developed for research Question One were designed to draw out the perception of data use in their schools. The findings indicate a strong fear that too much of an emphasis on data will force them to lose the humanistic side of education. Teachers in each building expressed the fear of losing the humanistic side that attracted them to education. One teacher described this for teacher participants in the three buildings by saying, "This is not a business … we do not have a say in the ingredients … we work with every child that comes through the doors." Earl and Katz (2002) say that this type of reaction is due to the pressures of accountability. They say that educators must move from "accountability as surveillance

to accountability for improvement" (Earl & Katz, 2002, p. 2). Furthermore, Earl and Katz (2002) suggest that the shift to a mindset of improvement will require educators to analyze the full picture. This aligns with the data collected regarding the reference that using multiple qualitative and quantitative data points was important to the teachers and administrators. Using multiple points of data in this fashion will allow them to analyze the full picture according to Earl and Katz (2002).

The teachers and principals related the fear of data and losing the humanistic side to education to the new teacher evaluation instrument outlined in Chapter 1. The teacher evaluation instrument will be connected to student achievement through SGOs and submitted to the Department of Education for the first time ever in 2014. One teacher's statement summarized the sentiment underlying the fear of data by saying, "There is a huge fear out there now about data when it comes to evaluation." The new legislation mandating the evaluation instrument connected to student performance data automatically set the educators back to the mindset of accountability for surveillance according to Earl and Katz (2002). Previous chapters outlined the implementation of the new PARCC assessment designed to test the Common Core State Standards in English and math. The extra pressure of a high stakes test, measuring students on the Common Core State Standards, adds to the anxiety. The fear highlighted in the findings related to the TEACHNJ Act followed by the high stakes PARCC assessment impeded the progress of implementing a data culture. In addition to the legislation negatively consuming educators, schools receiving Title I funding are often persuaded to use one of the plethora of "silver bullet reform strategies" that have not been successful in school reform (Doolittle & Browne, 2008a, p. 294).

The participants expressed a fear that data are not trustworthy and that their skills to analyze data were not reliable. According to Bryk and Schneider (2003), social exchanges build trust regarding school reform initiatives. They say that trust builds with social interactions among administrators, teachers, students, and parents. Consistent day-to-day social exchanges build trust. The lack of trust in data highlighted in the findings may be due to a lack of social exchanges that surround data conversations in the schools. The lack of social exchanges is related to the lack of time to collaborate. The lack of time barrier discussed further below prevents the teachers and administrators from completing the interpretation and action phase of the data use process. The lack of social exchanges along with the fear associated with the newly implemented teacher evaluation instrument previously discussed in this section could contribute to the overall lack of trust in data.

Teacher data. The data indicated anxiety from teachers due to the new requirements in New Jersey as a result of the TEACHNJ Act legislation that was a response to the RTTT competitive grant requirements. Teachers created Student Growth Objectives (SGO) that serve as goals for groups of students that can be tracked using objective measures such as assessment. In addition, the teachers will be evaluated with an evaluation instrument that will produce a numerical representation of their effectiveness in the classroom. This will be the first time that teachers will have the opportunity to analyze their own data in addition to student data.

According to the New Jersey Department of Education Student Growth Objective guidebook for teachers the process can be helpful if it is implemented consistently and rigorously. The teachers will be able to analyze their own SGO data to improve practice throughout the year and in preparation for the upcoming year. The data can be valuable

data to guide individual professional development plans to focus on areas of weakness. The data from the study indicated that analyzing personal data would require a continued shift in thinking by teachers about DDDM in an effort to create a data culture and improve student learning. The influx of policy and legislation creating personal teacher data contributed to the fear of data reflected in the findings. The recommendations for the district will alleviate the fear and improve the data culture in the schools allowing them to make better use of personal data.

Finding 4: Barriers to DDDM. When I discussed specific types of data with participants the findings indicated that they focused on data as exclusively numbers or they understood the value of both quantitative and qualitative data. The different types of data mentioned by participants ranged from standardized test scores, classroom assessments, high stakes tests, such as College Board's SAT and PSAT, discipline data as well as qualitative data. The teachers in the study referenced the data collected in the classroom included assessment data, and qualitative data such as feedback from the students. The teachers indicated that they use data from their own assessments that can be accessed through the student information system and formative assessments used to assess the understanding of the material taught from day to day. In addition, the teachers indicated that they collect informal data from conversations with their classes that often lead them to change the pacing or re-teach material if the students express a lack of understanding. The participants in leadership positions referenced the data that would allow them to obtain an overarching big picture of their school, such as high stakes standardized testing. The principals will often look at the data from the PSAT

administration that will allow them to gain comprehensive knowledge of the performance of the student body.

The teachers from all Title I schools referenced formative classroom assessments as one of the main sources of data that they use to guide instruction. The strong reference to formative assessment is due to the professional development on the instructional model that all teachers in the district attend. One math teacher summarized this when he sad, "I think that our staff is more aware of formative assessment of data than staff that might not have such a professional program." The professional development was discussed in the document analysis and will be discussed further in a future finding. The English teachers from all of the schools expressed the fact that they did not have the skill to use data like their math teacher counterparts. This discussion indicated that their perception of data was the use of numbers exclusively. One teacher summarized this by saying, "When you talk about data you are talking about numbers and we are not math brains."

An interesting finding and to the contrary of the English teachers, the math and science teachers recognized qualitative data as much as the quantitative data. One science teacher expressed this feeling that surfaced with others by saying,

> This is my 10th year teaching and I am starting to realize that data can look a lot of different ways so I have gotten into a lot more of the qualitative aspect of data in terms of keeping journals of my own reflections.

Flowers and Carpenter (2009) support this as a barrier and a common misconception. They pointedly claim that one does not have to be a statistician to analyze data.

Time and collaboration. The barrier that was most cited by participants was the lack of time to analyze data collaboratively. The administrators and teachers mentioned the lack of time to use and analyze data effectively as a barrier. One principal

summarized the feelings of the other principals when he said, "There are only so many minutes and hours in a day." The leaders expressed the fact that managerial duties of the building decrease their time during the school year to use data appropriately with their staff. In addition, the district currently provides less than 15 hours of professional development in-service time according to the collective bargaining contract. This does not include the aforementioned courses mandatory for new teachers through Research for Better Teaching. During the year of this study, all of the in-service time was used to comply with mandates such as the TEACHNJ Act and preparation for the new PARCC assessment. This left no time to allocate to the much needed collaborative work with data. According to Levin and Datnow (2012), it is the job of the principal to ensure that collaboration time focused on data is secure in order to prevent shifting the focus on managerial housekeeping, however, federal and state mandates are making it very difficult for principals to allocate the time needed.

Datnow et al. (2006) outlined key strategies of performance driven school systems. In their qualitative case study of four school systems, they highlight the recommended strategy of providing time for teacher collaboration. The teachers interviewed in this study resoundingly expressed that they want more time to collaborate with teachers across the district and within their buildings. One of the teachers expressed the sentiment of many when she said, "We have in-services during the year that do not include time to spend with other teachers … we just need time to collaborate." Levin and Datnow (2012) supported the need for principals to provide time and collaboration by recommending this as a result of their case study. The principals did not express this need to provide collaboration time for teachers, but referenced this more from their personal

lack of time. Levin and Datnow (2012) point to this as an obligation of the principals and I will address this in the recommendations section of this chapter.

    Data culture. During the interview I defined data culture as an organization that makes time to use data collaboratively with a sense of urgency that aligns with the beliefs of teachers and administrators (Earl & Katz, 2002; Owens, 1991). Both teachers and administrators answered that they felt as though the school had a data culture, but they admitted that the culture was not complete as defined. The previous section describes the lack of time to collaborate on school initiatives that surround data. The data indicate that an expectation to use data and an awareness of the importance of data is evident from central office leadership, building leadership, and the district data team, however, the time to collaborate is deficient.

    Datnow et al. (2006) and Marsh et al. (2010) recognize in their studies that educators must also overcome barriers such as the lack of time to analyze data. Wayman, Jimerson, et al. (2012) argue that all of the barriers associated with using data to guide instruction are related to leadership. In addition, LaRocque (2007) posits that the leader can correct the negative influences on data use such as the lack of time to use data. The literature strongly highlights the point that the time needed to analyze is deficient in educational institutions across the nation. It may be true that leadership plays a big role in correcting this issue, but after the literature review and the in-depth analysis of data in this study, I believe that major obstacle preventing educators from creating a data culture is the constant imposition of federal and state mandates (Doolittle & Browne, 2008b). Ironically, the legislation outlined in the literature review requires the use of data; however, the constant mandates and requirements of NCLB, NJQSAC, CCSS, PARCC,

133

and TEACHNJ also take an inordinate amount of time for leaders to implement. This diminishes the ability of leaders to create the appropriate data culture that is recommended to improve student outcomes.

Finding 5: District data team. The themes that developed in the data analysis referenced the importance and influence of the data team, general knowledge of the team, and implications for improvement. In summary, the participants recognize the importance of a district data team, but the actual knowledge of the work was limited to certain groups represented in the study participants. The school district in this study utilized the models developed through the work of Love (2009), as well as Boudett et al. (2005), to create the district data team.

The findings indicated that 18 out of the 21 interviews expressed a feeling that the data team is important to the school district's efforts in educational change and improving student outcomes. The principals indicated the importance of the data team, as the data projects that are analyzed represent an attempt to improve. The principals admitted the lack of time that they have that I indicated as a barrier in a previous finding. They indicated that the work completed by the data team initiates the process so that they can use the results in their buildings for the actionable outcomes, the final stage of the data use process. The Lakeside principal expressed this when he said, "I think the data team is a good thing … they collect and analyze a lot of data for us."

The teachers felt as though the data team model was important to the district due to the changes in education and in the district, such as a new curriculum model and the teacher evaluation system described in the document analysis. One teacher expressed the mission of the data team to distribute the data across the district when they said, "The

134

data funnels down to each school … the school data team models the behavior and again filters it down to the teaching staff."

The participants' perception that the data team was important was strong; however, the influence did not come across strong in the data collection. This finding along with the weak commitment of the district highlighted in the lack of data direction in policy and the strategic planning demonstrates a deficiency that I will address in the recommendations and implications. The Chesapeake supervisor referenced this by saying; "I would say the data team's influence in the building is more indirect by influencing district operations they influence building operations." The influence of leadership has a great deal to do with the success of creating the capacity to use data to make decisions in school (Levin & Datnow, 2012). Levin and Datnow (2012) posit that professional development for stakeholders and time to collaborate are necessary for the leader to be successful in creating a data culture.

It was evident in the findings that there are deficiencies with the district data team model the way it currently operates. Less than 50% of the respondents had knowledge of the team's work or members. The administrators, for the most part, had knowledge of the work of the data team and the team members from their building. The teachers had limited knowledge of the data team other than what I told them. One teacher frankly stated, "Well, to be honest I did not even know we had a data team." Once again, this finding indicated a deficiency that I feel could be addressed.

The data collected in the interviews highlighted the participants' opinions as to how the data team could improve. One of the primary recommendations was to create a component in the data team process that will allow them to report the data analysis

135

findings to administration and faculty. The principals indicated creating a protocol for the data team members to report findings at administrative council meetings that include school administration and teachers. Some of the participants suggested sharing the results of projects through technology such as a password protected web site. The suggestions will be considered in the recommendations.

The actual data team members interviewed felt as though there was a process missing to gain follow-up information after a project is completed. One data team member mentioned that if the follow up were added, "…that would benefit the school and district." The findings indicated that follow up for the data team members would make them more informed to educate the rest of the staff members in their schools. Previous studies recommend immediate feedback to constituents in order to properly build capacity (Datnow et al., 2006).

Finding 6: Leadership. The final finding relates to the leadership of the central office, principals, and my leadership as the creator of the district data team in this district. Themes emerged referencing the specific aforementioned leaders in addition to data that reference if these leaders are well positioned to use data. Well positioned was defined for participants as more than the authority to use and act on data. If an educator is well positioned to use data, as a leader, they will have the ability to initiate the characteristics of a data culture (Park, 2008). The data culture includes the ability to provide time for staff to collaborate with each other using data with a sense of urgency and a connection to the beliefs of the district (Earl & Katz, 2002; Owens, 1991).

The findings from the Lakeside staff indicated that the principal models the use of data in faculty and administrative meetings. All of the interviews of Lakeside staff

members referenced the principal's proficient use of data with them. Their perception was that his decisions were made while considering data and that data are presented so that the process is transparent. The clear indicator that the principal had a strong use of data was the actionable outcomes that they could cite by referencing actual programs that initiated from data use. The Lakeside principal had a more critical personal view of himself and his administrators. He admitted that, "I respect the use of data and I would like to get better at using data." He also stated that the data culture is not at the level that he would like.

The overall perception of the Chesapeake staff was that the principal was data driven to make specific and calculated decisions. The findings from the staff indicate evidence that using data is an expectation and if you approach the principal with something it is expected that you have data to support the conversation. The staff also indicated, in a positive way, that the principal acts as the data gatekeeper in an effort to shield her staff from the mounds of data. The data team members mentioned a change in this belief in data use since the principal started in the position within the last five years. The principal stated that her motivation to use data is due to the central office leadership. She said, "In this district you have a superintendent who is driven by data."

The Sea View staff indicated that data might be used differently than the other Title I schools. The Sea View data team indicated that data are used only when a problem surfaces. They said, "Nobody comes out and tells us to go collect this data and see what is happening with it." The Sea View principal justified this by outlining his plan for DDDM when he became principal six years ago. He described a process of slowly implementing the data driven process so that the fear of data diminishes.

The perception of the central office and DDDM is positive; however, 1/3 of the participants mentioned the central office in their interviews. The teachers mentioned the fact that the teacher evaluation tool was connected to an instructional model that is deeply embedded in the district, contrary to other school districts in the area that chose a system "off the shelf." The evaluation instrument is connected to the instructional model professional development, Research for Better Teaching that has been in the district for 16 years. The evidence that the teachers appreciated this connection and effort from the central office was clear in the data analysis. The respondents articulated the central office influence by saying, "it all starts at the top" or, "it is a district expectation." This indicates that the school teachers and administrators are aware of the central office expectation to use data. and consequently, indicates the influence of the central office leadership.

My leadership. How does a central office-initiated district data team influence the school's ability to use data? The answer to this overarching question is a direct reflection of my leadership. When I started in the central office as the Assessment, Accountability, and Planning Coordinator the function of the new position was to provide leadership in the coordination of district-wide efforts to plan, develop, and manage the student achievement data for accountability and assessment programs. As a new position and no direction on how to accomplish this I initiated a quest to research the best way to complete this charge. I researched data team models and developed a model that was grounded in research and would have the best chance for success within the culture of the district. I made the proposal to initiate the team to the superintendent at the time in 2010, which gave me full autonomy to implement the team. I recruited the team, trained them utilizing the models selected (Boudette et al., 2005; Love, 2009), developed a

138

collaborative mission and we were on our way. This study was the true test to determine if this model is effective in influencing the school's ability to use data.

The data were laced with references of my leadership directly or indirectly. Twenty-two out of 24 participants from all three schools indicated that the district emphasis on using data was a shift over the past five years. The findings above indicated reasons responsible for this shift such as the expectation to take the RBT professional development courses, the TEACHNJ Act prompting teacher evaluation, NCLB and NJQSAC accountability, and the data team that analyzes accountability data. My leadership in the central office was referenced when participants mentioned the positive results of the data provided by my office; the data projects that morphed into annual analyses referenced in the findings (see Appendices E and F) and the general perception that the use of data is an expectation. The document analysis indicated no commitment to data use in policy or the strategic plan, the two most influential documents for the operation of the school district. The difference over the past five years was my work to build a data culture at the central office. The work includes the oversight of district data processing and the implementation of the district data team concept developed exclusively through my leadership vision regarding DDDM in the district.

The principal of Chesapeake mentioned this by stating, "I really feel that anything we want you and data processing are able to figure out a way to get the data for us … you guys are so familiar with using it." This references the fact that building leaders contact my office when data is needed. In addition to the fact that they are actually asking for data, this finding is an example of the shift in beliefs represented in the findings. The supervisor at Chesapeake mentioned a recent visit of mine in his building when he said,

"The PSAT data that you brought to us today was presented in the right frame …you know your audience." He added by referencing a specific data project that we continue annually for Biology Teachers (see Appendix F). The Sea View principal stated, "I probably would not be in a place with data had it not been for central office." He added by referencing me by the director title saying, "We do have a Director of Programs Planning who can give us data so it is easier to look at."

The responses from the participants indicated an awareness of data that was not present in the district prior to the implementation of the data team. Fifteen out of 21 participants expressed that they were well positioned to use data. The feeling of being well positioned to use data included the knowledge and access. The data vocabulary that is developing along with the comfort to access or ask someone for data represents the work of the data team. The vocabulary is spreading and the reference to access the data indicates that participants are knowledgeable enough about data use to start the process by searching for data (Coburn & Turner, 2011; Honig, 2003). The Chesapeake supervisor referenced this when he said, "We were standing in the hallway and a data team member mentioned a common phrase … it was a term that represented an internal language within people who are data fluent." A common data language is necessary to improve student outcomes (Boudett et al., 2005; Love, 2009). In addition, 18 out of the 21 participants reported that they felt the data team concept was important. The lack of any reference to a data culture in policy or the strategic plan suggests that if that question was asked prior to the data team implementation, the participants would not know what a data team was at that time.

Trustworthiness. The participants exhibited a great deal of trust and cooperation during the interview process. The major findings illustrated issues due to the candid responses as a result of the trusting relationship that I sensed throughout the data collection. According to Seashore Louis and Wahlstrom (2011), "Neither organizational learning nor professional community can endure without trust between teachers and administrators" (p. 55). The staff will demonstrate appropriate professional risk if an element of trust is present (Serva, Fuller, & Mayer, 2005). Studies in the past have determined that schools with trusting teachers improve the culture (Bryk & Schneider, 2003). The trust could be a positive reflection of my leadership reputation in the district.

The participants expressed a willingness to be interviewed at any time and engaged in a significant conversation. The data collected during the participant interviews elicited meaningful data regarding leadership and DDDM that will be included in the recommendations of the study. According to Burns (1995), a transformational leader engages followers, helping to make each other better and creating a professional bond and rapport. Burns describes transformational leadership as a leader follower relationship that will raise both to a new and better level. This is a dynamic moral style of leadership. The participants' behavior in this study reflected an element of trust toward me that would be common toward a transformational leader that has a professional rapport with constituents.

Implications for Title I Schools

Did the central office-initiated district data team influence the school's ability to use data? The short answer is yes; the data team did influence the school's ability to use data. The district's teachers perceive data use as important and they use different types of

data to make decisions to the best of their ability. Conscientious educators do what is right for children. The teachers and administrators perceived the data team as important, however, lacked knowledge of the actual work of the data team. Central office leadership and building leadership will indeed impact change in the district. However, the aforementioned general statements related to the research questions do not summarize the implications of this study.

This research identified how the teachers and administrators in the Title I schools use data, perceive data use, the data team, and the leadership. Implications of this research include three key points. First, the central office matters when using data and creating a district data culture. Second, the schools matter equally as much in the efforts to use data while creating a data culture. Third, the central office and the schools must develop a reciprocal relationship, dependent on each other and working together to use data effectively while creating a data culture.

The implications below are framed using past research and literature that guided the study. First, the data use processes of search, notice, interpretation, and action will be instrumental in outlining the effectiveness of the central office and school use of data. Second, Honig and Venkateswaren's (2012) characteristics for appropriate central office support of data use will be utilized as well. Third, the definition of data culture utilized in this study stating that organizations need time for collaborative data use within the beliefs of the organization will be used as the third leg of the implications framework.

The central office efforts matter. As previously stated, Honig (2003) and Coburn and Turner (2011) influenced the data use model outlined in the literature review and was used to guide this study. The data use model outlined the process that includes

searching for data, noticing data, interpreting data, and executing actionable outcomes as a result of the data use. Honig's work (Honig, 2003; Honig & Coburn, 2008; Honig et al., 2010) suggests that the relationship between the central office and the schools matter when using data. Honig and Venkateswaren (2012) posit that appropriate central office support for DDDM will be effective by providing the flow of information; assisting schools in making sense of the data, creating and communicating school expectations to use data, and providing school staff with professional development to support data use.

Central office support. The central office support was evident in three out of the four characteristics outlined by Honig and Venkateswaren (2012). The findings indicated that the teachers and administrators could access data or felt comfortable utilizing the central office as the hub of data. The flow of data was sufficient. The data team provided a model for the teachers and administrators to utilize in their own practice, however, the findings indicated a lack of knowledge regarding the actual work of the data team. This deficiency will be addressed in the recommendations by utilizing the leadership on the data team to improve communication in the schools. The instructional model professional development was a strong thread in document analysis and interview data. It is mandatory as per the central office that all teachers participate in these courses and it has been in place for 16 years. This, along with a stronger link between the data team and the schools will provide a stronger professional learning environment regarding the use of data.

The school efforts matter. Levin and Datnow's (2012) study suggests that the principals play a critical part in DDDM. They identified key principal actions that align with the data use process and definition of a data culture used in this study. In addition,

143

Levin and Datnow (2012) posit that the relationships between the central office and school administrators and teachers are crucial in the success of achieving effective DDDM. This aligns with my implication that the central office and schools need a reciprocal relationship. Datnow et al. (2006) suggest that effective data use requires a systemic effort where the central office leadership and the building leadership play key roles in this process.

   Data use process. The previous section supports the notion that the central office is needed particularly in the searching and noticing data phases of the data use process. In addition, the central office data team provided a process of data use that served as role modeling for the schools, however, the schools are important in the interpretation and action phase. The findings in this study exposed a missing link in the data use chain. This was evident from the participant data that indicated a lack of knowledge about the data team's work and the members of the team in their building. Coburn's (2001) study further illustrates the connection to the interpretation of data in a collaborative educational setting. Coburn (2001) found in this study that teachers gained access to a range of interpretations through collaborative interaction with other teachers. The findings strongly indicated a need for time to collaborate. Coburn and Turner (2011) specifically state that the interpretation of data is needed to proceed to the action phase. This is precisely the missing link in the chain associated with the interpretation phase of the data process that will be addressed in the recommendations.

   Data culture. Closely related to the lack of time to collaborate is the concept of building a data culture. As I previously stated, the characteristics of a data culture are time to collaborate with intense purpose connected to the beliefs of the organization (Earl

& Katz, 2002; Owens, 1991). The barrier that exists in the district is the lack of time for collaboration and how useful teachers and administrators find that practice. Also, the strategic plan of the district illustrates no evidence of the belief in data use (see Appendix A). Addressing the barrier of time and the commitment of the district through the strategic plan will positively affect the data culture in the district.

  Central office and school reciprocal relationship. The central office and the schools matter equally to the use of data and building a data culture. The district data team and the central office have been integral in providing data for teachers and administrators to notice. In addition, the district data team role models a process of data analysis that is crucial to the interpretation phase and producing actionable outcomes. The support for the instructional model professional development has been a 16-year commitment, however, the formal expectation of the schools is not in place. Formal expectation through policies or the strategic plan will provide the needed activities in the schools to interpret the data through the lens of their schools and provide actionable outcomes.

  The central office and the schools will need to provide the time to collaborate using data connected to the beliefs of the organization. The teachers desperately need the time for collaborative data analysis. The data team initiated this collaborative work, but recently, federal and state mandates derailed the initiative. The recommendations for the district will refocus the initiative to provide the data culture that is deficient in the district.

  Figure 5 illustrates the reciprocal model necessary to provide the missing link to create a culture of DDDM that the district data team set out to do in 2010. Figure 5 illustrates the continuation of the district data team and central office activities that will

145

strengthen the processes of search and notice. The addition of formal expectations will strengthen this model. The bottom of Figure 5 illustrates the reciprocal action of the schools with the addition of time to collaborate and actionable outcomes to create the data culture.
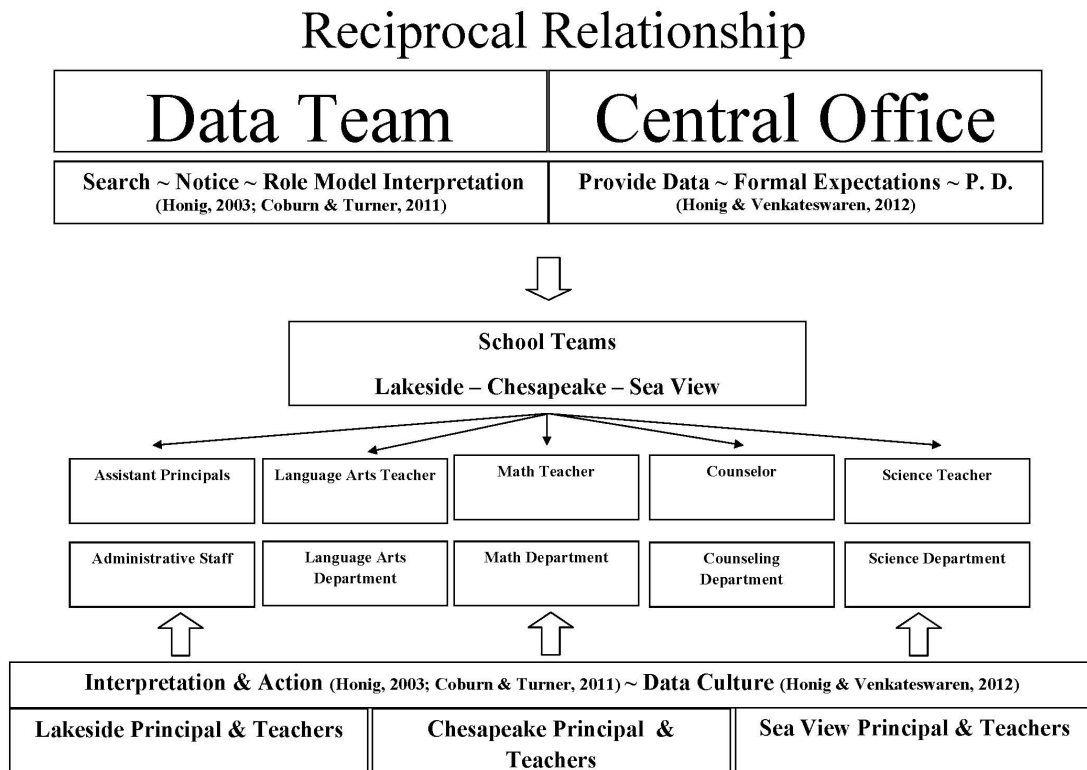
Figure 5. Reciprocal Relationship

Recommendations

The following sections will outline the recommendations for the school district and the Title I schools. The recommendations for the school district address the deficiencies found contributing to the ability to use data and the presence of a data

culture. The final section will highlight recommendations for future research that may be important regarding DDDM in other school districts, particularly Title I schools.

For the district. The recommendations below will address the deficiencies found regarding DDDM in the school district and the Title I schools in Lakeside School District. The recommendations will require efforts from both the central office and schools.

1. A strong commitment to DDDM in the district will not be evident unless the expectations are included in district policy and the strategic plan. The expectation to use data should be included in the job descriptions of teachers and principals and connected to the newly implemented teacher and principal evaluation instruments.

2. The district data team will be more influential to the schools if the communication of the data team's work, team members, and process of analysis improves. The recommendation is to utilize the data team members in the schools to present on the work and the data analysis process during administrative meetings, faculty meetings, and committee meetings as needed.

3. The main barrier to DDDM is the lack of time to collaborate using data. It is recommended that the central office, principals, and teachers investigate school year and daily schedules that would provide teachers and administrators time to collaborate on data. This schedule may be a schedule that will make use of a common lunch period that will eliminate the restrictive daily schedule in place currently. Also, a yearly schedule with delayed openings and early dismissals

throughout the year will provide professional development time for teachers to participate in using data.

4. It is recommended that the current data team members formally train the principals, administrators, and teachers so that all stakeholders receive the appropriate training developing the commitment (reciprocal relationship) to implement DDDM in the school.

5. It is recommended that the school principals utilize formal action plans developed as a result of the data analysis. The principals will report the progress and outcome of the developed action plan to the building teachers and administrators, data team members, data team, and superintendent. This recommendation will complete the reciprocal relationship illustrated in Figure 5.

For Title I schools. The Title I, Part A of the No Child Left Behind Act (2001) was created so that all children can receive a quality education. Title I schools are presented with the charge of closing the achievement gap between high and low performing children. According to Tajalli and Opheim (2005), socioeconomic status is a critical predictor of success and economically disadvantaged students do not perform as well academically compared to their counterparts. NCLB and the Title I federal grant are designed to even the playing field for those students.

It is recommended that Title I schools initiate building a data driven culture utilizing the efforts that the Lakeside School District demonstrated since 2010 along with the recommendations submitted as a result of this study. Implementing the data team concept within the spirit of the conceptual framework of educational change,

148

collaborative leadership, and professional learning communities will initiate the data culture needed to provide the quality education for both high and low performing students. The critical components necessary to accomplish this include the implementation of a data team trained in the process of collaborative analysis and the reciprocal relationship with commitment from central office leadership and school leadership. Both components are documented in this dissertation so that school districts can use this document as a guide to implementing a data driven culture to stimulate positive change in their school district.

For my leadership. The personal challenge from 2010 was that my new position as the central office administrator charged with building a data culture preceded the development of DDDM knowledge and skills for many of the participants. As Guskey (2002) stated, "High-quality professional development is a central component in every modern proposal for improving education" (p. 381). Previously I described my proposal to the former superintendent, outlining the implementation of the data team concept with the mission of conducting collaborative analysis. My original proposal did not include formal professional development for the school building teachers and administrators. My initial vision and collaborative leadership used to recruit, train, and direct the district data team did exhibit qualities of transformational leadership, however, the deficient lack of reciprocal leadership and knowledge exposed by this study must be addressed. As an ethical and moral leader, I will complete the initial vision proposed in 2010 by following through with the recommendations outlined for the district that resulted from the data collected in this study.

Then and now. The data team was initiated in 2010 to promote positive educational change in the school district using the professional learning community concept at the same time that I started the doctoral program that prompted this study. My knowledge related to the conceptual framework of change, leadership, and professional learning communities has developed through the program and culminates with this research experience.

In my leadership platform I described three theories framing my leadership as a transformational, democratic, servant leader with the ability to employ situational leadership in appropriate situations (Burns, 1995; Goleman et al., 2002). My research of leading professional learning communities developed knowledge that teachers and administrators can perform data analysis better collaboratively (Coburn, 2001; Coburn et al., 2009). This study expanded my knowledge and skills to refine the data team concept initiated.

The study found that the concept would strengthen with a reciprocal leadership relationship. As stated previously, the central office and schools matter equally when attempting to initiate positive school change. The deficiency highlighted incomplete personal leadership on my part by not including quality training for all of the school leaders and teachers in the Title I schools. The lesson learned is that the leaders and teachers in the schools need the knowledge and skills supported in policy to understand the true value of DDDM. It is well documented that collaborative data analysis is beneficial to improve schools (Boudett et al., 2005; Coburn & Turner, 2011; Honig, 2003; Huffman & Kalnin, 2002; Levin & Datnow, 2012; Love, 2009). The missing components of the initiative include not providing the central office leadership to develop

150

the school leadership needed to create the reciprocal commitment. Implementing the aforementioned recommendations for the district supported in policy will arm the school leaders so that they can overcome the barriers documented in the findings.

For future research. This case study and its Title I schools used as embedded units provided a unique case of a high school district in New Jersey. The data team model provided a unique example used as a central office driven model with school stakeholders from each building. Future research related to this study would facilitate the process of building a data culture used for educational change.

A longitudinal study that includes the use of quantitative and qualitative data over time would possibly investigate the relationships of a school district that would provide useful findings. The relationships between the central office, schools, parents, and students are important in the effort to use data effectively. This study did not include the students and parents in the data collection. A longitudinal study collecting quantitative and qualitative data from all stakeholders would be useful for educators attempting to create a data culture. In addition, a comparative study with the same aforementioned characteristics comparing like school districts where one district is utilizing a data team or similar technique to build a data culture and one study that does not. This type of study could measure the effectiveness of the data analysis models used in school districts and the effectiveness to improve education in Title I schools for academically low performing students.

Next steps. It is important at this point in the chapter to outline a plan to implement the recommendations above for the school district. The data collected and analyzed for this study exposed certain issues with the district data team model created by

151

the central office. The recommendations provide solutions to the issues and problems, but this section will outline a plan of action. According to Craig (2009), action plans serve as a strategy to attack the problem. The recommendations above serve as goals established as a result of information collected from the single embedded case study and the paragraphs below will describe the action needed to take the next step toward educational change.

The next step is to create a proposal that will allow the school district to accomplish the recommendations. The proposal will be submitted to the superintendent for implementation. First, the proposal will contain a recommended policy that outlines the expectation for teachers and leaders to use data in the school district. The policy will be modeled after a template policy that outlines standards based instructional priorities. The policy that will require Board of Education approval will provide a detailed expectation to use data by all educational stakeholders.

Second, after the policy is approved by the Board of Education with the superintendent's support, a regulation will be recommended highlighting more specific information regarding how to use data as it is outlined in the proposed policy. The regulation will describe the professional development needed for the method of data analysis that will be linked to the existing Research for Better Teaching model, the expectation of the data team, and the expectation of the individual schools' teachers and administrators to complete the reciprocal relationship described in the discussion and recommendations of this study. The expectation will include specific accountability in the form of action plans developed as a result of building level data analysis.

Third, the proposal will include a recommendation to open the school district's strategic plan for review with the intention of including new beliefs on the topic of DDDM with input from all district stakeholders. The beliefs associated with the strategic plan are currently posted in all classrooms and offices as a constant reminder of the district's mission. Including beliefs associated with DDDM will provide a strong statement for all stakeholders. By proposing policy, regulation, and changes to the strategic plan the commitment of the district will refocus toward the use of data to make decisions, as this was deficient in the data analyzed for this study.

Next, the major barrier of the lack of time for teachers and administrators must be dealt with so that the teachers and administrators can conduct the work necessary to create a data culture. It is necessary that the school district implement an alternate schedule that will create extra time for teachers and administrators to collaborate with data. High school schedules utilizing a common lunch have been utilized to alleviate a number of scheduling issues common in high schools including the all too common lack of time. The implementation of this type of schedule will require the work and collaboration from the central office superintendent, directors, and business administrator to accomplish. All stakeholders including students, teachers, principals, and central office staff will develop a proposal for the Board of Education and an action plan for implementation.

The recommendations of the study can be accomplished with the aforementioned steps that include the creation of policy, regulation, strategic plan modifications, and a new schedule to create the much-needed time. The action steps will include professional development for stakeholders on the appropriate process of data analysis. This approach

153

will provide systemic change that will alleviate the issues exposed, such as a fear of data, stemming from the lack of DDDM knowledge. In addition, the expectations in policy and specific steps in regulation will provide accountability for all stakeholders so that the schools can succeed in building a data culture and complete the reciprocal relationship for a more effective data team model.

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155

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162

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Focus Group Interview Protocol

Participant	Title	School

Role of the Facilitator is to:

1. Ask questions
2. Probe for further information
3. Keep the discussion on track
4. Maintain good and respectful relationships among participants
5. Encourage some to participate and limit those who dominate

Role of the Recorder: Our sessions will be audio taped and later transcribed. However, the recorder should take accurate notes about the general topic of discussion paying close attention to the dynamics of interaction, the participations' reactions, and other visual details unable to be captured by the tape.

Routine:

1. Everyone introduces themselves
2. Facilitator should explain the purpose of the study (e.g., Thank you for agreeing to participate in the focus group discussion on how teachers think about and use data).
3. Housekeeping: Review the consent form (confidentiality and need to record)
4. Ground Rules:
   - Everyone participates
   - All ideas are equally valid—no right or wrong answers
   - Respect each others' views
   - Ask each participant to begin their first comments by stating their first name and their department affiliation.

166

The Questions:

Perception of Data Driven Decision Making:

RQ #1: How do the regional high school district teachers and administrators of Title I schools perceive the use of data to make informed decisions from a district and building perspective?

- What are your beliefs about the importance of using data for decision making?
- Why do you think educators use data?
- Have you noticed a shift in beliefs about the use of data?

RQ #2: How do school administrators and teachers perceive the district data team in relation to their building based data use efforts?

- How important is the district data team to the work that you do in your schools?
- Specifically, what does the district data team do that is helpful to teachers and administrators?
- What can the district data team do different to make data driven decision making more prevalent in your building?

Using Data to Make Decisions:

RQ #3: How do the regional high school district teachers and administrators of Title I schools use data to make educational decisions?

- How and why do you use data?
- What kinds of data do you have access to and collect? What challenges have you run into trying to use data for decision making? How have you dealt with these challenges?
- Overall, do you think your school has a culture of data-driven decision making? How would visitors know that this was a data-driven school? What would they see and hear?

Change Impact Made by Central Office and Building Leadership:

RQ #4: How did the central office and building administrative leadership impact a change in the organization and schools?

- How does the data team impact the school's use of data?
- How did my leadership impact perceptions regarding data driven decision making?
- How does the building leadership impact the teacher's use of data?
- What kind of help has the central office given you regarding data use for you?
- What do you think the central office can do to help you build a data culture?
- What do you think the district data team can do to create a data culture in the schools

167

Appendix B

Administration Interview Protocol

Participants Name: _____ Date: _____

Position: _____ School: _____

[Introduction: Begin with a few minutes of explaining the study, who you are, and the purpose of the study. Explain that while the interview will be taped, their responses are strictly confidential. Let them know if there is something they would like to say off tape, they can inform you and the recorder will be shut off for their comment. Also, let them know the approximate length of the interview and ask if they have any specific questions before beginning.]

Perception of Data Driven Decision Making:

RQ #1: How do the regional high school district teachers and administrators of Title I

schools perceive the use of data to make informed decisions from a district and building

perspective?

- What are your beliefs about the importance of using data for decision making?
- Why do you think teachers use data?
- Have you noticed a shift in beliefs about the use of data?
- To what extent have beliefs about students changed/shifted as a result of focusing on data?

RQ #2: How do school administrators and teachers perceive the district data team in

relation to their building based data use efforts?

- How important is the district data team to the work that you do in the school/classroom?
- Specifically, what does the district data team do that is helpful to teachers and administrators?
- What can the district data team do different to make data driven decision making more prevalent in your building?
- Do you go to the data team members in your building for anything related to their work with the team? How often?

168

Using Data to Make Decisions:

RQ #3: How do the regional high school district teachers and administrators of Title I

schools use data to make educational decisions?

- How do the principals of the schools use data with their administrators and teachers?
- How and why do you use data?
- Do you have the authority to make changes in the education program as you see fit, if they are based on data? If not, who makes these decisions?
- Do you have teachers that struggle with data use? Why? How would you describe a teacher who struggles with data use?
- How do you use data in your role as a leader? Can you share an example with me? When looking at data how do you determine your purpose? Is this your choice or is it district mandated?
- What kinds of data do administrators have access to and collect?
- What challenges have you run into trying to use data for decision making? How have you dealt with these challenges?
- Overall, do you think your school has a culture of data-driven decision making? How would visitors know that this was a data-driven school? What would they see and hear?
- Can you provide an example of when your school used student performance data to make decisions about instructional programs? Professional development? School organization and staffing? School budget?

Change Impact Made by Central Office and Building Leadership:

RQ #4: How did the central office and building administrative leadership impact a

change in the organization and schools?

- How does the central office data team impact the school's use of data?
- How did my leadership impact perceptions regarding data driven decision making?
- How does the building leadership impact the teacher's use of data?
- Are you well positioned to make effective use of data?
- What kind of help has the central office given you regarding data use for you?
- What do you think the central office can do to help you build a data culture?

[Concluding Remarks/Questions: Is there anything else we should know? Thank them for their cooperation and time. Inform them we will share our report with them once it is done and that we might need to contact them for follow-ups]

Appendix C

Teacher Interview Protocol

Participants Name: _____ Date: _____

Position: _____ School: _____

[Introduction: Begin with a few minutes of explaining the study, who you are, and the purpose of the study. Explain that while the interview will be taped, their responses are strictly confidential. Let them know if there is something they would like to say off tape, they can inform you and the recorder will be shut off for their comment. Also, let them know the approximate length of the interview and ask if they have any specific questions before beginning.]

Perception of Data Driven Decision Making:

RQ #1: How do the regional high school district teachers and administrators of Title I

schools perceive the use of data to make informed decisions from a district and building

perspective?

- What are your beliefs about the importance of using data for decision making?
- Why do you think teachers use data?
- Have you noticed a shift in beliefs about the use of data?
- To what extent have beliefs about students changed/shifted as a result of focusing on data?

RQ #2: How do school administrators and teachers perceive the district data team in

relation to their building based data use efforts?

- How important is the district data team to the work that you do in the school/classroom?
- Specifically, what does the district data team do that is helpful to teachers and administrators?
- What can the district data team do different to make data driven decision making more prevalent in your building?
- Do you go to the data team members in your building for anything related to their work with the team? How often?

Using Data to Make Decisions:

RQ #3: How do the regional high school district teachers and administrators of Title I

schools use data to make educational decisions?

- How do the principals of the schools use data with their administrators and teachers?
- How and why do you use data?
- Do you have the authority to make changes in the education program as you see fit, if they are based on data? If not, who makes these decisions (lead, principal, system)?
- Can you think of an instance when you used student performance data to change your instruction? How frequently does this happen? Example?
- Do you share student achievement data between teachers/classrooms? Between schools? In what formats? If so, do you find this helpful?

Change Impact Made by Central Office and Building Leadership:

RQ #4: How did the central office and building administrative leadership impact a

change in the organization and schools?

- How does the central office data team impact the school's use of data?
- How did my leadership impact perceptions regarding data driven decision making?
- How does the building leadership impact the teacher's use of data?
- Are you well positioned to make effective use of data?
- What kind of help has the central office given you regarding data use for you?
- What do you think the central office can do to help you build a data culture?

[Concluding Remarks/Questions: Is there anything else we should know? Thank them for their cooperation and time. Inform them we will share our report with them once it is done and that we might need to contact them for follow-ups]

Appendix D

Strategic Plan

LAKESIDE HIGH SCHOOL DISTRICT
LONG RANGE PLANNING SUMMARY *Board Approved: FEBRUARY 2008*

MISSION STATEMENT

The mission of the Lakeside High School District, a leader in progressive education, is to develop physically and emotionally healthy students who excel in an ever-changing world, accomplished through:
- Unlimited educational experiences
- A curriculum which exceeds the New Jersey Core Curriculum Content Standards
- Integration of technology
- Expectations of higher achievement for all students and staff

BELIEFS

WE BELIEVE that all people have value and should be treated with respect.

WE BELIEVE that a nurturing, safe and caring environment is vital to an individual's optimal growth and well-being.

WE BELIEVE that motivation, strategies and effort are essential components to maximizing achievement.

WE BELIEVE that access to opportunities is essential for promoting personal growth.

WE BELIEVE that all people have a natural desire to learn.

WE BELIEVE that diverse experiences enrich lives.

WE BELIEVE that prolonged care and preservation of the environment is necessary for the well-being of current and future generations.

WE BELIEVE that integrity, honesty and respect are vital to all healthy relationships.

WE BELIEVE that every person is responsible for his/her own actions.

WE BELIEVE that appreciation of diversity enriches a community.

WE BELIEVE that all people have inherent qualities that can be used to make positive contributions to society.

OBJECTIVES

- 100% of our students will be motivated and confident to take academic risks.
- 100% of our students will have positive connections with at least one staff member throughout their high school careers.
- 100% of all students will be involved in voluntary community service throughout their lives.
- 100% of all students will perform above the state average on standardized tests.
- 100% of students will maintain emotional, physical and mental well-being throughout their lifetimes.
- 100% of students will utilize interpersonal skills necessary to excel in a global environment.
- 100% of students will have the skills necessary to analyze, interpret, and adapt to change.
- 100% of students will pursue personal and intellectual growth throughout their lifetimes.
- 100% of students will understand and appreciate individual differences.

STRATEGIES

- We will facilitate open and effective communication throughout the district and its eight sending communities.
- The physical, emotional, and mental well-being of staff and students will be an integral part of the educational process.
- We will instill in all students civic responsibility and the desire to serve their communities throughout their lives.
- We will establish and sustain connections among the students, staff and community.
- Technology will be seamlessly integrated throughout the educational experience.
- We will instill in our students and staff an appreciation of diversity.
- We will provide an educational program that challenges every student to take the risk necessary to achieve his/her maximum potential.

Appendix E

Disciplinary Data

LAKESIDE DISCIPLINARY INCIDENTS												
	9th Grade		10th Grade		11th Grade		12th Grade		TOTAL		Enrollment from October Fall Reports	% of Enrollment Disciplined
2009-10	Incidents	Students	Incidents	Students	Incidents	Students	Incidents	Students	Incidents	Students		
Male	177	56	270	78	247	73	207	71	901	278	1111	25%
Female	93	33	117	51	118	55	167	64	495	203	958	21%
Students w/Disabilities	121	21	108	23	79	23	56	21	495	88	250	35%
Economically Disadvantage	87	82	82	38	69	18	66	17	364	155	197	79%
Transfer	270	216	11	8	7	3	0	0	304	227	409	56%
Minor Offenses	73	31	111	37	172	63	215	77	288	208	1750	12%
Major Offenses	197	59	297	92	192	65	159	58	571	274	1750	16%
2008-09	Incidents	Students	Incidents	Students	Incidents	Students	Incidents	Students	Incidents	Students		
Male	457	101	341	103	313	93	284	97	1395	394	989	40%
Female	226	76	248	71	136	52	135	70	745	269	926	29%
Students w/Disabilities	140	27	156	33	101	25	55	22	452	107	255	42%
Economically Disadvantage	178	32	143	22	52	11	30	13	403	78	143	54%
Transfer	535	159	36	9	21	6	10	3	602	177	593	30%
Minor Offenses	253	123	171	96	194	105	160	107	778	554	2109	37%
Major Offenses	430	123	418	125	255	89	259	112	1362	449	2109	63%
2007-08												
Male	504	115	492	120	292	91	422	97	1710	423	980	43%
Female	328	89	167	56	199	80	194	74	888	299	914	33%
Students w/Disabilities	294	46	190	37	113	26	157	38	754	147	269	54%
Economically Disadvantage	185	26	87	17	65	17	39	14	376	74	104	71%
Transfer	113	19	109	18	36	9	11	2	269	48	68	70%
Minor Offenses	295	139	219	118	279	133	289	130	1082	520	2598	42%
Major Offenses	537	137	440	124	211	85	328	116	1516	462	2598	58%
2006-07												
Male	403	88	364	98	350	73	181	64	1298	233	945	25%
Female	186	65	247	79	83	30	76	42	592	216	935	23%
Students w/Disabilities	156	27	129	25	135	26	9	4	429	82	204	40%
Economically Disadvantage	118	16	83	18	35	10	18	7	254	51	101	51%
Transfer	138	20	22	5	11	4	11	1	182	30	98	30%
Minor Offenses	153	88	169	96	70	38	14	12	406	234	1882	21%
Major Offenses	436	119	442	137	363	98	243	101	1484	455	1882	79%
*Minor Offense= AUP, Dress Code, Electronic Device, Lates												
*Major Offense= Remainder of Offenses in Code												

173

CHESAPEAKE DISCIPLINARY INCIDENTS											
	9th Grade		10th Grade		11th Grade		12th Grade		TOTAL		Enrollment from October Fall Reports	% of Enrollment Disciplined
2009-10	Incidents	Students	Incidents	Students	Incidents	Students	Incidents	Students	Incidents	Students		
Male	318	89	316	106	284	103	386	136	1304	434	1209	36%
Female	218	86	222	86	116	63	230	102	786	337	1211	28%
Students w/Disabilities	152	45	134	33	118	37	169	44	573	159	394	40%
Economically Disadvantage	76	22	67	24	69	19	77	24	289	89	135	66%
Transfer	512	168	51	13	29	8	22	4	614	193	615	31%
Minor Offenses	471	462	246	94	205	91	435	132	1357	779	2091	37%
Major Offenses	119	52	292	98	195	75	181	106	787	331	2091	16%
2008-09	Incidents	Students	Incidents	Students	Incidents	Students	Incidents	Students	Incidents	Students		
Male	416	106	481	125	338	108	396	115	1631	454	1227	37%
Female	257	95	174	77	180	87	239	100	850	359	1228	29%
Students w/Disabilities	169	36	213	49	188	35	173	37	743	157	377	42%
Economically Disadvantage	57	14	85	14	46	11	50	17	238	56	108	52%
Transfer	637	192	107	18	52	9	5	1	801	220	681	32%
Minor Offenses	276	148	303	156	273	155	336	174	1188	633	2481	48%
Major Offenses	396	120	352	112	245	90	300	118	1293	440	2481	52%
2007-08												
Male	589	135	378	140	373	125	456	149	1796	549	1248	44%
Female	196	77	239	100	280	105	307	115	1022	397	1256	31%
Students w/Disabilities	309	64	166	45	174	45	161	39	810	193	369	52%
Economically Disadvantage	176	19	21	8	37	13	76	14	310	54	91	59%
Transfer	74	13	44	11	32	11	20	4	170	39	95	41%
Minor Offenses	292	154	320	168	386	179	429	218	1427	719	2819	51%
Major Offenses	493	128	297	132	267	119	334	148	1391	527	2819	49%
2006-07												
Male	433	120	431	131	409	121	576	163	1849	535	1252	42%
Female	204	80	255	93	293	100	273	114	1025	387	1317	29%
Students w/Disabilities	211	43	183	44	192	40	27	5	613	132	269	49%
Economically Disadvantage	32	13	43	10	38	7	32	12	145	42	103	40.0%
Transfer	52	12	48	14	16	7	16	2	132	35	148	23%
Minor Offenses	226	122	261	136	344	181	424	213	1255	652	2874	44%
Major Offenses	411	140	425	162	358	131	425	162	1619	595	2874	56%
*Minor Offense= AUP, Dress Code, Electronic Device, Lates												
*Major Offense= Remainder of Offenses in Code												

SEA VIEW DISCIPLINARY INCIDENTS												
	9th Grade		10th Grade		11th Grade		12th Grade		TOTAL		Enrollment from October Fall Reports	% of Enrollment Disciplined
2009-10	Incidents	Students	Incidents	Students	Incidents	Students	Incidents	Students	*Incidents*	*Students*		
Male	177	56	271	68	247	73	207	71	*902*	*268*	623	*43%*
Female	93	33	117	37	118	55	167	64	*495*	*189*	697	*27%*
Students w/Disabilities	120	21	108	23	79	2	56	21	*363*	*67*	186	*36%*
Economically Disadvantage	87	16	82	16	69	18	66	17	*304*	*67*	78	*86%*
Transfer	216	81	8	5	7	3	0	0	*231*	*89*	232	*38%*
Minor Offenses	73	31	111	34	172	63	215	77	*571*	*205*	1398	*15%*
Major Offenses	193	58	277	71	193	65	159	58	*822*	*252*	1398	*18%*
2008-09	Incidents	Students	Incidents	Students	Incidents	Students	Incidents	Students	*Incidents*	*Students*		
Male	224	60	193	57	211	55	270	85	*898*	*257*	642	*40%*
Female	116	40	110	48	169	57	114	56	*509*	*201*	730	*27%*
Students w/Disabilities	115	22	121	29	88	21	78	24	*402*	*96*	191	*50%*
Economically Disadvantage	43	10	33	9	26	8	29	7	*131*	*34*	60	*56%*
Transfer	303	92	12	3	5	3	6	1	*326*	*99*	361	*27%*
Minor Offenses	71	45	122	61	177	89	182	104	*552*	*299*	1407	*39%*
Major Offenses	269	78	181	64	203	61	202	80	*855*	*283*	1407	*61%*
2007-08												
Male	251	82	225	60	159	79	275	91	*910*	*312*	652	*48%*
Female	152	65	134	70	87	47	123	63	*496*	*245*	730	*33%*
Students w/Disabilities	143	39	88	22	39	22	52	22	*322*	*105*	179	*58%*
Economically Disadvantage	50	14	21	6	9	4	22	9	*102*	*33*	59	*56%*
Transfer	44	12	17	7	3	2	0	0	*64*	*21*	47	*44%*
Minor Offenses	193	109	189	107	142	99	273	134	*797*	*449*	1404	*56%*
Major Offenses	210	80	170	57	104	57	125	64	*609*	*258*	1404	*44%*
2006-07												
Male	214	68	280	94	179	71	297	101	*970*	*334*	663	*50%*
Female	141	62	135	67	89	40	161	72	*526*	*313*	700	*44%*
Students w/Disabilities	70	20	111	33	69	19	13	1	*263*	*73*	123	*59%*
Economically Disadvantage	53	12	19	8	18	5	9	4	*99*	*29*	58	*50%*
Transfer	27	4	16	9	1	1	1	1	*38*	*15*	51	*29%*
Minor Offenses	149	88	217	118	121	75	299	151	*786*	*432*	1496	*52%*
Major Offenses	206	83	198	87	147	59	159	74	*710*	*303*	1496	*48%*
*Minor Offense= AUP, Dress Code, Electronic Device, Lates												
*Major Offense= Remainder of Offenses in Code												

Appendix F

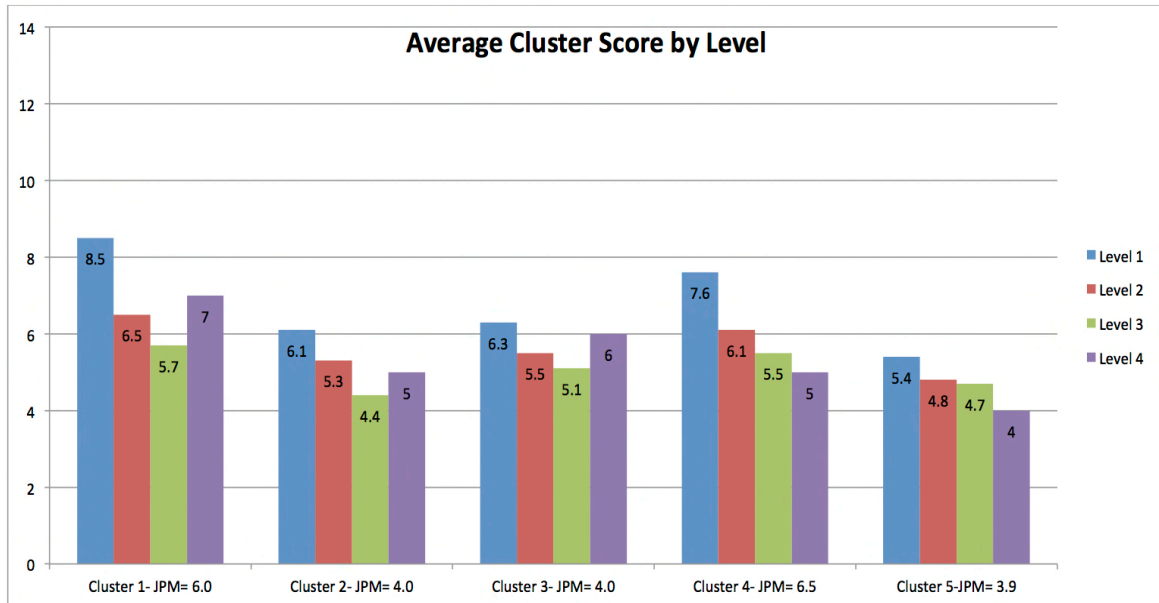## Biology Data

2011-2012 District Biology Data by Level
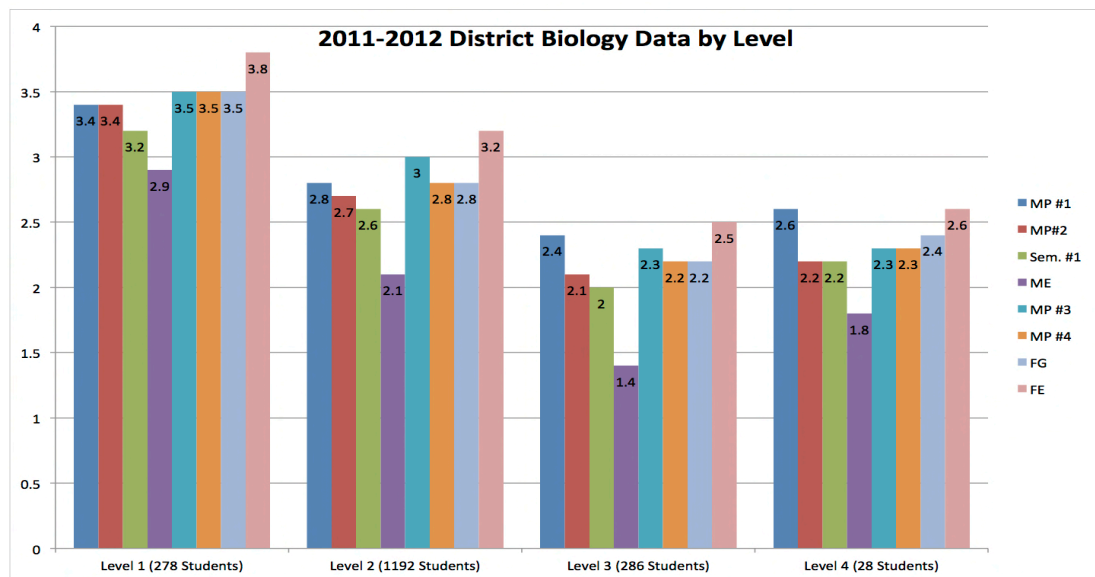
Grade Distribution and Average EOC Comparison

EOC Score Key: <200= Below Proficient

200-249= Proficient

250-300= Advanced Proficient

Level 1	Grade	Average EOC Score	Level 2	Grade	Average EOC Score	Level 3	Grade	Average EOC Score	Level 4	Grade	Average EOC Score
A's	54%	262	A's	22%	234	A's	10%	200	A's	11%	183
B's	44%	246	B's	44%	221	B's	26%	188	B's	29%	171
C's	5%	243	C's	24%	208	C's	41%	183	C's	50%	172
D's	<1%	257	D's	8%	204	D's	16%	183	D's	11%	162
F's	0%	0	F's	1%	191	F's	7%	180	F's	0%	0

176

Average Cluster Score by Level

	Cluster 1- JPM= 6.0	Cluster 2- JPM= 4.0	Cluster 3- JPM= 4.0	Cluster 4- JPM= 6.5	Cluster 5-JPM= 3.9
Level 1	8.5	6.1	6.3	7.6	5.4
Level 2	6.5	5.3	5.5	6.1	4.8
Level 3	5.7	4.4	5.1	5.5	4.7
Level 4	7	5	6	5	4

JPM= Just Proficient Mean or the State Raw Score Mean

Max Points per Cluster :   1= 11   2= 7   3= 9   4= 11   5= 7

Cluster 1= Organization and Development Raw Cluster

Cluster 2= Matter and Energy Transfer Raw Cluster

Cluster 3= Interdependence Raw Cluster

Cluster 4= Heredity and Reproduction Raw Cluster

Cluster 5= Evolution and Diversity Raw Cluster