A Descriptive Study of Data-Driven Decision-Making Practices of a School District in an Era of Accountability

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A DESCRIPTIVE STUDY OF DATA-DRIVEN DECISION-MAKING PRACTICES
OF A SCHOOL DISTRICT IN AN ERA OF ACCOUNTABILITY

BY

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ABSTRACT

A DESCRIPTIVE STUDY OF DATA-DRIVEN DECISION-MAKING PRACTICES
OF A SCHOOL DISTRICT IN AN ERA OF ACCOUNTABILITY

The No Child Left Behind Act of 2001 is the most recent step in a growing national movement in the educational landscape designed to hold schools and school districts accountable for student achievement. As a result of new legislation, student performance on state assessments results in rewards or sanctions for schools. Compliance with the new requirements dictates the continuous and reflective use of data. The use of data can make a significant difference in school reform efforts by helping schools determine how to improve school processes and student learning. Success in utilizing data depends on the leadership practices that support and encourage the use of data by teachers, and the processes present at each school designed to provide the resources, knowledge, and support necessary to use data effectively. Meaningful use of data can have powerful impact on school improvement and reform efforts, as well as student performance.

Increased accountability and public reporting necessitate that schools and educators become thoroughly adept with the use of data and learn to utilize available data to its full extent in order to reap its full benefits. Educators must engage in the often frustrating process of making decisions with regard to what data should be utilized, how it should be utilized, how to establish the necessary conditions for the effective use of data, and how to effectively train school staff in the appropriate use of data. The purpose of this study is to examine the processes and leadership strategies followed by a school district in utilizing existing student data to inform decision-making regarding student
performance and growth. The study is guided by two research questions: To what extent do school policies and procedures encourage and support teacher use of data to inform instruction and improve student learning, and how do leadership practices support the use of data for improvement of student performance?

Insight into leadership practices that encourage and optimize the use of data by teachers and administrators to guide instruction and decision-making gained by the study will aid school leaders in adopting policies and allocating resources in ways that lead to successful educational reform.
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# TABLE OF CONTENTS

I. Introduction .................................................................................................................. 1  
  Purpose of the Study ................................................................................................. 6  
  Statement of the Problem ...................................................................................... 9  
  Research Questions .............................................................................................. 10  
  Conceptual Framework ......................................................................................... 11  
  Delimitations and Limitations of the Study ......................................................... 14  
  Definition of Terms .............................................................................................. 15  
  Significance of the Study ..................................................................................... 16  

II. Review of the Literature ........................................................................................... 19  
  Historical Overview of School Reform and Accountability .................................. 19  
  Accountability and the Need for Data .................................................................. 21  
  Use of Data in Schools and Its Role in School Improvement ............................... 24  
  Use of Data and Leadership Practices .................................................................. 30  
  Teachers and the Use of Data in Shared Decision-Making ................................. 33  
  Opposing Views and Criticisms ........................................................................... 35  
  Conclusion ............................................................................................................ 39  

III. Methodology ............................................................................................................. 41  
  Case Study Design .................................................................................................. 42  
  Study Case ............................................................................................................. 43  
  Sample ..................................................................................................................... 45  
  Research Instruments ............................................................................................. 45  
  Validity and Reliability ........................................................................................... 46  
  Data Collection Process ....................................................................................... 47  
  Surveys .................................................................................................................... 47  
  Interviews ............................................................................................................... 47  
  Data Analysis ......................................................................................................... 48  

IV. Data Analysis ........................................................................................................... 58  
  Discussion ................................................................................................................ 58  
  Research Question One .......................................................................................... 66  
    Subsidiary Question One ..................................................................................... 66  
    Survey question 1 ............................................................................................... 66  
    Interview question 8 .......................................................................................... 70  
  Subsidiary Question Two ....................................................................................... 76  
    Survey question 2 ............................................................................................... 76  
    Survey question 3 ............................................................................................... 78  
  Subsidiary Question Three .................................................................................... 80  
    Interview question 7 .......................................................................................... 80  
  Subsidiary Question Four ....................................................................................... 82  
    Survey question 4 ............................................................................................... 83  

vi
LIST OF TABLES

1. Research Question 1 ................................................................. 52
2. Research Question 2 ................................................................. 55
3. Summary of Student Performance in English Language Arts and Mathematics .......... 60
4. Percent of Teachers Using Each Data Type ........................................ 67
5. Type of Data Accessible to Teachers .............................................. 77
LIST OF FIGURES

1. Percent of Teachers Using Each Data Type...........................................69
2. Type of Data Accessible to Teachers....................................................79
Chapter I

Introduction

In January 2002, President George W. Bush signed the No Child Left Behind Act, a framework for educational reform that was aimed at closing the achievement gap by means of accountability, flexibility, and choice. No Child Left Behind requires that by the end of the 2014 school year, all public school students would meet or exceed the state proficient levels of academic achievement in basic skill subjects. The law also requires that states define adequate yearly progress (AYP) for school districts and schools according to Title I parameters. Additionally, each state is required to delineate an action plan including a timetable for guidelines to follow and the consequences Title I schools would incur should they fail to improve.

The No Child Left Behind Act of 2001 is the most recent step in a growing national movement in the educational landscape intended to hold schools and school districts accountable for student achievement. The No Child Left Behind Act is adding to that pressure at both state and local levels. Schools and school administrators face accountability systems based on high-stakes testing developed by their respective states. Student performance on these state assessments results in rewards or sanctions for schools (Keeney, 1998). Compliance with the new requirements dictates the continuous and reflective use of data.

At the forefront of meeting accountability demands is improvement of instruction. Improvement begins at the classroom level, with teachers routinely working to improve their decision-making skills by acquiring specific knowledge gleaned from available data (Bedwell, 2004). "If teachers make quality instructional decisions on a daily basis, then
instruction will improve. Such high-quality decision making depends on the use of high-quality information or viable data. In other words, high-quality is data-driven,“ Bedwell points out (p. 9). Johnson further reinforces this argument by emphasizing that knowledge of student population characteristics provides educators with information that is used to inform curricular decisions (Johnson, 2006).

Schools that seek continuous improvement employ effective accountability tools that allow them to examine their practices and utilize collected meaningful information to bring about the desired improvement in student performance (Keeney, 1998). Traditionally, data has been collected and utilized simply to assess student performance. The growing demand for school accountability and public reporting is changing the role of data. Educators currently have more extensive and varied data at their disposal than ever before. Demographic data, achievement data, instructional processes, and perception data are all useful tools that can be employed in making decisions and choices to better serve students. “Accountability-minded schools,” advises the Annenberg Institute, need to engage in a “cycle of inquiry” that requires them to establish desired outcomes for student performance, define the questions and set criteria related to the outcomes, collect and organize data as specified by the questions and criteria, take actions based on the data collected, and assess and evaluate the actions taken (Keeney, 1998).

The use of data is essential in school and district accountability systems. Its key value is to supply schools and educators with information they need in order to provide specialized instruction and support systems that encompass a variety of student needs (Assessing Student Achievement Project, 2005). Its use is a critical component in
reform efforts and can make a vast difference in providing schools with the tools needed to improve school processes and student learning (Bernhardt, 2004). Bernhardt points out that data can aid schools in their efforts to:

1. Replace hunches and hypotheses with facts concerning what changes are needed
2. Facilitate a clear understanding of the gaps between where the school is and where the school wants to be
3. Identify the root causes of these gaps, so the school can solve the problem and not just treat the symptom
4. Understand the impact of processes on the student population
5. Assess needs to target services on important issues
6. Provide information to eliminate ineffective practices
7. Ensure the effective and efficient use of dollars
8. Show if school goals and objectives are being accomplished
9. Ascertain if the school staffs are implementing their visions
10. Promote understanding of the impact of efforts, processes, and progress
11. Generate answers of the community related to: What are we getting for our children by investing in the school's methods, programs, and processes?
12. Continuously improve all aspects of the learning organization
13. Predict and prevent failures
14. Predict and ensure successes (p. 3).

Data is much more than a mere accountability tool. It can also serve as a diagnostic tool that enables teachers to modify their instruction to meet student needs and facilitate student growth. This, in turn, ensures the success of schools in meeting internally and externally imposed performance goals (Doyle, 2003). Unfortunately, however, Doyle points out, many educators see data as a burden rather than as an asset.

In order for this viewpoint to change and for educators to begin to truly embrace the use of data in decision-making that affects student performance and growth, the data needs to be clear, understandable, readily available, and truly useful. Data should also be timely and accurate. Standards-based curriculum alignment, a data warehouse with decision-support tools, and community engagement are all equally essential in creating an environment that supports and ultimately optimizes data-driven decision-making to
improve student performance that will meet federal, state, and local accountability demands (Doyle, 2003).

According to the Education Commission of the States (2002), schools need to recognize the useful and desirable nature of data-driven decision-making and make a conscious effort to implement it. Exemplary schools and school districts use data to design strategies that track student performance and implement appropriate interventions and innovations. Furthermore, they use data to create school improvement plans and evaluate the effect of their implementations on raising student achievement (Education Commission of the States, 2002).

With the passage of No Child Left Behind, "the mission of public education has changed overnight; now the mission is high quality for all," stated Executive Director of the Council of Chief State School Officers, Dr. Thomas Hoolihan, during an Association for School Curriculum Development Conference (Deliso, 2005). Mere collection of data is no longer sufficient. Now, data will also have to be used to hold schools, administrators, teachers, and students accountable; it will track progress, design innovations, and evaluate interventions.

As the school reform movement has evolved and a greater emphasis has been placed on accountability, the role of the educational leader has changed as well. The responsibility of the school administrator as the instructional leader in charge of setting curricula and curricular goals and evaluating teachers and lesson plans has been expanded to include that of a “learning leader” (Sparks, 2004). The school administrator must now focus on making student achievement the organization’s highest priority and create a professional learning community whose goals include producing higher levels of student
growth. Improving teaching and learning in order to achieve and sustain high student achievement is at the core of leadership in today’s era of accountability. Consequently, a thorough and sophisticated understanding of standards and assessments, and the effective use of data to make effective decisions and align professional development with student learning needs are essential skills for today’s school leaders (Ansties, 2002).

According to Lashway (2002), “[t]oday’s best-practice districts are weaving learning into the very fabric of the organization.” He describes New York City’s District Two, where “central-office supervisors…model instructional leadership by engaging principals in intensive, focused examination of learning and teaching. They do so with monthly conferences, support groups, peer observation, and periodic ‘walk-throughs’ of each school that lead to evaluation, dialogue, and reflective analysis” (Lashway, 2002). Michael Fullan (2002) argues that “to accomplish lasting reform, we need leaders who can create a fundamental transformation in the learning cultures of schools and of the teaching profession itself.” He calls for “change leaders,” who are “coherence makers” that possess a moral purpose, an understanding of the change process, the ability to build relationships, and the ability to create and share knowledge (p. 18). Richard Elmore (2002) offers another facet of effective leadership qualities when he argues that leadership is all about learning. He points out:

Effective leaders…ask hard questions about why and how things work or don’t work and they lead the kind of inquiry that can result in agreement on the organization’s work and its purpose. Effective leaders model for others what it means to exercise control over the conditions of one’s own learning and to make
that learning powerful in the lives of others. (p. 25)

**Purpose of the Study**

Most school districts and schools collect data regularly, whether it is in the form of daily attendance rates, student course enrollment and grades, or student demographic information. Schools are required to collect and report specific student data as a condition for receiving federal and/or state funds. School administrators often utilize student grades and anecdotal information in assessing the quality of teaching and learning in their schools. A wide array of data is collected in the course of a school year; however, it is not always collected in a systematic way that would contribute to identifying strengths and weakness in a school and aid in the creation of focused plans and improvement strategies (Levesque, Bradby, & Rossi, 1996).

"Effective educators make effective decisions, decisions based on accurate information," argues Johnson (2006). Knowledge of abilities and learning styles of students allows educators to modify the curriculum to meet individual needs and achieve the goals the school has set for itself. "[I]mplementation of a complete program of data collection and use can lead to the improvement of education as has no other educational innovation of the last century" (Johnson, 2006).

School leaders must then recognize that data-driven decision-making is essential and embrace it. They have no choice but to start implementing systematic collection of data and become sophisticated in its use. "With No Child Left Behind, data will have to be used not just collected. It will be used to plot progress, or lack thereof, plan and
execute instructional interventions, report results, as well as hold students, teachers, administrators and school systems accountable" (Deyle, 2003).

Once school leaders recognize and embrace the importance of data-driven decision-making, there are a number of hurdles to overcome. According to Bernhardt (2004), some of the most common barriers to the effective use of data are:

1. Few people in schools and districts are adequately trained to gather and analyze data or establish and maintain databases.
2. Administrators and teachers do not see gathering and analyzing data as part of their job.
3. Gathering data is perceived to be a waste of time (after all we are here every day—we know what the problems are).
4. Schools do not have databases that allow for easy access and analysis of data.
5. Teachers have been trained to be subject-oriented, not data-oriented; process-oriented rather than product-oriented.
6. There is a lack of professional development for teachers to understand why data are important and how data can make a difference in their teaching.
7. Some teachers see data as another thing that takes away from teaching.
8. There is a perception that data are collected for someone else’s purpose.
9. Data have been used in negative ways in the past.
10. There is confusion upon which data to focus.
11. There are not enough good examples of schools gathering, maintaining, and benefiting from the use of data (p. 6).

Schmoker (2003) describes the following encounter: “I recently sat with a district administrator eager to understand her district’s achievement results. Pages of data and statistics breakdowns covered the table. Looking somewhat helpless, she threw up her hands and asked me, ‘What do I do with all this?’” (p. 22). It is precisely the common tendency to complicate the analytical use of student performance data that prevents many educators from reaping the benefits of using data to inform decision-making (Schmoker, 2003).

The solution to the problem of navigating the often labyrinthine world of data necessarily starts with goal setting. Schmoker (2003) references a plethora of research
that indicates that setting goals "may be the most significant act in the entire school improvement process greatly increasing the odds of success" (p. 23).

In describing the steps an elementary school took to become one of the highest scoring schools on NYS math assessment after previous dismal performance, K - 12 Director of Mathematics in Rush-Henrietta Central School District, Jody Hoch states: "With the advent of NCLB legislation, schools are increasingly buried under mountains of assessment data. We often wonder what we can do so this information is useful in guiding classroom instruction" (Hoch, p. 14). In deciding how to use data to improve instruction, the school district began by focusing on what needed to be taught. Data were then analyzed to determine what areas presented the most difficulty for students and how students responded to different types of questions. Hoch points out:

The most powerful and effective change in our practice came about when we decided that student work is 'data' and could assist us in guiding and improving instructional practice… If change were easy, there would likely be little need for principals to be problem solvers. However, experience tells us that there are always challenges to overcome whenever we move to affect significant change. These hurdles afford us the opportunity to look at our schools through a different lens. (p. 14)

The aforementioned demonstrate that as data-driven decision-making becomes a more prominent feature of the educational landscape, there is an increased need for a paradigm for the effective use of data that districts and schools may follow in their efforts to inform their decision-making. This study aims to provide an in-depth look at the processes used by a school district that embraced data-driven decision-making several
years ago and now champions a thorough plan for collecting, analyzing, and disseminating data among all its stakeholders, while providing teachers with data necessary to achieve increased student performance.

Data is an essential element and tool for effective accountability systems. A better understanding of the types of data used, the data processes employed, and the extent to which they are utilized in supporting school improvement will shed light onto effective leadership practices aimed at generating and sustaining increased student performance in the current climate of increased accountability.

Statement of the Problem

The use of data by schools, school leaders, and teachers is an essential factor in making decisions that both impact student performance and aid in creating school growth plans, designed to meet externally and internally set goals and bring about gains in student achievement. Schmoker (2003) points out that data clarifies strengths and weaknesses, failures, and successes of a school. According to the National Education Association (2003), identifying the appropriate data to use, ensuring its availability and ease of use, analyzing it using a fitting conceptual framework, and consequently designing and implementing appropriate initiatives are essential elements of the operation of a school district. As both availability of substantial student data and the accountability demands imposed on schools and school districts increase, school leaders find themselves searching for ways to implement the constructive and consistent use of data to improve instruction and student performance.
District and school administrators engage in the often frustrating process of making decisions with regard to what data should be utilized, how it should be utilized, how to establish the necessary conditions for the effective use of data, and how to effectively train school staff in the appropriate use of data. This study attempts to answer the question: What processes does a school district follow in utilizing existing student data to inform decision-making regarding student performance and growth?

Research Questions

The study will be guided by two main research questions.

Research Question 1

To what extent do school policies and procedures encourage and support teacher use of data to inform instruction and improve student learning?

Subsidiary Questions

1. How is the data used to inform decision-making regarding curriculum and instruction?

2. What difficulties are encountered in using this data?

3. How are these difficulties managed?

4. What strategies are in place that facilitate the use of data to inform decision-making regarding curriculum and instruction?

Research Question 2

How do leadership practices support the use of data for improvement of student performance?
Subsidiary Questions

1. What relationships, if any, exist between leadership practices and using data to inform decision-making?

2. What relationships, if any, exist between leadership practices and shared vision for continuous student achievement?

3. What relationships, if any, exist between leadership practices and shared leadership for reaching mandated standards?

4. What relationships, if any, exist between leadership practices and leadership for change and improvement?

Conceptual Framework

The constructive use of student data is an essential feature of schools that are making significant improvements in student performance and school growth (Reeves, 2004). Johnson (2006) argues that “studying the current abilities, skills, attitudes, and learning styles of students empowers educators to adjust their curriculum to achieve whatever goals the school and district have chosen.”

“The concept of data-driven decision-making has come to schools,” comments Arie van der Ploeg, a senior program associate and data analyst at North Central Regional Educational Laboratory. “Now we’re concentrating on how we put the concept to use. Most educators think, in some sense, about what happens each day and how to utilize that information to improve their teaching. Like other professionals, teachers keep churning the data” (Kinder, 2000).
Incorporating data-driven decision-making into schools or school systems is not a simple task. Implementation of a school-wide improvement project is not an easy undertaking, and the adoption of such a model does not guarantee success, regardless of how much thought, planning, and system-wide effort goes into it (Miller, 2004). Certain school processes must be in place to ensure that teachers utilize available data to improve instruction. According to Berhardt (2004), school processes are vital to school improvement efforts. School processes comprise all of the decisions and actions made by teachers and administrators in order to reach the goals of the institution as well as those decisions and actions that are not carried out and tend to hamper progress. She points out:

School processes might be the most important measure in understanding what needs to be done to improve student learning results in school organizations. If we want different results, we have to change the processes that create the results. When schools understand their school processes, especially in relationship to the results they are getting, they can know exactly what they need to do to get different results. (p. 156)

The effective use of data in informing decision-making requires that school processes encourage, simplify, and support its use. Streifer (2004) recommends the development of a “data map” that includes the following: the types of data necessary to meet both the needs and goals of a district in improving student performance and meeting external requirements, systems that are currently in place to facilitate collection and use of data, and the processes that a district should employ in order to sustain a culture that values data and sees it as a necessary component of systemic improvement. This culture
is one that encourages common goals, recognizes the usefulness of data, and ensures that it is readily available to individuals who are competent in its use.

In addition to recognizing the importance of utilizing data in decision-making regarding curriculum and instruction, it is essential, argues Picciano (2006), that teachers are supported in the use of data by administrators who understand the value of data and the role of teachers in improving student performance. An organization’s leadership is a primary factor in ensuring that teachers are supported and encouraged in their efforts. The evolving educational landscape calls for the kind of leadership that allows for collaboration between teachers and school administrators in a process involving mutual engagement in determining the best strategies to improve student achievement (Duke, Grogan, Tucker, & Heinecke, 2003).

According to Yin (2003), previous research on the same topic provides guidelines for defining a study and units of analysis. Researchers compare their findings with these encountered in previous research dealing with the same topic by employing pattern matching. The technique of pattern matching study, according to Yin, “compares an empirically based pattern with a predicted one (or with several alternative predictions). If the patterns coincide, the results can help a case study to strengthen its internal validity” (p. 116). Review of the related literature regarding the use of data to inform decision-making suggests the presence of the following circumstances in districts that use data effectively:

1. A set of best practices described by the related literature as supporting the use of data to inform decision-making;
2. The use of a data map that includes the types of data necessary to meet the needs and goals of the district, as well as systems in place to facilitate easy and timely access to data;

3. A culture that encourages and supports the use of data, and leadership that ensures that teachers are provided with the necessary resources to enable them to engage in the meaningful use of data to inform instruction;

4. Professional development that supports the meaningful utilization of available data by teachers and school leaders

Delimitations and Limitations of the Study

This study is delimited to one school district and all the schools within that district. All schools within the district follow the same practices regarding the use of data to inform decision-making, a process that was initiated and is supported by central office administration. While a researcher may derive a wealth of information in examining a particular case, he/she should resist making generalizations and looking for patterns (Merrizm, 1992). A delimiting factor in this study is the decision to select one particular district in examining data-driven decision-making practices; it limits the ability to make generalizations that are applicable to other school districts that may not share its particular demographics.

The teacher surveys are limited to certified staff in all five schools in the district. Interviews are limited to principals of all five schools. Central office staff is not included in the study. The study, therefore, is limited by the number of teacher responses to the survey and the number of school administrators who agreed to be interviewed for the
study. The limited number of responses hinders the researcher from making generalizations that apply to all staff throughout the district or even the school, or identifying patterns that point to similarities or differences among schools or subgroups in each school. The researcher must also be cognizant of the possibility that teachers responding to the survey share similar characteristics and represent a particular subgroup, thus providing a set of perceptions and views that are not representative of all district staff.

Limitations of interview data include possibly ambiguous or distorted responses due to a number of factors including predisposition, resentment, anxiety, or lack of knowledge (Patton, 2002). Since the questions are designed to determine individuals’ perceptions of the use of data to improve student performance, the validity of the results is limited by the accuracy and dependability of their responses. This is equally true regarding survey answers, even though one might argue that the anonymity of the survey increases the validity of its results.

**Definition of Terms**

Accountability: responsibility to someone or for some activity

Curriculum: a complex system for facilitating individual student learning while promoting organizational productivity and continuous improvement.

Data-driven decision-making: the use of data analysis to inform when determining courses of action involving policy and procedures. Data analysis is used to inform, not to replace the experience, expertise, intuition, judgment, and acumen of competent educators. Inherent in this definition is the development of reliable and timely
information resources to collect, sort, and analyze the data used in the decision-making process.

Database: collection of data files and records.

Data disaggregation: the use of software tools to disaggregate data files into various characteristics. For example, a software program is used to select student performance data on a standardized test by gender, by class, by ethnicity, or by other definable characteristics.

Data warehousing: computerized database information system that is capable of storing and maintaining data longitudinally.

Decision-making: choosing between or among two or more alternatives. In a modern school organization, decision-making is an integral component of complex management processes such as policymaking, academic planning, and budgeting. These processes evolve over time, require participation by stakeholders, and, most importantly, seek to include information that will help all those involved in the decision-making process.

Leadership: the process of mobilizing, in conflict or in cooperation with others, institutional, political, psychological, and other resources so as to arouse and satisfy the motives of the followers.

Standards: specifications of those things that every student should know and be able to do in specific subjects.

Significance of the Study

As schools face increasing scrutiny and need to embrace systemic reforms and adopt accountability protocols and measures, the need for useful data and effective data
management is of paramount importance. A study that provides in-depth profiles of school leadership practices with regard to data use for decision-making, the type of data used, and the processes employed in decision-making is particularly timely and important. School leaders may use the information provided and insights gained in the study to re-examine their use of data and processes in striving for improvement in student performance and compliance to external requirements.

This study adds to an existing body of reform and accountability research by focusing on specific implementation tools and processes that contribute to systemic innovation and increased student performance. Data and its uses are critical components of effective accountability systems and are of significant interest to school administrators, teachers, and school stakeholders in their efforts to sustain and improve student achievement. The findings presented in the study may serve as a tool to further endorse the importance of data as a tool for effective decision-making and encourage school leaders and educators to devote resources to the collection, analysis, and use of timely and genuinely useful data.

District-level administrators and school boards may gain a better understanding of the need for appropriate and timely staff development. They may also gain insight into allocation of school resources to effectively address the need for staff development and programs that support data-driven school improvement. Policies and initiatives intended to bring forth improvement, especially those that are politically motivated or designed to be overly broad in order to encompass the needs of multiple school districts, tend to overlook the specific needs of organizations. This study may aid policymakers, state legislators, and school board members in their understanding of implementation of
specific initiatives and the way in which those initiatives relate to local needs. The study adds to the database of existing research and thus broadens the scope of options to be used in prescribing or dictating policies and innovations.
Chapter II

Review of the Literature

Historical Overview of School Reform and Accountability

Accountability has long been a basic component of the educational reform movement. In 1983, the National Commission on Excellence in Education published *A Nation at Risk*, a report on the state of American education. Its authors expressed concern at the mediocrity of American students and were alarmed by the fact that, though the demands placed on high school graduates were increasing, the quality of education these students received was diminishing. The report stated that, "[the American public has], in effect, been committing an act of unthinking, unilateral educational disarmament" (The National Commission on Excellence in Education, 1983). It made the following recommendations:

1. Graduation requirements should be strengthened so that all students establish a foundation in five new basics: English, mathematics, science, social studies, and computer science.
2. Schools and colleges should adopt higher and measurable standards for academic performance.
3. The amount of time students spend engaged in learning should be significantly increased.
4. The teaching profession should be strengthened through higher standards for preparation and professional growth (The National Commission on Excellence in Education, 1983).

*A Nation at Risk* resulted in the first significant wave of educational reform, which led to an increased number of regulatory mandates imposed on schools by state governments (The National Commission on Excellence in Education, 1983).

The 1990s saw a second wave of school reform, which followed a different approach. Reforms centered on the premise of a collaborative school environment, with increased
teacher engagement and ownership (Owens, 2001). In 1994, Goals 2000: Educare America Act was signed into law. Among the national education goals declared were:

1. By the year 2000, all students would complete grades 4, 8, and 12 having demonstrated competency in challenging subject matter including English, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography. Every school in America would also ensure that all students would be prepared for responsible citizenship, further learning, and productive employment in the nation's modern economy.

2. By the year 2000, the nation's teaching force would have access to programs for continued improvement of their professional skills and the opportunity to acquire knowledge and skills needed to instruct and prepare all American students for the next century (One Hundred Third Congress of the United States of America, 1983).

Goals 2000 was part of a systemic reform which allowed some decentralization by enabling school leaders and educators at local levels to make independent decisions that would ensure success in reaching mandated guidelines.

In January 2001, President George W. Bush announced the No Child Left Behind Act, a framework for educational reform that was aimed at closing the achievement gap by means of accountability, flexibility, and choice. No Child Left Behind put federal pressure on states to follow a standards-based reform course which included high standards for student achievement and greater accountability for results as measured by student performance on standardized assessments. In establishing accountability for results, the following are some provisions of No Child Left Behind:

1. The creation of assessments in each state that measure what children know and learn in reading and math in grades 3-8. Student progress and achievement are measured according to tests given to every child, every year.

2. Parents, citizens, educators, administrators, and policymakers will be presented with data from those annual assessments. The data will be available in annual report cards on school performance and on statewide progress. This will give parents information about the quality of their children's schools, the qualifications of teachers, and their children's progress in key subjects.

3. Statewide reports will include performance data disaggregated according to race, gender, and other criteria to demonstrate not only how well students are achieving
overall but also the progress made in closing the achievement gap between disadvantaged students and other groups of students.

NCLB additionally requires each state to define adequate yearly progress for school districts and schools within the parameters set by Title I, and delineates an action plan, including a timetable for guidelines and the consequences Title I schools would incur should they fail to improve. Furthermore, by 2006, all teachers in core academic subjects were expected to have achieved highly qualified status as defined by each state's certification requirements (No Child Left Behind, 2002).

Accountability and the Need for Data

State level policy makers and school districts have long been engaged in the process of setting standards for student performance and establishing a system of rewards and incentives to motivate teachers and schools to improve practices and achieve established goals (Nelson & Sassi, 2005). However, the nature of accountability systems has changed considerably since the publication of A Nation at Risk (1983). Lashway (1999) points out that “at one time, principals and teachers could satisfy the demands of accountability simply by working hard and following accepted professional standards. By contrast, the current accountability movement emphasizes results.” In 1998, the Southern Regional Education Board identified five critical components in current accountability systems: rigorous and demanding content standards; assessment of student progress; alignment of staff development with standards and student assessment results; public availability of student assessment results; and targeted use of results to reward, sanction, and improve practices (Lashway, 1999). Accountability for learning includes more than
mere assessments and test scores. Rather, it also encompasses purposeful data collection and analysis, collaboration and feedback, action research, and continuous adjustment in response (Sirotnik, 2004).

The increasing national trend to hold schools and school districts accountable is embodied by the No Child Left Behind Act of 2001; the Act adds immense pressure at both the state and local level by requiring schools to expand their student testing and monitoring of student progress (Picciano, 2006; Streifer, 2004). The accountability movement is forcing schools to look at student achievement thoroughly and measure it against the specific benchmarks set by state and federal regulations (Carr, 2003). At present, states issue annual reports to individual districts indicating whether their schools and students are succeeding in meeting both state and federal standards currently in place.

Due to the increased accountability schools face with regard to student achievement, this assessment data has acquired new importance. The challenge for schools and districts to answer, then, becomes how the use of available data can be encouraged and improved, and what particular types of data are helpful in making decisions that can improve student achievement and school performance (Education Commission of the States, 2005). It is essential, therefore, that teachers and administrators understand the role of data in assessments and accountability, and school improvement (Bernhardt, 2004). Data is vital for a number of reasons, the most significant being its value in helping teachers adjust instruction to meet the specific learning needs of each individual student and guide students towards achieving mastery. Data helps educators answer questions regarding individual student achievement, curriculum, and focus for instruction. Meaningful and sensible use of data ultimately leads to continuous school improvement. It is important,
However, for educators to realize that data from standardized assessments alone, though readily available, is not a sufficient basis for instructional and curricular decisions. In order to make these decisions in a manner that will best aid students, other data must be examined. Ongoing classroom assessments identify student needs and the effectiveness of curriculum and instruction. Disaggregated data determines compliance with federal, state, and local requirements. School-wide assessment data aids in evaluating curriculum, instruction, and programs and is essential for measuring the effectiveness of the school and instructional decisions, implementing change, and monitoring changes (Assessing Student Achievement Project, 2002).

Picciano (2006) points out that a data-driven decision-making process uses data analysis to guide decisions concerning policy and procedures. "The data-driven decision-making approach is basically an extension of the concept of knowledge-based power, an extension that emphasizes the efficient use of information resource," he argues (p. 11). Furthermore, data needs to be readily available, reliable, and disseminated in a timely manner to the entire school community. The need for accurate and useful information is imperative. "Policymakers, teachers, parents and even children need to know what is going on in their schools; educational decision making relies on the quality and accessibility of good information" (Picciano, p. 11). Schmoker (2001) suggests that lack of data leads to inability to determine needs and focus improvement efforts. "We need accountability," he argues. "In construction you can see the guy did or did not dig a ditch. in teaching it's harder. You need that data" (p. 92). Marzano (2003b) further points out that school improvement is a "highly contextualized phenomenon" (p. 158);
specific to schools and their particular needs. He advocates the extensive use of local data that allows for a methodical approach to comprehensive school reform.

Use of Data in Schools and Its Role in School Improvement

The use of data to inform decision-making has become increasingly apparent in the educational landscape since the mid-1990s (Pascopella, 2005). Most schools engage in data collection and use of various types of data, ranging from student attendance and schedules, to grades and disciplinary records, to informal teacher observations of student behavior and performance. These schools then use the collected data as a part of their daily decision-making process. Teachers and guidance counselors use data from assessments to identify and place individual students, while school leaders use available data to evaluate student achievement and the quality of teaching (Levesque et al., 1996).

The Center for Social Organization of Schools at Johns Hopkins University has concluded that the availability of data, coupled with the support structures and the skills necessary for its use and analysis, empowers educators to be more productive and make more effective decisions (Pascopella, 2005). Educators themselves view data use as a necessary component of improving student achievement (Popham, 2003). Data provides concrete substantiation of the quality and worth of teaching and learning, and the results and accomplishments which follow (Johnson, 2006). Assessments are a useful tool and the meaningful student data that is generated from these allows educators to take action to address specific student needs (Popham, 2003).

Educators need to familiarize themselves thoroughly with available data in order to realize its value in addressing student achievement and program effectiveness.
(Johnson, 2006). Hord (2004) argues that an essential aspect of the change process is “the need to address significant areas or issues in a manner that will result in sustainability” (p. 126). Effective use of data enables schools and school leaders to plan and implement reforms in the effort to improve school practices that will result in continuous improvements in student learning and performance (Hord, 2004). Bernhardt (2004) further argues that schools need to embrace the use of data and commit to collecting and analyzing it in meaningful ways in order to be successful learning organizations and continue to improve. She points out that data aids the process of school reform by improving instruction through immediate feedback regarding student performance, program effectiveness, and instructional consistency and quality. Data also aids in guiding curriculum development and implementation, promoting accountability by enabling schools to meet federal and state mandates, identifying and eliminating ineffective practices while identifying and implementing best practices, and ultimately ensuring effective educational reform by predicting and eliminating failures and identifying and pursuing successes (Bernhardt, 2004). The purposeful use of data is a primary tool in allowing educators to make effective decisions (Johnson, 2006).

Traditionally, the use of data has focused on assessment data (Parsley, Dean, & Miller, 2006). A school’s assessment structure allows for measuring student learning by evaluating mastery of clearly defined curriculum goals (Danielson, 2002). A comprehensive assessment plan matches the types of assessment to the demands of externally imposed standards and identifies what the specific uses of data will be in terms of enhancing student learning, as well as for accountability and reporting purposes (Carr & Harri, 2001). Gold (2005) recommends using more than one assessment tool, arguing
that multiple sources of data enhance the reliability of findings. A combination of classroom assignments and projects, tests and quizzes, and large scale assessments provide a more accurate representation of student achievement, as well as weaknesses (Gandal & McGiffert, 2007).

Pascopella (2005) argues that, in addition to using traditional assessment data, there is a growing trend towards the collection of a wide variety of student data that allows educators to make sound decisions and identify options in improving student achievement. Other types of data that may be collected include survey results, interviews, numbers of books read, and student portfolios and exhibitions.

Meaningful data of any type allows educators to make decisions regarding curriculum, programs, or teaching strategies to address the needs of particular students as early as possible and bring about improvements in student achievement (Lachat, Williams, & Smith, 2006). These decisions start by asking the basic question: What types of data, besides state assessment data, are needed to consider in planning for school improvement (Pascopella, 2005). According to Creighton (2001), schools typically collect educational data in the form of attendance rates and state and local assessment results, and use it for administrative purposes rather than measuring school performance and improvement. However, there are few benefits to be reaped from the act of collecting data without a guiding purpose. Unfortunately, school leaders do not always utilize available data in making important decisions; instead, some base these decisions on “informed intuition.” Creighton further argues that effective decision-making is based on obtaining meaningful information from the accurate and appropriate analysis of data. In an Education Commission of the States report (2005), Armstrong and Anthes suggest
that the type and nature of the data collected impacts the decisions made by educators and educational institutions. Usually, the data collected is demographic, achievement, instructional, or perception data. Effective utilization of combinations of these types of data allows school leaders to make informed and effective decisions (Education Commission of the States, 2005). Schools and school districts, however, often collect more data than they can use in a meaningful manner, Pasopella (2005) points out. Educators and educational institutions should start by focusing on the proper analysis of already existing data, including demographic and assessment data, which would very likely provide sufficient information to guide effective decision-making regarding student learning and school improvement (Pasopella, 2005).

Thus far, schools have disaggregated assessment data by race, sex, and socioeconomic class. NCLB legislation requiring that it be further disaggregated to address students with disabilities and English language learners, as well as demonstrate yearly progress and the link between program participation and student achievement, has forced schools and educators to make every effort to ensure that they comply with these requirements (Rudner & Boston, 2003). While disaggregated test data can be helpful in identifying the success of a district’s curriculum management, schools are in need of a system of data collection and analysis that is able to probe beyond simple disaggregation and provide the information that is required by NCLB and local and state requirements. Any system implemented must have the ability to generate reports that provide information to satisfy accountability demands, explore relationships and connections among different types of data, and inform effective decision-making (O’Shea, 2005).
The information generated by any system should be disseminated amongst teachers in a meaningful and easily comprehensible format in order to be most effectively used.

Effective data collection and analysis necessitate appropriate technical support and the presence of a data warehouse (Bernhardt, 2004). A data warehouse is a system that is structured to allow for various queries and analyses, and allows schools and districts to collect and manage data, in order to provide information and insight into further improvement of the organization and allow for compliance with external requirements (Rudner & Boston, 2003). School districts are beginning to realize the need for a data warehouse that affords fast, accurate, and effective data storage and analysis that is easily accessible and produces quick disaggregation of data and appropriate reports (Bernhardt, 2004). In addition to demographics and student achievement data, a data warehouse can provide both longitudinal and cross-sectional information that allows schools and school leaders to detect trends in the student and teacher population. This information is often helpful for policy makers involved in long-range planning regarding student learning and school improvement (Rudner & Boston, 2003).

Reeves (2004) uses the terms "student-centered accountability" or "holistic accountability" to describe accountability based not only on assessment scores and academic achievement, but also on curriculum, instructional strategies, and leadership practices. He states:

Student-centered accountability focuses on the progress of individual students and does not rely exclusively on averages of large groups of students who may or may not share similar learning needs, teaching strategies, attendance patterns, and
other variables that influence test performance. It does not exclude test scores but places the traditional accountability reports in context. (p. 6)

According to Creighton (2001), “there is a dire need for an approach to statistical analysis that is related to educational leadership decision-making applications” (p. xi).

While schools are increasingly focusing on gathering more data, many of them lack the resources or a carefully designed plan of action in utilizing data effectively to identify strengths and weaknesses and plan improvements (Love, 2004). According to Marzano (2003a), educational institutions do not use measures that accurately reflect student learning and achievement. State assessments, which are the focal points of accountability of schools, “miss the mark dramatically with respect to describability, teachability and reportability” (Popham, 2003). Neill (2003) further discounts high-stake testing imposed by states for the purpose of accountability. He argues:

Driving instruction with high stakes tests will not improve schools. A large body of research demonstrates that high stakes testing narrows curriculum and drives down instruction. It causes students to turn off, tune out and often drop out; induces schools to push students out, increases grade retentions, propels teachers to leave and inhibits needed improvement. In the end high stakes testing will hurt students particularly those students who most desperately need better schools.

Marzano (2003a) calls for the use of assessments that actually measure what is taught and report cards that track student performance on specific knowledge and skills. While the wrong data may be “seductively appealing,” the right data is essential in helping teachers achieve better results in their efforts to improve student learning (Popham, 2003).
Use of Data and Leadership Practices

The educational landscape is presently experiencing a growing national movement to hold schools accountable for student achievement (Kenney, 1998). Leadership practices, in large part, determine the ways schools respond to public scrutiny and demands (Lashway, 1999). The school leader's ability to identify areas in need of improvement and select the right interventions is a vital component of successful school leadership (Marzano et al., 2005). Saphier and D'Auria (1993) argue that three basic values essential in the process of bringing about all-encompassing school reform are: core beliefs regarding learning, desired outcomes for student achievement, and commitment to working together to achieve those outcomes. Specific leadership tasks that promote student achievement include knowledge and active involvement in curriculum instruction and assessment, as well as focused monitoring and evaluation (Marzano, Waters & McNulty, 2005). Nelson and Sassi (2005) also assert that school leaders must possess a thorough understanding of educational processes and the ability to create and sustain a classroom and school environment that encourages and supports taking intellectual risks, which will lead to the growth and improvement of the institution.

As a result of the changing landscape, the role of the principal is evolving into that of an educational leader with the primary responsibility of deciding school improvement growth goals and the control over resources that are necessary to implement plans to meet the goals (Creighton, 2001). Principals, then, are under pressure to learn how to best lead in the process of improving instruction (Parrace, 2002). While the role of the principal varies depending on the organization, its size, and complexity, argue Ubben, Hughes and Norris (2001), tasks that are fundamental for all educational leaders
include: instructional leadership, curriculum development, student services, building and resource utilization, and public relations. They emphasize that performing these tasks effectively requires the ability to plan and organize work, collaborate with and lead others, analyze problems and make decisions, communicate orally and in writing, perceive the needs and concerns of others, and perform under pressure (Ubbén et al., 2001).

French and Raven (as cited in Picciano, 2006) have identified expert power as a fundamental component of successful leadership. They define expert power as "simply having access to critical information about one's organization and environment" (p. 17). Data-driven decision-making employs the concept of expert power in utilizing available information about the organization to inform decisions (Picciano, 2006).

Data-driven decision-making and instructional leadership are inextricably intertwined (Farrace, 2002). According to Armstrong and Anthes, in an Education Commission of the States report (2005), successful school districts use data to inform instruction, as well as design and implement improvement plans. School improvement plans assist schools and educators in focusing on student learning, identifying areas in need of improvement, and selecting appropriate interventions and strategies. Analysis of available data, whether demographic, student performance, or instructional information, brings school staff together and makes them work as a team. It also allows for the selection of appropriate data and the monitoring of the effectiveness of implementations.

"[F]or too long," however, argues Creighton (2001), "many school leaders have made decisions about instructional leadership with 'intuition' and 'shooting from the hip.'" All too often school leaders do not include data collection and data analysis in the
He emphasizes the importance of a clear understanding of data analysis and its implications and role in improving instruction and student learning, and that this understanding is crucial for principals. In 1998, the Association of Washington School Principals outlined seven main responsibilities for school leaders:

1. Promoting a safe and orderly school environment
2. Sustaining a school culture of continuous improvement
3. Implementing data-driven plans for improving student achievement
   Implementing standards-based assessment
4. Monitoring school-improvement plans
5. Managing human and financial resources to accomplish achievement goals
6. Communicating with colleagues, parents, and community members to promote student learning.

In order for principals to fulfill these responsibilities, it is necessary that districts and states provide them with adequate support and the authority necessary to effectively lead their schools (Lashway, 1999).

According to Taylor and Williams (2001), accountability should affect student learning rather than test scores and should result in long-term strategic improvement plans rather than test improvement strategies designed to bear immediate results. School leaders, they argue, should view and organize the response to the accountability requirements as a team effort, where the team is comprised of all stakeholders including teachers, school leaders, community members, school board members, and superintendents. Abelman and Elmore point to internal accountability systems that
guide schools' response to external demands. A sense of personal responsibility which leads educators to feel accountable to their own values is a primary determinant of the schools response to externally imposed standards and performance expectations (as cited in Nelson & Sassi, 2005).

Taylor and Williams (2001) emphasize that an environment of teamwork and collaboration is a requirement for a successful school, for it holds all stakeholders accountable for their own defined responsibilities, thus freeing the school principal to focus on instructional leadership and teacher support and improvement. They argue.

Effective principals are instructional leaders who use their knowledge and skills in daily interactions with teachers and who provide their teachers with professional development to improve classroom instruction. Teachers are encouraged to use whatever strategies they deem effective to reach the designated target of student achievement. (Taylor and Williams, 2001)

Teachers and the Use of Data in Shared Decision-Making

According to Taylor and Williams (2001), the success of principals in bringing about reform starts with the support from the district. District leaders and content specialists play an instrumental role in principals' success in generating school improvement, because they are responsible for providing the resources and staff development necessary to meet school goals.

Every district and school should have systems of alignment that ensure that curriculum, teaching materials, assessment and staff development are linked.

Teachers need to know that what they are teaching is what will be tested and that
they will be provided the resources to teach what the students need to know and be able to do. (Taylor & Williams, 2001)

Victoria Bernhardt (2003) argues that the school district bears responsibility for providing its schools and their staff with specialists responsible for performing analyses of available data and allowing teachers to focus on the results and their implications. Teachers, she maintains, “should always be able to start the school year with historical data on each of their students and a full picture of what students already know and what they need to learn. And they should use ongoing measurements to make sure that all students are progressing and mastering the content” (Bernhardt, 2003). It is important, however, she asserts, to resist concentrating on assessments of student learning as the only measure of student achievement. Student performance on assessments is only one facet of the improvement process; teachers and administrators need to look at assessment results, in combination with the other data pertaining to their students that is available to them.

Successful professional development is integral in implementing the effective use of data. Armstrong and Anthes point to the successful utilization of data regarding student progress on benchmark testing to guide teaching strategies and professional development needs (Education Commission of the States, 2005). Pascopella (2005) also discusses professional development that focuses on detailed data to guide instruction. Training teachers to ask pointed questions regarding their own teaching and seek ways to implement what the data indicates in terms of student learning processes forms the pathway to success in achieving desired student outcomes. Effective professional development based on careful data analysis assumes that the school leader is supportive,
that teachers feel accountable and work as a team with an effective and encouraging coach who provides support, and that they understand the process of data analysis and its implications for both their teaching and student learning (Pascopella, 2005).

Fullan (2002b) asserts that teamwork is the key to school improvement. Teams must have a shared commitment, a “compelling direction for [their] work”, and must operate within an organization that provides the structural support, resources, and teamwork coaching to allow them to focus on their goals (Fullan, 2002b). Lashway (1999) points to the assertion made by Mohrman and Lawler that “both intrinsic and extrinsic motivation play a role in teacher behavior.” Teachers, they argue, will work toward a particular goal only when it has desirable personal outcomes and they believe it is attainable (Lashway, 1999).

**Opposing Views and Criticisms**

For most educators, data is “a burden, not an asset,” argues Doyle (2002).

Collecting and processing data does not ensure that it will be used to bring forth school reform and improvements in student learning. Streifer argues that

> Data collection is a messy, messy business... done in different formats, sometimes electronically, sometimes on cards or paper. Often it's incomplete. Teachers collect it differently, and not everybody has the same access to it, which means not everybody is going to be on the same page. (Streifer as cited in LaFée, 2002)

Gemberlin further points out that schools and educators do not all have the same technology and tools to collect and process data effectively and purposefully. “You can’t
just crunch some numbers and expect that this will lead to effective, real-world
decisions,” he declares (Gemberlin as cited in LaFée, 2002). The use of data to both
measure quality and growth and to implement reform involves complexity, training,
costs, and culture shifts (LaFée, 2002).

While data is viewed by many as a vehicle for effective decision-making and
improving instruction and student learning, it is also perceived by others with skepticism,
particularly when it appears side-by-side with accountability and mandates. Data is often
used for school reform and improvement or to meet accountability mandates, argues
Doyle (2002), a prospect which often results in apprehension among educators.

“[D]isaggregating test scores by identifiable groups of youngsters can provide the key to
either bettering instruction of finger pointing (or both). In an ideal world, such data
would always be used for diagnostic and prescriptive purposes, not recriminations or
blame,” he points out. This distinction must be made in explicit terms so that educators
do not find themselves facing repercussions stemming from standardized test results and
data interpretation (Doyle, 2002).

“[F]indings are often misinterpreted or used as ammunition in political battles.
Research that supports the existing beliefs or biases of educators is likely to be accepted
uncritically, while contrary evidence may simply be ignored” states Pearson (2000).
Data, as well, may inadvertently be used in ways that support the practitioner’s own
biases. Gilovich (1981) argues that individuals usually do not base their decisions solely
on the immediate available information, but also “draw on additional information from
our past experiences and general knowledge” (Gilovich, 1981). Similarly, collected data
may be disregarded, or grouped and presented in ways that, in the end, reflect the user's own subconscious beliefs or expectations.

An additional criticism that has surfaced concerns the shifting of funds that might previously be used for student programs into technology that supports data use for reasons of accountability. La-Coste Caputo (2005) points out that while the U.S. Department of Education's National Education Technology Plan recommends the use of data systems to increase performance, the federal government is not providing schools with the additional funds necessary to do that. She points to a national study on the use of technology in schools conducted by Education Week that found evidence that schools are shifting funds from instructional technology in the classroom to data management systems. Moreover, several critics of the National Education Technology Plan, she notes, argue that "spending millions on systems that essentially are designed to boost standardized test scores and meet state and federal accountability standards is a waste" (La-Coste Caputo, 2005).

Boocher-Jennings (2006) points to particular behaviors of educators as unintentional consequences of accountability systems and federal and state mandates. She argues:

[E]ducators and others may adopt a series of 'gaming' practices in order to artificially inflate schools' passing rates. Such practices include giving students a special education classification to exclude them from high-stakes tests, retaining students in grade to delay test-taking, diverting attention away from subjects not evaluated on high-stakes tests, teaching to the test, and cheating.
Data-driven decision-making often leads to decisions that favor some groups of student over others, and divert resources to those groups that are most likely to meet the school’s requirements in terms of passing rates and accountability. These types of decisions are often rationalized on the basis of existing data, but disregard many ethical or moral obligations (Booher-Jennings, 2006).

Shapiro and Stefkovich (2005) argue that the use of test data for accountability affects not only schools and school districts in terms of consequences, but also individual students. “For students, the number they receive on a high stakes test frequently determines their educational opportunities in the future. Over time, tests do more than provide a number for how successful a school or student has been. Frequently, these tests drive the curriculum. More and more, teachers and administrators turn to the test to guide what they should teach in schools” (p. 121).

The use of data combined with increased accountability may lead to detrimental decisions by educators. Strike, Haller and Saltis (2005) call for professionals to make decisions “guided by an ethic they have internalized” (p. 105). While facts and data play a crucial role in making decisions that involve moral issues, they alone should not drive those decisions (Strike et al., 2005). School leaders are responsible for organizational structures that affect all aspects of school processes and dynamics; as such, they find themselves making decisions that may pit student knowledge and student growth as learners versus learning techniques that lead to high scores on state assessments.

“Educators who fail to insist on the integrity of knowledge with their students can be accused of a kind of ethical laxity” (Starratt, 2004, p. 5). Schools are organizations that employ procedures and processes based on the underlying premise of the integrity and
purpose of a learning institution; however, when driven by accountability demands, they often act in ways that undermine that integrity and purpose. School schedules and programs can provide great advantages for some students, but prove detrimental to others. Students with special needs or second language learners become frequent victims of high-stakes testing, because their learning processes are diverse and may require circumstances and accommodations different from the typical school day schedule and instruction. Decisions about student programs, improvement efforts, and allocation of resources are ethical decisions which should not be based entirely on data but should reflect the ethical and moral principles of the profession in order to serve all students to the greatest extent possible (Starratt 2004).

Conclusion

Increasing accountability demands and compliance with externally imposed demands necessitate the need for accurate and timely data and an effective data analysis and dissemination system. Data-driven decision-making is the use of data to inform and guide decisions regarding courses of action and policy implementation. It emphasizes the efficient and appropriate use of existing information and calls for data information systems that deliver data in a timely and user-friendly manner (Picciano, 2006)

While, however, “the term data inclines most educators to think good thoughts laced with notions of evidence, science, and rigor,” it is important to realize that the wrong kind of data can actually interfere with educators’ efforts to improve student learning (Popham, 2003). Popham (2003) further argues that state assessments provide inadequate useful information to guide curriculum and instruction and improve student
learning. He suggests that educators discount data that is not instructionally useful and, instead, design and employ assessments that are instructionally valuable and provide the right data that will yield useful information and aid in improving student learning.

In describing the challenges ahead, Gandal & McGiffert (2003) assert that “[s]tandards, testing, and accountability have become the policy framework within which schools in every state must operate.” In order to achieve the desired results and effective school reform, however, schools need “clear and rigorous standards, assessments aligned to those standards, results reported in meaningful ways, and appropriate incentives and consequences” (Gandal and McGiffert, 2003). Schools and school districts then need to work with states in aligning assessments, curriculum, and professional development in the effort to attain improved student learning and sustain effective school reform.
Chapter III
Methodology

The original intent of this study was to identify leadership practices that lead to the successful use of data to improve student learning. As the research progressed, the researcher realized that the meaningful use of data in school improvement is an organized effort that involves district leadership, building leadership, and shared teacher leadership. District leadership is initially responsible for establishing the processes and providing the resources and services that encourage, guide, and continuously support the use of data to drive instructional and administrative decisions. However, the individual school environments, building leadership, and teacher perceptions regarding the use of data are also central factors in its effective use to improve student learning.

The progression of the research process led to the identification of a number of districts that employed effective strategies and processes in the meaningful use of data to guide decision-making. A comparison of state report cards of these districts revealed a significant increase in the numbers of students scoring at levels 3 and 4 in English Language Arts and Mathematics at both grades 4 and 8 from the year 1999 - 2000 to 2004 - 2005 for the particular district examined in this study. In grade 4, the percentage of students scoring at levels 3 or 4 in English Language Arts increased from 60% in 1999 - 2000 to 88% in 2004 - 2005, while the percentage of students scoring at levels 3 or 4 in Mathematics increased from 78% in 1999 - 2000 to 95% in 2004 - 2005. Similarly, in grade 8, the percentage of students scoring at levels 3 or 4 in English Language Arts increased from 57% in 1999 - 2000 to 68% in 2004 - 2005 while the percentage of students scoring at levels 3 or 4 in Mathematics increased from 43% in 1999 - 2000 to
60% in 2004 - 2005. Further research indicated that the particular district presented in this study was one that utilized a set of practices regarding data, as described and substantiated by the related literature examined by the researcher, that tend to lead to improvement in student learning. The study ultimately focused on a design format aimed at understanding the processes present in the organization that lead to the effective use of data to guide decision-making by school teachers and administrators.

Case Study Design

According to Merriam (1998), data collection in case-study research consists of three components: analyzing documents, observing, and interviewing. Usually, however, mainly one or two of these methods are used. For this particular case study, the predominant strategies used were analyzing public documents about the school district, interviews, and surveys directed toward individual district staff members. Occasional observations also took place, but these were used only as a means for the researcher to familiarize herself with the district prior to the onset of the study and were not considered in data analysis. These observations included attendance at board meetings and informal conversations with various stakeholders. The format followed for this case study is based on the guidelines proposed by Yin (2003). The five basic components of research design, a study's questions, its propositions, its units of analysis, the logic linking of the data to the propositions, and the criteria for interpreting the findings (Yin, 2003), provided the basis for designing this case study and the questions used for interviewing.
**Study Case**

The population of this study consisted of a school district in a New York State suburban community. The district is comprised of three K-5 elementary schools, one grades 6-8 middle school, and one grades 9-12 high school. According to the New York State Report Card for the year 2004 - 2005, the racial/ethnic make-up for the district being studied was: 55.7% White, 26.2% Black, 10.0% Hispanic, and 8.0% Asian/Pacific Islander. Students eligible to receive free/reduced lunch based on income level constitute 20% of the population.

Each elementary school is led by a principal, and enrollment ranges from 400-500 students. The middle school has one principal and two assistant principals with an enrollment of 635 students. The high school has one principal, two assistant principals, and one part-time assistant principal with an enrollment of 927 students. The average class size for the elementary schools is 20.5 students and for the middle and high schools is 24 students.

Community involvement in all schools is encouraged by the district and school administration; parents and other community members are invited to become active in decision-making by joining teams at the district and school level, as well as share their talents and experiences with students. Additionally, the district has put in place a number of programs during and after school designed to provide support and enrichment for students at all grade levels.

According to the "District Need to Resource Capacity" category, as determined by the New York State Department of Education, this is a category 5 district, a school district with average student needs in relation to district resource capacity. The district
has met adequate yearly progress requirements as set by No Child Left Behind for 2002 - 2003, 2003 - 2004, and 2004 - 2005, and has received Title I funding for these years.

District practices regarding data focus on the increasing use of data to inform practice and the attempt to transform the community into what its superintendent calls "a culture of inquiry that never stops asking questions, that seeks always to dig deeper into how...children learn so that...improvements are continuous" (Name of District withheld, 2006). For the past 3 years, the district instructional data department has been systematically collecting, organizing, and publishing data. Currently, assessment data is disseminated in user-friendly formats to teachers shortly after assessments take place. This allows teachers to adjust instruction and affect student learning immediately. The goals of the district regarding data include further development of the district data warehouse and providing regularly updated student fact sheets which will allow for immediate access to student information in addition to state assessment item analysis charts that will give teachers information about their students' assessments in a timely manner. The district aims to expand and maintain its data warehouse in such a way that will allow for the use of data in meeting and reporting accountability requirements as well as for diagnostic, predictive, improvement, and evaluation purposes.

Picciano (2006) argues that all districts "should make development, improvement, or upgrading of their database management systems a priority in overall planning" (p. 22). The school district being studied recognized the need for improvement in database management and began a systematic effort to collect and organize data in a manner that allows teachers to use available data to improve both instruction and student achievement. The district has created an instructional data department and is in the
process of expanding its data warehouse, which will further enhance its efforts to use data effectively in informing decision-making.

Sample

The population for this study included 228 teachers in three elementary schools, the middle school, and the high school, as well as four of the five school principals. State and district documents were also used to gather preliminary information about the district. These included the 1999 - 2000 NYS School Report Card, the 2002 - 2003 NYS School Report Card, the NYS 2003 - 2004 NYS School Report Card, the 2004 - 2005 NYS School Report Card, Assessment Data for the 2004 - 2005 School Year, and the State of the District Report 2005 - 2006.

Research Instruments

Data for this case study was collected in multiple ways. The first component of research entailed examining state and district documents. Assessment Data for the 2004 - 2005 School Year and the State of the District Report 2005 - 2006 are documents published by the school district and were obtained from the district Website. Assessment Data for the 2004 - 2005 School Year provided insight into district practices regarding collecting, organizing, analyzing, and disseminating data. The State of the District Report 2005 - 2006 provided a thorough analysis of the current state of the district along with recommendations to the Board of Education. The New York State Report Cards were obtained from the New York State Department of Education Website. The categories examined in these documents were: English Language Arts, Grades 4 and 8; Mathematics, Grades 4 and 8; High School English Achievement after 4 years of
instruction; and High School Mathematics Achievement after 4 years of instruction. These were examined to detect trends in student achievement.

A teacher survey constructed and administered by the researcher was the second component of research in this case study. The survey was divided into two parts. The first part was designed to provide demographic background regarding the respondent. Questions in the second part were intended to shed light onto teacher practices regarding the use of data, as well as their views regarding its connection to school goals and accountability. The survey was mailed to teachers in all district schools. The results of the teacher surveys were useful in determining what types of data teachers use to inform their instruction and to what extent they use this data.

The third component of data collection entailed interviews with the principals of the district schools and was designed to provide an understanding of leadership practices that promote the use of data to inform decision-making in improving student achievement. The interview protocol consisted of 11 questions that were intended to provide insight regarding the research focus.

Validity and Reliability

Copies of the survey and interview questions were given to a panel of school and district administrators for assessment and feedback regarding their suitability to the goals of the research. Changes were made based on recommendations from the panel. Both instruments were reviewed again, and final recommendations were integrated.
Data Collection Process

Surveys. The surveys were mailed to teachers in all of the district schools, along with a cover letter that identified the researcher, explained the purpose of the study, affirmed that participation was voluntary, and encouraged participation in the survey. Stamped, self-addressed envelopes for returning the completed survey by mail were provided. The survey was anonymous, and surveys were color-coded to identify each district school. Of the 228 teacher surveys that were mailed to the schools, 34 were returned.

Interviews. Four of the five district school principals were interviewed; the fifth school leader was unavailable at the time the interviews took place. Appointments for interviews were made by phone. The interview questions and a letter of informed consent were mailed to each principal in advance of each interview. The interviews took place at the participating principal’s school. Each of the schools was identified by a letter, A - F, based on the order in which the interviews took place. By signing the consent form, all four principals gave permission for the interview to be recorded. The interviews were recorded on audio-tape and identified by the letter that was assigned to the school by the researcher in order to protect the anonymity of the participant. These interviews were transcribed by the researcher and appear in Appendix D.
Data Analysis

The study was guided by the following research questions and subsidiary questions:

Research Question One

To what extent do school policies and procedures encourage and support teacher use of data to inform instruction and improve student learning?

Subsidiary questions

1. How is the data used to inform decision-making regarding curriculum and instruction?
2. What difficulties are encountered in using this data?
3. How are these difficulties managed?
4. What strategies are in place that facilitate the use of data to inform decision-making regarding curriculum and instruction?

Research Question Two

How do leadership practices support the use of data for improvement of student performance?

Subsidiary questions:

1. What relationships, if any, exist between leadership practices and using data to inform decision-making?
2. What relationships, if any, exist between leadership practices and shared vision for continuous student achievement?
3. What relationships, if any, exist between leadership practices and shared leadership for reaching mandated standards?
4. What relationships, if any, exist between leadership practices and leadership for change and improvement?

When determining the strategy to follow in a case study, Yin (2003) points out that a descriptive approach is used to “identify the appropriate causal links to be analyzed” (p. 114), and is often utilized in studies of implementation involving several complex processes that are not conducive to enumeration, tabulation, and quantification. The district studied in this case study is a relatively small one, employing five principals and 228 teachers. While both the data collected from the principal interviews and the teacher surveys was rich in information, the response rate of the teacher surveys did not allow for tabulation and quantification of results. Thus, the analytic strategy employed by the researcher was a descriptive approach aimed at discovering existing relationships and patterns.

Analysis of the data utilized pattern matching. The technique of pattern matching study, according to Yin (2003), “compares an empirically based pattern with a predicted one (or with several alternative predictions). If the patterns coincide, the results can help a case study to strengthen its internal validity” (p. 116). In descriptive case studies, such as this one, pattern matching assumes that the variables display a predicted and identified pattern specific to the case at hand.

Information gathered by the review of literature regarding the use of data to inform decision-making, initial conversations with district residents, observations at board meetings, and a basic knowledge of the district pointed to a set of factors that provided the basis for pattern matching. These included:
1. A set of best practices described by the related literature as supporting the use of data to inform decision-making;

2. The use of a data map that includes the types of data necessary to meet the needs and goals of the district, as well as systems in place to facilitate easy and timely access to data;

3. A culture that encourages and supports the use of data, and leadership that ensures that teachers are provided with the necessary resources to enable them to engage in the meaningful use of data to inform instruction;

4. Professional development that supports the meaningful utilization of available data by teachers and school leaders.


The teacher survey answers were analyzed for patterns that would shed light onto particular aspects of the culture of the district especially regarding the use of data, as well as accountability and shared decision-making. The interview questions were designed to provide insight into leadership practices that support and encourage the use of data to guide instruction and decision-making regarding student achievement.

Tables 1 and 2 identify the questions in this study, the corresponding survey and interview questions, the source and method of data collection, and the analytic technique
used. The tables were used during the data analysis stage to focus on the survey and interview answers that related to each of the research and subsidiary questions.
<table>
<thead>
<tr>
<th>Subsidiary question</th>
<th>Survey question</th>
<th>Interview question</th>
<th>Sample</th>
<th>Method of collection</th>
<th>Data analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How is the data used to inform decision-making regarding curriculum and instruction?</td>
<td>1. Which of the data below do you most frequently use?</td>
<td>8. How do teachers use available data in making instructional decisions?</td>
<td>District</td>
<td>Survey</td>
<td>Pattern</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>principals</td>
<td>answers</td>
<td>matching</td>
</tr>
<tr>
<td>2. What difficulties are encountered in using this data?</td>
<td>2. Which of the above data is most accessible to you?</td>
<td></td>
<td>District</td>
<td>Survey</td>
<td>Pattern</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>teachers</td>
<td>answers</td>
<td>matching</td>
</tr>
<tr>
<td>3. What types of data do you think would be useful, but you do not have access to?</td>
<td></td>
<td></td>
<td>District</td>
<td>Interview</td>
<td>answers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>principals</td>
<td>answers</td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Type</td>
<td>Data Source</td>
<td>Pattern</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>---------</td>
<td>-------------</td>
<td>---------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. How are these difficulties managed?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. What strategies are in place that facilitate the use of data to inform decision-making regarding curriculum and instruction?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Do you discuss individual student work in any other type of professional forum? If yes, describe the forum,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Are teachers encouraged to use available data in informing instructional strategies? If so, what type of training or professional development designed to help them in the use of data is provided?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Are there policies or guidelines in place that outline how administrators and teachers should use data? If so, describe them.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Do you discuss individual student work at faculty, departmental or grade meetings? If yes, describe the type of work and your reasons for discussion.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Are there answers matching to District principals answers survey?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
type of work discussed,
and the reasons for
discussion.

6. By what data or other
means does the school
measure academic
growth? Is that a school-
level or district-level
decision?

Note. To what extent do school policies and procedures encourage and support teacher use of data to inform instruction and improve student learning?
Table 2

**Research Question 2**

<table>
<thead>
<tr>
<th>Subsidiary question</th>
<th>Survey question</th>
<th>Interview question</th>
<th>Sample</th>
<th>Method of collection</th>
<th>Data analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What relationships, if any, exist between leadership practices and using data to reform decision-making?</td>
<td>clearly defined organizational goals intended to guide instruction? If so, how does your school using data to determine these goals and how is information regarding these goals disseminated?</td>
<td>7. Does your school set clear goals and objectives? Is there a plan for achieving these goals? Does the school have a clear mission statement?</td>
<td>District</td>
<td>Survey</td>
<td>Pattern</td>
</tr>
<tr>
<td>1. How is individual student growth measured in your school?</td>
<td>District teachers answers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. By whom?</td>
<td>District principals answers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. What role does data play in your daily decision-making?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. How is available data disseminated among the staff?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. What skills do you feel are important in analyzing school data? Identify those skills for
which you feel
strong?

2. What relationships, if any, exist between leadership practices and shared vision for continuous student achievement?

3. Do you attempt to further the school goals in your day-to-day work? If so, describe how.

2. Who determines the school's organizational goals? Describe the process used in this determination.

7. Are teachers encouraged to use available data in informing instructional strategies? If so, what type of training or professional development designed to help them in the use of data provided?
3. What relationships, if any, exist between leadership practices and shared leadership for reaching mandated standards?

3. Are teachers held accountable to school goals? If so, how is their accountability determined?

10. How do state-imposed standards affect your feeling of accountability?

4. What do you personally feel accountable for the achievement and furtherance of school goals? If yes, to whom do you feel accountable?

4. Do teachers personally feel accountable to school goals?

9. Do you personally feel accountable for the leader, what are your goals of your school’s use of data are most effective? Which facets would you like to change or improve?

11. As a school leader, what facets would you like to change or improve?

Note. How do leadership practices support the use of data for improvement of student performance?
CHAPTER IV
Data Analysis
Discussion

The purpose of this study was to determine the practices a school district follows in utilizing existing student data to inform decision-making regarding student performance and growth. As a result of NCLB legislation, increasing demands are placed on educators regarding student performance, in part due to growing scrutiny by the public resulting from public reporting of school and district performance by means of state-issued school report cards. District and school administrators engage in the often frustrating process of making decisions regarding what data should be utilized, how it should be utilized, how to establish the necessary conditions for the effective use of data, and how to effectively train school staff in the appropriate use of data.

In an attempt to gain a thorough understanding of the district in terms of student performance over time, the goals of the district regarding student learning, and the processes and resources facilitating the use of data in decision-making, the New York State Report Cards for the years 2002 - 2003, 2003 - 2004, and 2004 - 2005, Assessment Data for the 2004 - 2005 School Year, and State of the District Report 2005 - 2006 were examined.

Analysis of New York State Report Cards for the years 2002 - 2003, 2003 - 2004, 2004 - 2005 and Assessment Data for the 2004 - 2005 School Year revealed the following, as seen in Table 3:

1. The elementary schools have shown a sustained increase in both English Language Arts and Mathematics. The percentage of elementary students
scoring at levels 3 or 4 has increased from 79% in 2002 - 2003 to 88% in 2004 - 2005 in English Language Arts and from 81% in 2002 - 2003 to 95% in 2004 - 2005 in Mathematics.

2. At the middle level, the percentage of students scoring at levels 3 or 4 in English Language Arts increased from 53% in 2002 - 2003 to 68% in 2004 - 2005. The percentage of students scoring at levels 3 or 4 in Mathematics increased from 55% in 2002 - 2003 to 71% in 2003 - 2004, but decreased to 69% in 2004 - 2005. Overall, the average increase from 2002 - 2003 to 2004 - 2005 in middle level Mathematics was 5%.

3. At the high school level, the percentage of students scoring at levels 3 or 4 in English Language Arts increased from 83% in 2002 - 2003 to 90% in 2004 - 2005, whereas the percentage of students scoring at level 3 or 4 Mathematics did not show much variation.
### Table 3

**Summary of Student Performance in English Language Arts and Mathematics**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary Level English Language Arts</td>
<td>79%</td>
<td>81%</td>
<td>88%</td>
</tr>
<tr>
<td>Elementary Level Mathematics</td>
<td>81%</td>
<td>91%</td>
<td>93%</td>
</tr>
<tr>
<td>Middle Level English Language Arts</td>
<td>53%</td>
<td>63%</td>
<td>68%</td>
</tr>
<tr>
<td>Middle Level Mathematics</td>
<td>55%</td>
<td>71%</td>
<td>60%</td>
</tr>
<tr>
<td>High School Language Arts</td>
<td>83%</td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td>High School Mathematics</td>
<td>86%</td>
<td>88%</td>
<td>80%</td>
</tr>
</tbody>
</table>

Analysis of Assessment Data for the 2004 - 2005 School Year and the State of the District Report 2005 - 2006 has provided the following information regarding district initiatives:

In response to NCLB changes, the district identified the following responses:

1. Understand the “rules of the game.”
2. Maintain a balanced educational philosophy committed to good teaching and learning as the best way to prepare students.
3. Use data analysis to identify areas of success and areas in need of improvement.
4. Make information useful for teachers and students.
5. Create and sustain professional learning communities: teachers working collaboratively to develop instructional strategies (Assessment Data for the 2004-5 School Year, Name of District withheld, 2006).

Additionally, the district aims to continue to update the student information system by maintaining a data warehouse that will provide the following:

1. Continuously updated student fact sheets that will give decision makers immediate access to student demographic, program service, and assessment history in one printable report.

2. State assessment item analysis tables that will provide each teacher with his/her students' assessment information immediately after the test for use in the classroom to inform instruction.

3. State assessment result banks that will provide value-added information on program effectiveness, the success of subgroup interventions, and students' future performance (State of the District Report 2005 - 2006, Name of District withheld, 2006).

Some of the information the district has made available includes:

1. Trends in ELA and math scores for the past three years for each building and subgroups as defined by NCLB

2. Analysis of assessment results in relation to poverty, program status, and ethnicity

3. Analysis used to detect patterns in student achievement which will focus inquiry into possible improvement
4. Results of a 3-year longitudinal study of 170 students from 4th grade to 10th grade math designed to detect change patterns. Initial groups were organized according to level of achievement and then disaggregated into NCLB’s ethnic, program service, and income categories.

5. Use of data folios to guide instruction to improve student achievement. Data folios are based on item analysis, which provides extensive information to teachers regarding assessment questions, response patterns, and information regarding their own students’ performance on each particular question, as well as suggestions for skill building and activities to guide instruction towards improving future student performance. Data folios for ELA 4 2005 were provided to teachers of subsequent grades soon after the test was given. The district is expanding the data folio program to include mathematics as well. (Assessment Data for the 2004 - 2005 School Year, Name of District withheld, 2006).

The philosophy of the district centers on promoting self-esteem and respect for others, believing in each person’s ability to achieve their full potential, and directing all shared efforts and decision-making towards helping students meet the challenges of both the present and future successfully. The mission statement of the district reads: “Based on its collective values and vision, the school community has pledged to nurture a love of learning, yield positive outcomes, appreciate diversity, care for each other, and keep on the path to excellence” (State of the District Report 2005 - 2006, Name of District withheld, 2006).
District administration seeks community involvement by encouraging membership in district groups, such as task forces, committees, and site-based teams. All buildings have active PTA organizations. The district has publicly declared its goals with regard to the community as the effort to engage in a partnership that aims to shape a dynamic future for both students and residents. Furthermore, the district has proclaimed its commitment to excellence. It emphasizes critical thinking, communication, and computer ease in all curriculum areas and encourages students to become “well-rounded enthusiastic learners.” The district leadership has committed to an ongoing assessment structure and implementation of special programs that serve to monitor student needs and help all students reach their full potential. It recognizes the diversity of its student population and, in an effort to meet diverse student needs, utilizes a team approach for students with learning difficulties, while also aiming to challenge the more capable students. The district has adopted open enrollment in honors and Advanced Placement courses and has implemented a series of student information programs with a focus on issues such as bias awareness, conflict resolution, substance and sexual abuse, health related issues, and diverse family structures (Name of District withheld, 2006).

Informal conversations with district residents at the onset of the research revealed that district parents are satisfied with district initiatives. Several individuals indicated satisfaction with various district programs and the steps the district has taken to improve student achievement. Community attendance at board meetings is substantial. Board meetings serve as a forum for recognizing students and district accomplishments; community appreciation and praise for programs implemented by the district, as well as
for student accomplishments, were observed at two particular meetings attended by the researcher.

The study was guided by two primary research questions, and several subsidiary questions, that were designed to provide insight into the practices of the school district regarding the use of data. The questions were designed to elicit patterns regarding leadership practices that support and encourage the use of data by teachers and to provide insight into teachers' perceptions of the role of data in improving student achievement as well as their own patterns of using data. Answers to these questions were obtained by means of interviews with principals of four of the five schools in the district, two elementary schools, one grades 6-8 school, and one high school, and a teacher survey that was mailed to all teachers in the district schools.

The interview questions attempted to provide insight into leadership practices that support and encourage the use of data to guide instruction and decision-making regarding student achievement. The principals were asked 11 questions which progressed from focusing on the whole school as an organization, to their observations of teachers and their role in the organization, and, finally, to their own role as leaders of the school concerning the use of data to inform decision-making.

The survey, distributed to teachers in all five schools, was divided into two parts. The first part was designed to provide demographic background regarding the respondent. Questions in the second part were intended to shed light onto teacher practices regarding the use of data, as well as their views regarding school goals and personal accountability.
Strother (2004) identifies a "positive culture" as being essential to success of the data-driven decision-making process within a school district. A central question driving any attempt to establish an environment which supports and fosters the effective use of data to guide decision-making is: "What processes should the district implement to develop a culture that values and understands data as a vehicle for systemic improvement?" (p. 86). He points to the need for districts to implement policies regarding the proper and fair use of data, as well as making data easily accessible, while taking care not to be excessively demanding with regard to expectations for performing data analysis or reporting.

Preliminary research on district practices regarding data use, data analysis, and dissemination of results by the central office administration to individual schools revealed that the district leadership had taken an active role in analyzing and disseminating data to individual schools, in the effort to enable teachers to use the results to inform their teaching, and enable administrators to use it to guide decision-making concerning students and programs. Analysis of the interviews with the principals and responses to teacher surveys focused on identifying practices and processes that contribute to an environment that encourages and supports the use of data to guide decisions regarding student achievement. The analytical strategy employed in treating the data in this case study was a descriptive approach aimed at discovering existing relationships and patterns. Analysis of the data utilized pattern matching, which entails comparing an observed pattern with a predicted one (Yin, 2003).
Research Question One

The first research question addressed in this study was: To what extent do school policies and procedures encourage and support teacher use of data to inform instruction and improve student learning?

Subsidiary Question One

The first subsidiary question was: How is data used to inform decision-making regarding curriculum and instruction?

In an attempt to obtain answers to this question, teachers were asked to indicate what data they use in the course of their day. Teachers were asked to identify the type of data they used most frequently. A list of various kinds of data was provided and respondents were asked to indicate whether they used each particular kind often, sometimes, rarely, or never. Principals were asked: How do teachers use available data in making instructional decisions?

Survey question 1. Which of the data below do you most frequently use?

Of the district teachers who responded to the survey, the following percentages indicated the use of the noted types of data, often or sometimes: 85% indicated using informal observations, 84% indicated that they use information from previous teachers, 79% indicated that they use attendance records, 69% indicated using internal assessment results, 60% indicated that they use discipline records, 63% indicated using standardized assessment scores, and 57% indicated using district-wide statistics and performance indicators. Of the respondents, the following percentages indicated the use of the noted data type, rarely or never: 69% of the respondents indicated that they use county-wide
statistics and performance indicators, 63% indicated that they use state-wide statistics and performance indicators, 63% indicated that they use demographic records, and 55% of the respondents indicated that they use health records.

Table 4

Percent of Teachers Using Each Data Type

<table>
<thead>
<tr>
<th>Data type</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informal observations</td>
<td>64</td>
<td>21</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Attendance records</td>
<td>52</td>
<td>27</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>Internal assessment results</td>
<td>45</td>
<td>24</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>Standardized assessment scores</td>
<td>42</td>
<td>21</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Information from previous teachers</td>
<td>30</td>
<td>54</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Discipline records</td>
<td>24</td>
<td>42</td>
<td>54</td>
<td>9</td>
</tr>
<tr>
<td>District-wide statistics &amp; performance indicators</td>
<td>24</td>
<td>33</td>
<td>27</td>
<td>12</td>
</tr>
<tr>
<td>Health records</td>
<td>12</td>
<td>30</td>
<td>42</td>
<td>15</td>
</tr>
<tr>
<td>State-wide statistics &amp; performance indicators</td>
<td>12</td>
<td>24</td>
<td>30</td>
<td>33</td>
</tr>
<tr>
<td>County-wide statistics &amp; performance indicators</td>
<td>6</td>
<td>21</td>
<td>36</td>
<td>33</td>
</tr>
<tr>
<td>Demographic records</td>
<td>6</td>
<td>27</td>
<td>27</td>
<td>36</td>
</tr>
</tbody>
</table>
More than half of the teachers who responded to the survey used attendance records and informal observations often. Health records, demographic records, state-wide statistics and performance indicators, and county-wide statistics and performance indicators were used often by less than 15% of the respondents. Approximately one third of the district teachers who reported to the survey indicated that they never use demographic records, county-wide or district-wide statistics, and performance indicators. More than half the teachers in the middle and high schools indicated that they used attendance records and informal observations often, while less than 15% use health records, county-wide statistics, state-wide statistics and demographic records. More elementary teachers used discipline records, internal assessment results, information from previous teachers, informal observations, and district-wide statistics and performance indicators than their counterparts in the middle and high schools.
Figure 1. Percent of teachers using each data type.

Data Types Used by Teachers

- County Stat. & Perf. Indicators
- Demographic Records
- State Stat. & Perf. Indicators
- Health Records
- District Stat. & Perf. Indicators
- Standard Assessment
- Discipline Records
- Internal Assessment Results
- Attendance Records
- Informal Observations
- Inform. from Previous Teachers

% of Teachers Using Often or Sometimes
Interview question 8. How do teachers use available data in making instructional decisions?

Both elementary principals indicated that teachers use data mostly at grade level or team meetings. The principal of School A indicated that teachers plan their units of instruction based on what their goals for students are and on relevant data regarding student achievement, strengths, and weaknesses:

The teachers here do a great job at measuring individual student growth. The previous reading teacher/staff developer...set a lot of things in motion for the teachers to really look closely at individual growth, so...the teachers here do a great job of having some assessments...some are district based, some are state based and some are individual to the school... [they] look at students... [and] figure out...what do we know about our students and how can we plan instruction based on that.

She also indicated that some grade level teams use this process more vigorously than others: "[the reading teacher] did that with all grade levels. Not as much in Kindergarten, certainly that's still needed." The principal also pointed to response intervention as a recurrent locale for data use. The school's instructional support team, she explained, is comprised of several professionals in varying capacities and looks at the whole child, not just a particular learning difficulty or behavioral issue:

The other thing that we do is our instructional support team... When we are looking at students that are struggling and the teacher brings them to IST... [we look at] now have they've done in the past...let's really review all the history of that individual student and get a good picture of ups and downs and strengths and
weaknesses and...looking at all the measures, formal and informal, our student work overtime. And, so, there's our instructional support team and people are involved such as myself, the reading people, the special ed people, speech, psychologist...they are all involved in that....I've been very involved in response intervention and measuring student growth in that way....Teachers do a lot of interventions and a lot of good teaching, which is...much research based good teaching, but they don't isolate... When a child is having trouble with something, they don't isolate it at its point of difficulty, which, you'll be a fifth grader, might even be in second grade. So, we do a lot with individuals in response and intervention and we found out more about children than we ever knew. Children that were flat line, children that wow, they really can learn. What made them learn? Are the graphs going up and children...are the graphs going down? And, so we ask ourselves a tough question. And I think response intervention is tough, but you when you put it together for individual students that are struggling ...that really helps measure individual student growth.

The principal did indicate, however, that she would like to see more focus on cohort groups:

I really think we have to measure student growth overtime individually, and as cohort groups going up. We do a great job individually and we look at our assessments...from year to year with different children. You know how we look at the fourth grade assessment and...what do they know. Now we have a new fourth grade coming in, they need to learn these things; I don't think we look enough at cohort groups. I think we are starting to.
The principal of School D pointed to the collaborative culture of the school and indicated that the "reading teachers are very instrumental in helping the teachers with data analysis." During team meetings, she pointed out:

We brainstorm strategies that are addressing the needs identified as a result of analyzing the data." She also pointed to the collaborative nature of staff efforts and explained that teams look at the whole child: "We use a variety of measures to assess students' work. In Kindergarten, Grade 1 and Grade 2, we have the primary literacy assessment that is used and that's administered three times during the year by the teacher. At the upper grade levels, we do a multilevel assessment. It depends on what we are looking in terms of the kids' needs. And we use those assessments... as more diagnostic to provide information to help us to address the needs of the students. In addition to that, we... also observe the kids, because we want to look at the whole child. It's not only the academic progress; we look at the social interactions, also the emotional growth. And to assist us in that area we have a social worker and a school psychologist. So, it's really a team approach. It's not any one individual. We look at the kids, where they are... and we assess as we go along... so it's ongoing. Assessment is ongoing, it's informal, it's more formalized in the chapter tests in social studies and math and... so on. So,... there is no one measure that we use... Again, we determine what it is the kids' needs are, and, to provide more information for us to better be able to meet their needs and inform our instruction and curriculum, we then assess to get that additional information; and we all put our heads together as a team to do that.
Furthermore, School D maintains a progress chart for each student, which is continuously updated as new data regarding the student becomes available. The chart serves as a way to inform the teachers and the support staff of each student’s strengths, weaknesses, and progress.

The principal of School C also indicated that measuring student growth is the result of a school-wide effort and entails looking at the whole child:

I would say the primary way that students' individual growth is measured is by the classroom teacher and that the primary manner which the student’s growth is measured is by teacher observation on either students’ performance in the classroom, and that could be any kind of performance... an oral presentation or written assignment or homework. So, mostly teacher-designed instruments that help teachers measure individual student growth from either day to day or unit of study to unit of study... Beyond that you have the more formal unit tests or department subject tests that then lead teachers to analyze student mastery by grading and then of course producing an average on the report cards. The report cards then become a very formal and official assessment of the students. And that is one of the ways we track how students are doing from semester to semester, or even from quarter to quarter. On a more... school wide level, individual student growth also comes in the form of statewide assessments. Now, we have grades 3 to 8 testing so those assessments are also available... and a combination of teacher observations... developmental pieces that... teachers and guidance counselors also observe and assess. So, I'd say there's a wide variety from
academic growth to social growth, and I would say physical and emotional that comes with the nurse's assessments in terms of how students are faring.

She also pointed to the implementation of student data folios, which supply updated and relevant student information available to all teachers who provide additional services for particular students. Teachers, she stated, "also use the data to monitor student progress in a particular concept area or skill area."

The principal of School B indicated that student individual growth is measured by teachers, administrators, instructional support teams, and parents. She described the formal assessment system in place that measures student growth in particular subjects, but noted her objection to its summative nature:

The teachers of course do progress reports. The formal system we have is every 5 weeks we send out progress reports and every quarter, naturally, we send out report cards. So, we are measuring the students in a formal process eight times a year. I really don't believe that that is a good measure of the individual students, I think that most of the time what we are seeing are summative evaluations. My feeling is that assessment is instruction; and what I tell the chairs is that while all tests might be assessments, not all assessments are tests.

She described the process:

....let me go by grade because we do some particular things for ninth graders. When the ninth graders take their eighth grade core subjects assessments... I make a spreadsheet of all the kids who are receiving academic intervention services.

So, I'm just pulling out from a group. Every time they get a progress report and every time we get a report card, we have in conjunction with that an activities
eligibility list, those activities could be sports or clubs, and we put kids who failed one subject and kids who failed two subjects. We look at that list, we compare it to the kids who will be receiving academic intervention, and I have someone mark... this kid for the first progress report is still failing math, failing English, whatever it might be, and I keep that as a running tool all year long. Every time I do that, I send it to the department chairs and I ask them to have a discussion with the members of their department to find out why Johnnie is still failing when he is getting academic intervention in math. Is the academic intervention not working? Is there something that we need to look further in... Johnnie... why he is not achieving? So, we do that. Now, when I first started that, I got doesn't do homework, misbehaves in class, cuts class, regularly absent, does poorly on test. Well, guess what! If I look at any student who's failing, ninety-nine and nine tenths of the time I could say the same thing without knowing who that student is and be right. So, I finally have had the conversation changed to: he seems to have a processing disorder... or does not comprehend, or he is not fluent in reading, or he doesn't understand the procedure for factoring. So, I'm really trying to retrain teachers to think in terms of what the educational... deficit might be. Or, is it the program? It doesn't have to be the student. Is it the program?
The principal also indicated that individual student data is discussed during instructional support team meetings and utilized in creating behavioral plans for students or groups of students:

We also have the IST team, where a teacher can recommend a student to the IST team, where they look at that student's history to find out what the problems are
with their achievement. Is it emotional? Was this neurological? What's going on with that kid? Is it... dysfunctional family life? There are many things other than the ability, because most of the kids... are capable, even most of the kids who don't achieve are capable of achieving. So, there are other things that are in their life. So, we look at that.

**Subsidiary Question Two**

The second subsidiary question was: What difficulties are encountered in using this data?

In an attempt to gain answers to that question, teachers were asked two questions: Which data is accessible to you? What types of data do you think would be useful, but you do not have access to?

**Survey question 2. Which of the above data is most accessible to you?**

In their responses to this question, more than 50% of the respondents indicated that attendance records, informal observations, standardized assessment scores, internal assessment results, information from previous teachers, and discipline records were accessible. With the exception of informal observations, more elementary teachers felt the above data was accessible than did their middle and high school counterparts. Less than 50% of the respondents indicated that discipline records, health records, district-wide, county-wide, or state-wide statistics and performance indicators, and demographic records were accessible.
### Table 5

**Type of Data Accessible to Teachers**

<table>
<thead>
<tr>
<th>Data type</th>
<th>Percent of teachers using type of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance records</td>
<td>88</td>
</tr>
<tr>
<td>Informal observations</td>
<td>64</td>
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<tr>
<td>Standardized assessment scores</td>
<td>58</td>
</tr>
<tr>
<td>Internal assessment results</td>
<td>55</td>
</tr>
<tr>
<td>Information from previous teachers</td>
<td>52</td>
</tr>
<tr>
<td>Discipline records</td>
<td>48</td>
</tr>
<tr>
<td>Health records</td>
<td>48</td>
</tr>
<tr>
<td>District-wide statistics &amp; performance indicators</td>
<td>39</td>
</tr>
<tr>
<td>State-wide statistics &amp; performance indicators</td>
<td>33</td>
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<tr>
<td>Demographic records</td>
<td>30</td>
</tr>
<tr>
<td>County-wide statistics &amp; performance indicators</td>
<td>18</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
</tr>
</tbody>
</table>

*Note. * IEPs, Student file
Survey question 3. What types of data do you think would be useful, but you do not have access to?

In answering this question, more than half of the teachers who responded to the survey did not denote need for data they did not have access to. The respondents who indicated a need for additional data cited preschool records, medical records as they pertained to the student's situation in school, for students who recently transferred into the district, complete records from previous school(s); detailed discipline records; records regarding health issues, psychological issues, and mental stability; information regarding home environment; number of times students have failed courses in which they were currently enrolled; for non-ESL students, if English was a second language; assessments from earlier grades; and written teacher assessments and observations of students.
Figure 2. Type of data accessible to teachers.
Subsidiary Question Three

The third subsidiary question was: How are these difficulties managed? In gaining answers to this question, the focus was on the principals' leadership practices that supported teacher use of data.

The principals were asked to provide insight into processes that encourage teacher use of data and comment on training or professional development designed to help teachers in the use of available data.

Interview question 7. Are teachers encouraged to use available data in informing instructional strategies? If so, what type of training or professional development designed to help them in the use of data is provided?

All principals pointed to the collaborative culture that encourages use of available data in informing decision-making at grade level meetings, team meetings, department meetings, and faculty meetings, as well as informal conversations.

The principal of School A acknowledged that teachers use data for planning during grade level meetings but pointed out that the extent of use varies. "Some are very connected and collaborative... and others are more loose." She indicated that there has been in-house training regarding the use of data, but that she would like to see more professional development that would bring the entire district staff together.

I would like to see district training, so that... sometimes when there is a district effort with training, they know people in other schools, they know ok, this is the push, and it's the training to use the data; not just, ok, let's look at the scores... It's the training... how they can make it user-friendly, very quickly, and use it to drive their instruction. So, we have that building training in use of data, but I wouldn't
say that it's training in [data] use...professional development to me is a bigger picture that we are all involved in, this professional development of using data to drive instruction. I think there should be more of that.

The principal of School D also emphasized the role of the reading teacher as a central component in the effort to help teachers analyze data and utilize the results effectively. Her school also maintains a progress chart for each student which encourages teachers to utilize the available data to support their students.

The principal of School C indicated that the district encourages teachers to use data to inform their instruction and has provided extensive training in data analysis to inform instruction and plan teaching strategies. At the school level, teachers work with administrators and department chairs to analyze available student data in terms of error analysis and mastery of specific skills and concepts. "Teachers," she pointed out, "are more comfortable discussing data because there has been so much professional development, workshops, training, online seminars, and conferences that have given them the opportunity to understand that the data is information that informs how they teach."

The principal of School B indicated that a large component of the information provided by the district is mostly summative and there is a need within the school for "local data." Department chairs have received training in error analysis, and a great deal of informal conversation takes place among teachers regarding the use of data. Several teachers have taken an active role in using available data in a purposeful manner, and she hoped that these teacher leaders would eventually lead the rest of the staff to embrace the use of data as a central component in their efforts to improve student achievement. She explained:
There is... protocol that does that, where a teacher will come in a group of his or her colleagues, and, when in a lesson planning session, go around the table... what's good about, or I don't understand what you are trying to do with this kind of thing... Is there informal discussions among teachers? Absolutely... in the teacher prep room. I think there's a lot of informal discussions about that, you know, so and so isn't doing well, how is he doing in... but nothing formalized and I think, unfortunately, when it's only an informal conversation like that... the tracking of that gets lost. So, it's hard to pinpoint to results... I think we need to do more of that. Some teachers do surveys... to find out about data about their kids... and they do it every year. What are their likes and dislikes, they have the parents so some things as well. Again this is not all, probably just a few do that. But, you know, it starts with a few and maybe eventually... We know that it all starts with the informal teacher leaders and if you don't have teacher leaders, you don't have anything.

In terms of professional development, the principal pointed to Board of Cooperative Educational Services conferences for staff.

**Subsidiary Question Four**

The fourth subsidiary question was: What strategies are in place that facilitate the use of data to inform decision-making regarding curriculum and instruction?

In an attempt to gain answers to this question, teachers were asked to respond to three survey questions, while principals were asked to respond to one interview question.
Survey question 4. Do you discuss individual student work at faculty, departmental, or grade level meetings? If yes, describe the type of work and your reasons for discussion.

More than half of the teachers indicated that they discuss students at faculty, department, or grade level meetings. Respondents in the elementary schools indicated that they discussed individual student work mostly at grade level meetings. The purposes of discussion included: dialogue about students experiencing behavioral, academic, or emotional problems; finding ways to meet the needs of all students academically and behaviorally; determining patterns in student behavior, ability, responsibility, and homework completion; finding ways to improve student reading and writing; focusing on writing skills; comparing various student groups within same grade level; and setting goals for writers' workshop. Respondents at the middle and high school identified daily meetings with guidance counselors, monthly department meetings and informal meetings with other teachers as forums for student discussion. The purposes of discussion included: dialogue concerning student strengths and weaknesses, discussion of student performance on tests before summative tests, student reactions to curriculum, writing folders and homework to assess literacy issues, and student behavioral patterns.

Survey question 5. Do you discuss individual student work in any other type of professional forum? If yes, describe the forum, type of work discussed, and the reasons for discussion.

Approximately one half of the respondents indicated that they discussed student work in other types of professional forums. These forums were identified by teachers in the elementary schools as: intervention meetings to determine if services were needed or
available for individual students; instructional support team meetings focusing on meeting the needs of students, teachers, and parents; district grade level meetings focusing on meeting curriculum benchmarks; and discussions of the district writing program and its successful implementation for all students. Teachers in the middle and high schools pointed to meeting with guidance counselors regarding individual students; parent meetings or meetings with administration; district professional conferences; informal meetings with colleagues, to gain insight into students' skill levels; post-observation meetings with administration; and informal meetings with special education teachers and/or teacher aides as additional forums for discussing student work.

Survey question 6. By what data or other means does the school measure academic growth? Is that a school-level or district-level decision?

Responses to this question varied among the elementary school teachers and teachers in the middle and high schools. More than half of the respondents in the elementary schools cited the following: district-wide K-5 assessments; observations, both a district-level and school-level decision; reading tests, a district decision; Kindergarten Literacy Assessment, a district-wide decision; and Primary Literacy Assessment, also a district-wide decision. Teachers in the middle and high schools cited the following: state assessments; district-wide standardized tests; school-wide reading and writing portfolios; school-wide open enrollment in honors level courses; and test grades, participation, quizzes, projects, and homework.

Interview question 9. Are there policies or guidelines in place that outline how administrators and teachers should use data? If so, please describe them.
All four principals indicated that there were no formal district policies or guidelines regarding teacher use of data.

The principal of School A responded:

No policies. In terms of guidelines, the district has provided ample training and opportunity to enhance our knowledge and level of comfort with data and data analysis. They have been disaggregating the data and making it available for access during school grade level or any other type of meetings.

Unfortunately, availability of time to utilize all this is still an issue.

The principal of School D indicated that she attended several workshops that provided guidance in using data and was able to utilize learned information in faculty meetings.

The principal of School B also pointed out the presence of informal "guidelines along with the encouragement to use the data to make decisions regarding individual students."

The principal of School C indicated that while there are no district policies regarding the use of data, there are district policies that hold the school accountable for adhering to NCLB requirements regarding student support and mastery of standards. She stated:

The guidelines that come from the district are in terms of ideas and strategies regarding the use of data in planning instruction and implementing programs. In terms of us as administrators, we are held accountable for knowing about our school, knowing individual students as well as groups of students, subgroups of students, and whether or not they are meeting mastery, because that really
determines how we use our resources -- whether financial, personnel, materials -- how we develop programs, how our schedule looks, how our kids are placed in the morning versus the afternoon. I mean, all of those decisions are based on what we know about the school. So, I think it's, if not a definite mandate that's written about, I think it's such a clear expectation that any administrator or teacher knows that what we do is based on real information and what's available to us.

Research Question Two

The second research question was designed to provide insights into leadership practices that create a culture conducive to the purposeful and effective use of data. The second research question was: How do leadership practices support the use of data for improvement of student performance?

The four subsidiary questions were:

What relationships, if any, exist between leadership practices and using data to inform decision-making?

What relationships, if any, exist between leadership practices and shared vision for continuous student achievement?

What relationships, if any, exist between leadership practices and shared leadership for reaching mandated standards?

What relationships, if any, exist between leadership practices and leadership for change and improvement?
Subsidiary Question One

In obtaining answers to the first subsidiary question, teachers were asked to respond to one survey question probing their view of leadership practices as they pertained to school goals, while principals were asked four interview questions.

Survey question 7. Does your school set clearly defined organizational goals intended to guide instruction? If yes, how does your school determine these goals and how is information regarding these goals disseminated?

More than half of the respondents indicated that they believed that their school sets clearly defined organizational goals intended to guide instruction. In response to the determination and dissemination of these goals, teachers in the elementary schools indicated the following: curriculum based goals and grade level goals are disseminated to teachers in curriculum guises, grade level meetings, and curriculum meetings; state standards are disseminated to teachers by district administration and school committees are formed to work on enhancing the standards; goals are discussed between teachers and administration during pre- and post-observation formal conferences as well as informal conversations; and the district uses Charlotte Danielson’s Enhancing Professional Practice -- A Framework for Teaching to aid staff in setting goals. Teachers in the middle and high schools pointed to the following: New York State Curriculum and results of previous year’s assessments disseminated at faculty meetings; school mission statement; faculty and department meetings that determine scope and sequence of curriculum to enhance student success; district-based broad goals for all schools and levels adapted to each school, then further narrowed down during department meetings.
and aligned with learning standards and current student performance data, use of
Charlotte Danielson's *Enhancing Professional Practice — A Framework for Teaching* to
set school-wide and individual goals.

*Interview question 1. How is individual student growth measured in your school?*

*By whom?*

The responses of all principals indicated that individual student growth is
measured by teachers by internal, as well as standardized, assessments.

The principal of School A indicated that the school's reading teacher/staff
developer is instrumental in helping teachers review the existing student assessments,
district-based or school-based, to determine what they reveal about students and plan
appropriate instructional strategies. She also pointed to the instructional support team
(IST) as integral in measuring student growth. The IST, which consists of the principal,
psychologist, speech therapist, special education teachers, and classroom teachers,
routinely reviews the past history of particular students in terms of performance,
strengths and weaknesses. She stated:

We really started measuring student growth based on response interventions...So,
we do a lot with individuals in response and intervention and we found out more
about children than we ever knew. Children that were flat line, children
that...really can learn. What made them learn? Are the graphs going up...are the
graphs going down? I think response intervention is tough, but when you put it
together for individual students that are struggling...that really helps measure
individual student growths.
The principal of School D pointed to the role of assessments as a diagnostic tool to identify student needs and the utilization of student observations to provide insight into students' social and emotional growth. She also indicated that the school worked as a team in assessing students, their growth, and needs. She felt that the school psychologist and social worker were essential members of that team. She affirmed:

"It's really a team approach. It's not any one individual. We look at the kids, where they are... and we assess as we go along... so it's ongoing. Assessment is ongoing... we determine what it is the kids' needs are, and, to provide more information for us to better be able to meet their needs and inform our instruction and curriculum, we then assess to get that additional information; and we all put our heads together as a team to do that."

The principal of School B pointed to the state assessments required for students and student report cards as a means of measuring and formally recording individual student progress. She identified individual teachers, administration, instructional support teams, Committee for Special Education (CSE) teams, and parents as being instrumental in monitoring student growth. She felt, however, that state tests were not a good measure of individual student growth because they were summative and given at the end of a course or year. In response to this, she is currently in the process of implementing school-wide assessments that will provide meaningful insight into students' learning needs. She stated:

"My feeling is that the only way that classroom teachers could really be involved in the personal growth of their students is to decide as a group... What is it that you want these kids to know by November? And... devise an assessment... My
feeling is that assessment is instruction and what I tell the chairs is that while all
tests might be assessments, not all assessments are tests.”

She also maintains a database of all students who receive academic intervention services
and monitors their progress over time. She indicated that she relies on department chairs
to support the teachers in monitoring student progress in their respective disciplines and
utilizes the instructional support team to a great extent. She described monitoring student
growth as an ongoing process that involves assessing student needs continuously and
making changes in interventions and instructional practices.

The principal of School C also pointed to teachers as the primary agent in
measuring student growth, particularly through the use of state assessments in English
Language Arts, mathematics and other subjects, as well as “mostly teacher-designed
instruments that help teachers measure individual student growth from either day to day
or unit of study to unit of study.” These included homework, oral presentations, and tests
at the end of chapters or units. She also identified student report cards as a way of
measuring and formally recording student growth, but she also cited “a combination of
teacher observations [and] developmental pieces that teachers and guidance counselors
also observe and assess,” as additional factors that serve to measure social, physical, and
emotional student growth.

*Interview question 5. What role does data play in your daily decision-making?*

All principals indicated that data plays a major role in their daily decision-
making. This does not just include assessment data, but several other types of data that
shed light onto student achievement.
The principal of School A identified discipline data, parental input, and informal teacher observations, in addition to assessment data, as integral components of her daily decision-making. With the help of the instructional support team, she engages in error analysis of assessment data and uses and shares the results with the staff continuously. She indicated that she is leading the effort to look closely at subgroups or individual children who are not performing and use the available data to chart a course of instruction for them:

"I think we've done a better job, especially again in the instructional support team, of looking at various types of data on the children. And not just: 'are they struggling with this?' Ok, let's pass that or work on a skill. But, we are looking at the whole child and focusing on specific area skill."

The principal of School D specified that, while she uses all available student and teacher data in her daily decision-making, when she looks at assessment data, she focuses on root causes.

"[T]est data -- once we analyze that...if I determine, for example, that for a particular teacher the children did very well in the main idea of the question and for another teacher her students didn't do as well, then is it a question of what could have caused that? Is it because that skill was not taught? Is it because the strategies that the teacher used were not as effective as this other teacher's?"

She also cited attendance records and disciplinary data as two specific types of data that she looks upon continuously. Generally, she said of data, "you use it...depending on what it is, to address the issues that you have identified 'improvement needed.'"
The principal of School B indicated that she uses the school's management system, SASI, to perform queries that give her the information that she needs to make decisions regarding individual students with difficulties and determine a course of action that will allow them to be successful in completing their studies at the school. She also occasionally uses SASI to inform her decisions regarding student placement. This principal also pointed to using disciplinary data as well as personal and often informal data about a student in an effort to obtain a better picture of who that student is.

The principal of school C also identified, in addition to assessment data, attendance records, data regarding teachers such as attendance and retirement dates, data regarding the number of students receiving special services and the type of service, and teacher input regarding students in danger of not meeting standards on the upcoming state assessments as integral components of her daily decision-making. She stated:

"All of the data that we have available to us plays a part in how we make decisions; and the information we have is not just about students, it's about teachers, it's about support staff, it's about parents, about incidents; it's about community information. So, I think...that's our main responsibility...to be very updated in terms of the information that exists about our school and all of the stakeholders."

*Interview question 6. How is available data disseminated among the staff?*

The principals indicated that assessment data is currently more accessible as a result of efforts by the state to make it available to schools in a timely manner.

The two elementary principals indicated that data is primarily disseminated by school leadership in group meetings. The principal of School A indicated that as soon as
assessment data becomes available from the state, the school leaders have access to it. She affirmed that she is very active in its effective dissemination: "I get it individually, go to the staff meetings, discuss it more, and then bring it back to grade level meetings." She also indicated that available student data is discussed with teachers in terms of how it connects to their goals. "I want them to look at everything that's impacting their child, their children in the day, so while there is a lot of conversation about it, I don't separate it from their evaluation, even though it's only separated somewhat... because it has to be connected..." she noted.

The principal of School D also indicated that data is disseminated to teachers in faculty and team meetings, during which data analysis, active dialogue, brainstorming, and sharing of ideas and strategies are encouraged.

We also have team meetings, that's another good way that we have... we sit and analyze data. [We] have progress charts for every kid so for example every quarter they do the formal or informal type of assessments and they have to come and use the portfolio. They try to identify the concepts and skills that they are weak in. So, let's say you have three students and... I started to do that because I realized when they would come to me they would say 'well the child has poor reading skills... his reading skills are very low-they are below level.' What does that really mean? Let us analyze this. Does the child have good decoding skills? Yes, but when it comes to comprehension... we break down comprehension because you have the main idea, you have supporting ideas, may be there are inferences, and so on and so forth. So the goal is to get it to be more specific. And every week we look at that; when they come in, I want to see that there is
some progress; so if a child has three different post its on the three different scales of concepts, at least at the end of 6 weeks you can say well, I worked specifically on that skill with the child and I have done my post test, and now I think that child has gotten it; and now you remove that post it - now there might be two other post it's left... so you then have to again provide instruction to address for just those and then eventually they will all be out. So that's one way we try to make sure that we did not lose any child.

The principal pointed to the use of a weekly informational memo to the teachers as well as progress charts that are utilized for all students and updated continuously for use by all staff working with that particular student.

The principal of School C indicated that all teachers have access to individual student information and school-wide and grade-level data, as it appears on the state report card. She also pointed to school leadership as the primary agent of dissemination of available data and results of data analysis conducted by district-level staff. She asserted: "All the information is disseminated at the district level directly to teachers, but through us as administrators... being able to explain it, work with it, determine implications from it, and help teachers to analyze it so they can design instruction."

The principal of School B indicated that while teachers have easy access to SASI which gives them information such as report cards, progress reports, and discipline and attendance records, they make their own decision whether to utilize the system or not:

All teachers... have SASI available to them for their students. So, they can look at their students' report cards, they can look at their students' progress reports, they can look at their students' discipline and attendance. [A] teacher could
discover for themselves, because so often a student does well in one class and has all kinds of trouble in another.

She also spoke of worksheets within the building that would bring teachers together to discuss students. Her goal is to implement a program that will bring teachers together to look at data on students and look for patterns and ways of addressing their needs or deficiencies.

One of the things that I want to do with ... the faculty is ... develop protocol where we have groups, threes ... teachers. ... work on this book. ... So, I'm going to have the teachers do an article ... and this is getting data in a way ... talking about data on kids. There's a chapter on role models and emotional resource, so that they get to understand what it is that they have to do to establish relationships with kids who seem to give them a hard time in the classroom ... to understand why that kid is maybe doing things the way they are doing.

Interview question 10. What skills do you feel are important in analyzing school data? Identify those skills for which you feel strong.

Skills identified by the principals as important in analyzing school data ranged from ease with current technology, to the ability to understand people and cultures, to specific skills regarding error analysis and interpretation of results.

The principal of School A cited the following skills: ability to understand people, schools, and school culture; a good basic understanding of mathematics and statistics; understanding classroom practices and instruction; understanding the connection of data to instruction. She stated:
I think you have to understand schools and school culture; I think you have to understand mathematics and statistics; I think you have to understand the connection to instruction; ... looking at what is happening on assessments; what’s happening with your students; knowing the students individually; knowing the classes; it’s really an understanding of human... the teachers and that human piece, but also the mathematical piece. I feel...stronger in understanding people, and understanding what’s going on in the classroom and the instruction, than I do in the data. I feel better; every year, I feel better in understanding the data. Of course, there’s new tests, and tests change, and there’s connections with what informal assessments do we need to connect with that; that’s a growth process every year. I feel that, once the data is pulled out for me, I can analyze it, that’s why I’m so excited about what’s happening this year, because it’s pulled out so much more clearly and then I can...I always have the aha’s and can connect it to the classroom.

The principal of School D also cited ease with data as an asset. She outlined the following skills as important in her leadership role: the ability to analyze data and determine the most important questions on a test, the ability to identify patterns in a test as well as in student answers, and the ability to determine the thought processes of students in choosing specific answers. She stated:

[T]here are a lot of skills that you need because it’s not just looking at how many items the students got right on the test. You have to be able to determine which are the most important skills and concepts that the children...got right and the ones that they didn’t. And I am saying that because there are some questions on
the state test that are rated to discriminate between the fours and the threes, and, is
that a question that the test developer expected everyone to get right? And having
identified that, then you know that you don’t need to focus a lot of your energies
on that one or two questions but rather you have to look at patterns. You also
have to be able to determine why you think the child chose one answer and not
the other, and, is it because the child really did not understand the other question?
The vocabulary? So, you really have to be able to distinguish...these things.

The principal of School C pointed to the ability to utilize existing technology and
disaggregate data to discern information about subgroups that is not readily available
when looking at all available data. “...the ability to take that big picture of data and really
break it down into its components and then again putting it back together to create the big
picture...for staff and for students to let them know that what we are doing is purposeful,
meaningful, and addressing a particular need.” She also cited the ability to communicate
the numbers, percentages, and graphs in a clear manner to teachers and parents, so that
they could understand what it means for their instruction and children, respectively. “I
think the administrator has to have that skill of communicating data in layman’s terms, or
terms that are common language for everybody,” she asserted.

The principal of School B pointed to the ability to design queries, using the
school’s database, that would provide specific student information and the ability to
“...some of the data [she gets] to make it answer [her] own questions.” She felt that
her ability to detect trends in the school by looking at available data and through informal
observations and dialogue was essential to effective leadership:
I just ran a report recently to find out how many students were suspended over the last 2 or 3 years for use, possession, or sale of alcohol and drugs and what's happening. And I saw a jump from two kids in one year to 11 another. And what do we do with that? How does that prompt us in a direction?

**Subsidiary Question Two**

The second subsidiary question was: What relationships, if any, exist between leadership practices and shared vision for continuous student achievement?

In order to gain answers to this question, teachers were asked to respond to one survey question and principals were asked two questions.

Survey question 8. **Do you attempt to further the school goals in your day-to-day work? If so, describe how.**

The majority of the respondents, about 80%, indicated that they attempt to further school goals in their day-to-day work. Teachers in the elementary schools cited the following ways of achieving this end: setting high expectations and standards for all students; gearing lessons towards specific goals; if certain goals are not clearly defined, creating new goals to meet state, district, and school standards; working with teams of teachers to further school goals by designing and implementing alternative assessments for some students; and using Charlotte Danielson's *Enhancing Professional Practice -- A Framework for Teaching* to derive strategies for managing student behavior, using questioning and discussion techniques, and engaging students in learning. Teachers in the middle and high schools cited: incorporating Charlotte Danielson's *Enhancing Professional Practice -- A Framework for Teaching* model into teaching methods;
utilizing rubrics; providing the highest quality of instruction that is developmentally appropriate, employing differentiated instruction, using a variety of tasks -- oral, written, aural, reading -- for each lesson; using alternate assessments; applying goals to daily lessons and instruction; going beyond the set curriculum to enhance and make subject matter relevant; using creative materials to enhance reading and writing skills and providing remedial help for weaker students; promoting academic rigor; holding students to district and school goals; helping all students reach their full potential; communicating frequently with parents; and providing better means for students and families to access programs and services offered by the district.

Interview question 2. Who determines the school's organizational goals?

Describe the process used in this determination.

All principals indicated that while there is a set of general goals set by the state and the district for each school, individual school goals are set as a result of a collaborative effort by school stakeholders.

The principal of School A pointed out that in the past, school goals were connected to district goals in terms of themes such as building school communities or multiculturalism, but not connected in terms of student data. Presently, goals are set, often informally, by the reading teacher and the grade level teachers. She emphasized that she has been working with the staff to set more formal goals based on available student data, particularly for subgroups, and results of error analyses. The principal described the process of setting school-wide goals for writing:

I sit with them individually at the beginning of the year and sit with them at the end of the year and talk to them about their improvement - the connection is to
school goals… again the first year it was very general. It's been moving on; we started talking a lot about writing. Last year we had a lot of goals in writing as a school and, to infuse that, I brought in 6+1 Traits of Writing… because we looked at the students' writing; some students were writing some students weren't. But, it was more looking at their work; it was looking at their work, not necessarily the state test scores as much… because actually the scores have done fine. Not a hundred percent of them are passing… but they had really grown in their test scores. So when we looked at their work in writing, we started really building that from this building and, as I said, I brought 6+1 Traits of Writing which they really liked… I worked with the teachers on that. They brought in different paperwork that the children did, and understood how a child in kindergarten and a child in fifth grade can talk about voice in writing; so, that to me was a school goal last year that was… throughout the building.

The principal of school D also emphasized the collaborative aspect of goal setting. Broad school goals, she indicated, are determined collaboratively by the faculty and the student council. She also has an advisory team that focuses on local and state assessments and derives areas of concern and focus for improvement for the year. She stated: "… we sit and we look at the data to determine where we should put our focus for the year, and the error analysis is one of the areas that… is top priority for us because… the information that it yields really does help us to plan and to determine what kind of staff development we need as well. So it informs our instruction; it informs our staff development needs."
The principal of School B also referred to the collaborative nature of the school goal setting process at her school. She indicated that she started with three goals of her own when she assumed leadership of the school. She presented those to the department chairs and asked them to generate three goals of their own and then relate those to the department members, who were then asked to create their own goals as they related to department and school goals, and student achievement. The overall school goals are an amalgam of all these goals, with the primary focus being student achievement.

The principal of School C cited NCLB requirements as well as state mandates as the driving force behind goal setting at the school. She indicated that she works closely with the staff, parents, and students, as well as district administration and the Board of Education, in the effort to determine the school needs in terms of meeting external demands, as well as internal needs and ways to address those needs. Individual teacher surveys designed to provide insight into students and their needs, conversations among faculty, and close examination of academic, attendance, and disciplinary data are used in a collaborative process to determine school goals. She asserts: "...it's a collaborative effort. I wouldn't say there's one person. It's teachers, parents, students, administration...I see the goals in the middle and maybe a whole series of arrows of all the different stakeholders giving us information about what should come from the center."

Interview question 7. Are teachers encouraged to use available data in informing instructional strategies? If so, what type of training or professional development designed to help them in the use of data is provided?
The elementary principals indicated that the primary venue in the use of data to inform instruction was grade level meetings, during which teachers used available data to plan units of study and instructional strategies. The middle and high school principals pointed to department chairs as the catalysts and resources for data use to inform instruction. Professional development to enhance ease of data use is available to grade level leaders and department chairs through workshops in data analysis.

The principal of School A indicated that teachers use available data at grade level meetings to plan curriculum units and instructional strategies based on what they already know about the students’ strengths and weaknesses. In discussing teachers’ use of data, she stated:

It’s through their grade level mostly; because as a grade level they talk about that and I can think of some very specific grades. It was grade four…planned units based on that, and they all do it together. Now, their lessons aren’t exactly the same, but…their units are. And it is based on data, the things that they know about children…and all grade levels do that, some more than others. Some are very connected and collaborative with each other and others are more loosely, and, when we have meetings, it’s more directed…it’s also instructional strategies, but a lot of it is looking at curriculum mapping and at their grade level, because they’ve done that and in certain subject areas, not all of them; and…the last couple of years they got a better feel of curriculum mapping and looking at their year, looking at long range planning.

The principal pointed to in-house training in the use of data as the major venue of educating the teachers regarding data, but indicated that she would like to see more
district training in data use that would bring all district staff together as well as make the available data more user-friendly in a timely manner.

The principal of School D also affirmed that teachers engage in data analysis during team meetings and faculty meetings: "...in our team meetings...we brainstorm strategies that are addressing the needs identified as a result of analyzing the data." The principal pointed to the use of a progress chart for each student which is continuously updated as a way of keeping track of student progress. Furthermore, she acknowledged the role of the reading teachers as a central component in helping teachers analyze and utilize available data.

The principal of School C indicated that the district encourages teachers to use data to inform their instruction and has provided extensive training in data analysis to inform instruction and plan teaching strategies. At the school level, she pointed out, teachers work with administrators and department chairs to analyze available student data in terms of error analysis and mastery of specific skills and concepts. She stated: "Teachers are more comfortable discussing data because there has been so much professional development, workshops, training, online seminars, and conferences that have given them the opportunity to understand that the data is information that informs how they teach."

The principal of School B emphasized differentiating instruction and creation of behavioral plans as two applications of data use. She indicated that department chairs receive training in error analysis for questions on state tests:

We had a workshop for my department chairmen on error analysis, and that's looking at maybe 4 years of a Regents, breaking down to the different
performance standards, finding out what is a high frequency question, and matching high frequency high errors, high frequency low errors, low frequency high errors, and what do we do about that... it also has the teachers then examine the question itself, may be it was a bad question, maybe it was a vocabulary issue, why did the kid get it wrong, were two questions exactly the same, is it confusing?

The principal also pointed to informal conversations regarding available student data. She acknowledged that some teachers have taken an active role in this process and expressed hope that the trend would expand from the teacher leaders to the majority of the staff. She also felt that much of the available data provided by the state and the district thus far has been summative and emphasized the need for local data.

Subsidiary Question Three

The third subsidiary question was: What relationships, if any, exist between leadership practices and shared leadership for reaching mandated standards? To gain insight into teachers’ views regarding leadership practices at their particular school as they relate to shared leadership for reaching mandated standards, teachers were asked to respond to one survey question. Principals were asked two interview questions regarding their views on teacher accountability.

Survey question 10. How do state-imposed standards affect your feeling of accountability?

Several respondents viewed the state-imposed standards as a guide to instruction and used them to set teaching goals and assess student learning. Many of them indicated
that they went beyond the required standards and set higher expectations for their students. The majority of the respondents felt that even though they were held accountable, standards did not affect their teaching in a negative manner, but rather helped them guide instruction. A few, however, indicated that if was often difficult to follow the standards for students in special situations or with special learning problems. Additionally, some respondents indicated that state assessments based on mandated standards were not designed well and put pressure on teachers to produce passing student scores on state exams.

Some representative answers among the elementary survey respondents include: “I am aware of [the standards] and I plan accordingly”; “Standards guide my teaching and I feel accountable for helping my students reach these goals. However, there is more to an education than what is measured and set by standards”; “There is accountability, however, in the primary grades the pressure is much less”; “The testing is statistically inaccurate. To test a child on a test (different each year) as compared to another child (and a different test) and to say the scores have changed is statistically incorrect. If you want to measure student growth, children should be tested for growth based on their level the year before.”

Answers from middle and high school respondents included: “[Standards] are imposed for a reason. As an educator, I respect those reasons so long as the teaching continues to motivate students with external learning opportunities. Otherwise, it is just drill work for higher test results”; “Puts all teachers on same page with same goals. However, difficult to do because students are below grade level or different academic needs”; “It makes me feel I have to get the students to pass and there is pressure to get a
high passing rate”; “Each student achieves at a different level. They should all not be made to achieve at the same level in the same time frame”; “I feel that I am teaching for the Regents rather than for the sake of the students. It is a rush to complete material that will be found on the Regents.”

Interview question 3. Are teachers held accountable to school goals? If so, how is their accountability determined?

Principals’ answers pointed to accountability that stems from state and district mandates, as well as a culture of collaboration, continuous dialogue and support, high expectations regarding student achievement, and teacher commitment to student achievement.

The principal of School A stated that teachers discuss their own professional goals and the connection between these goals and school goals, as well as a professional improvement plan when conferring with her in the beginning and end of the year. She emphasized that teachers are accountable not because she tells them accountable, but because they personally set their own goals, and they feel personally accountable to their goals and their colleagues due to the level of collaboration present in school and the grade level connection. She asserted

They are accountable because they had to do it, but not because I said they had to do it... It was like we all have to do this, and they all agreed; they agreed that this was important... accountable through their conversation and to themselves... collaboration helped them become accountable.

The principal of School D indicated that as a school leader she follows a collaborative approach in terms of teacher accountability. She uses formal and informal
observations to determine whether the teachers hold high expectations for their students and communicate them effectively. She also utilizes teacher-designed assessments administered to students to ensure the high quality of education and expectations. She pointed out that the process entails ongoing conversation, support, and guidance for those teachers who need it: "I do hold them accountable, and, they will tell you, I do not let up, and I would question, and I would probe, and I would ask them: how do you think the child itself finds x, y, z... And it’s constant, and we are working on that."

The principal of School B indicated that the teachers are asked at the end of each year to reflect on the goals they had set for themselves at the onset of the year, and how they have met them. This has been an informal process: "...in the past... I’ve asked them how do you feel about your goals and which goals you think you’ve met, that is basically it. So, it was never anything that went down in writing, it was really just to have them aware that they should have some goals." Recently, she pointed out, teachers have been asked to use the Charlotte Danielson model, which asks them to determine smart goals and assess themselves in terms of how they have met these goals.

The principal of School C acknowledged that teachers are held accountable for implementing district-wide and school-wide initiatives and curriculum units of study in ways that allow students to meet with success and achieve the standards set for them. She stated:

Their accountability is usually based on observations of classroom practice; administrators going in and providing teachers with the opportunity to demonstrate their expertise and then administrators giving feedback about whether or not what they are doing in their practice is actually aligned to their
goals. And that’s recollected at the end of the year evaluation, where they receive...a final...summary of their practice regarding whether or not they met expectations, exceeded them, or did not meet them. And then, that document becomes part of their personnel file, which does indicate that they are held accountable for achieving certain levels of practice.

Interview question 4. Do teachers feel personally accountable to school goals?

Three of the four principal interviewed indicated that teachers felt personally accountable to school goals.

The principal of School A pointed to grade level meetings and the high level of collaboration present in school as the primary factors resulting in the teachers’ feelings of personal accountability. “They feel personally accountable to school goals because of that grade level connection; they feel very strongly and they are very collaborative here,” she stated.

The principal of School D also confirmed that teachers at that particular school felt accountable: “I think all of them do in varying degrees...the bottom line is we are here for the kids and we want the kids to do well...some teachers will go the extra mile and they will do what it takes.”

The principal of School C stated: “...teachers do feel personally accountable...And that’s just demonstrated in their practice, in their meeting together, collaborating to meet students’ needs, asking questions, meeting with the parents, identifying students at risk. So, I do feel that there is a personal accountability that helps them to invest in that planning.”
The principal of School B hesitated for a few moments before she answered: "I think the answer... unfortunately is no, and probably I have not done a good enough job in getting it out there. I don't think that I have. And my goal this year has been to do a better job at that and make them feel personally responsible."

**Subsidiary Question Four**

The fourth subsidiary question was: What relationships, if any, exist between leadership practices and leadership for change and improvement?

To gain insight into the teachers' role in leadership for change and improvement, teachers were asked to respond to one survey question and principals were asked one interview question.

**Survey question 9. Do you personally feel accountable for the achievement and furtherance of school goals? If yes, to whom do you feel accountable?**

About 75% of the respondents indicated that they felt personally accountable for the achievement and furtherance of school goals. Almost all those who answered yes felt accountable to themselves and the students. Respondents also indicated that they felt accountable to the school or the district, colleagues, and a small number felt accountability to NCLB.

**Interview question 11. As a school leader, what facets of your school's use of data are most effective? Which facets would you like to change or improve?**

When asked an earlier question: "What skills do you feel are important in analyzing school data? Identify those skills for which you feel strong," the principals indicated that the basic skills necessary to provide guidance and support in the use of
data to inform instruction included: the ability to understand people, schools, and school culture; a good basic understanding of mathematics and statistics; understanding classroom practices and instruction; understanding the connection of data to instruction; ease with existing technology; the ability to design queries that provide specific student information; and the ability to disaggregate data to discern information about subgroups that is not readily available when looking at the big picture. While responses to this question, analyzed earlier, provided insight into the skills that the principals felt were an essential component of leadership, interview question 11 shed additional light onto principal practices and efforts that lead to change and improvement of a school.

The principals' responses to this question varied. The middle and high school principals felt that while the data and resources were available to teachers, they were not being utilized enough. The elementary principals focused on specific courses of action that would bring additional improvements to the already thoughtful use of data in their schools.

The principal of School A indicated that the school engages in the thoughtful use of data and error analysis for English Language Arts and mathematics, but is not doing enough in social studies and science. She affirmed that grade level and team meetings are very helpful in the use of data to guide instructional decisions and pointed out that increasing numbers of teachers are seeing the need for the meaningful use of data. She also felt that there is a need to take a closer look at measurement of cohort groups, something that is not done thoroughly at present. The principal also cited the following aspects of the school's use of data that she would like to improve: provide support and training that will encourage the growth of teacher leaders in different areas of expertise,
who can then serve as a resource for others; guide the site-based team towards becoming
a more integral force in data analysis of student assessments; increase the association
between district, site-based and building grade level groups, in order to promote working
together to align K - 12 curriculum and coordinate goals and interventions. “What would
I like to change and improve?” she asked. Her answer was:

Making the connections between all the groups, district, site-based, even in
building between grade levels...there needs to be more connection of that
alignment- alignment K - 12....Talk about the skills and how to
do...intervention....[My] belief is that there has to be a K - 12 connection...I’ve
been at conversations with the middle school and the high school and, wow you
do that? And they came down here and saw a lesson and were: ‘You do that
here? We didn’t think you did it at all’...[U]nderstanding each other’s
assessments, because I think kindergarten teachers should see English Language
Arts Regents. Where are our children going? Let’s look at that big picture...what
parts...so, if we are doing critical analysis or we are doing questioning
techniques...what does that look like in kindergarten? How can we get
kindergarteners to be good questioners, even of each other? Is that possible? The
answer was: ‘yes, but how do we do that?’ And it’s definitely possible; so you
break it down, you just break it down. They need to do that when they leave here
with communication skills, in groups, teamwork. So, in 12th grade they need to
do it; so, what does it look like at every grade level and break it down, and how
the sixth grade teachers understand what the fifth grade teachers are doing even
though we are in a different school and vice versa. So, I would like to improve
the connections between all the groups instead of just this group is working on this and this group is working on that. I do that, somewhat but my effort is to make that happen throughout, so, we do all have common general goals and then building specific connected to it, level specific connected to it, and individual child. And that’s what I hope to accomplish some day; and with people.

Teachers are very collaborative; I mean they do understand when you take the time and they do want to do when you take the time. But the more they see the connection, the more I help them; we’ll get there. Because, I think our goal is to help all children and each child and... the data can help us get there in a good way.

The principal of School D pointed to the school’s effective use of data as a result of the joint effort by the teachers, the reading teacher, and the principal, as well as brainstorming strategies, ideas, and approaches unique to the school and its particular needs that result from that process. Improvements she would like to see include: the ability to analyze assessment data while the student is still in that particular class, and more teachers “who are sluggish in their use of data” moving faster towards the effective and thoughtful use of data to inform their instruction.

The principal of School B stated that the school has access to the data and resources necessary to identify and address student needs and that it is up to the teachers to utilize them. She stated:

Even though this district has been very, very good in providing the volume with data that has become key in the decision-making process, it will not happen unless the teachers believe. And the only way the teachers believe is by the conversations they have - because it’s the conversations that are important. The
conversations about a student; not the conversations about seventy-nine percent of... students.

The principal of School C also cited easy access to data and resources available to teachers. She commented:

We understand the data but we need to improve the way we use it to improve student achievement. I think it’s about being strategic... I think people are understanding the data. I think that they are able to understand it... It’s about the implications, the strategies that we use as a school. And sometimes an individual may have a strategy that works, but it’s not necessarily a pattern throughout the building. So, I would say in my ideal perfect school, that what I would like to see improve is strategic implementation of practice to improve student involvement.
Chapter V
Conclusions and Recommendations

The educational landscape is currently facing a growing national movement to hold schools and educators accountable for student achievement. The No Child Left Behind Act is adding to that pressure at both state and local levels. Schools and educators face accountability systems based on high-stakes testing and followed by a series of consequences. Purposeful use of data not only helps comply with state and federal guidelines and requirements, but also facilitates meeting student performance goals set by external requirements by providing valuable information that educators may use to guide classroom instruction to meet student needs.

The use of data is a central aspect of school reform. Schools and educators are able to evaluate their programs and progress by collecting and analyzing data, whether it is demographic data, student learning data, perceptions data, or school processes data. Data is instrumental in helping schools create improvement plans that lead to student learning and is directly connected to systematic and systemic continuous improvement in schools (Bernhardt, 2004).

In order to create a culture that understands the value of data and embraces its meaningful use, it is necessary to establish a collaborative environment with structures that encourage teachers to engage in data use for planning instruction. A data team, which handles data collection and analysis and additional team structures that see to its dissemination and appropriate utilization, is essential in the process. Also essential in the process of effective use of data are the presence of formal protocols to educate teachers
and structured group discussions regarding the available data. Additionally, it is important to examine a wide range of data from various sources and triangulate findings to extract the best possible information (Boudett, City, & Murnane, 2006).

The planning and development of an information system that serves the particular organization's needs to start at the district level (Picciano, 2006). District administrators may facilitate the effective use of data by creating data systems that meet the needs of district personnel and external demands in terms of accountability and reporting, and also by providing the appropriate staff development and continuous support necessary to encourage the meaningful use of data by teachers in their planning and teaching (Boudett, et al., 2006).

Sharing data, developing strategies for its effective and continuous use in making instructional and organizational decisions, and creating an environment of collaboration and team work are at the heart of ongoing systemic improvement and increased student learning.

**Discussion**

The original intent of this study was to identify leadership practices that lead to the successful use of data to improve student learning. As the research progressed, the researcher realized that the meaningful use of data in school improvement is an organized effort that involves district leadership, building leadership, and shared teacher leadership. District leadership is initially responsible for establishing the processes and providing the resources and services that encourage, guide, and continuously support the use of data to drive instructional and administrative decisions. However, the school environment,
building leadership, and teacher perceptions regarding the use of data are also central factors in its effective use to improve student learning.

The progression of the research process led to the identification of a number of districts that employed effective strategies and processes in the meaningful use of data to guide decision-making. Further research with a focus on improved student performance as demonstrated in state report cards showed that the particular district presented in this study was one which utilizes a set of practices regarding data, which have been described and substantiated by the related literature examined by the researcher, that tend to lead to improvement in student learning. The study ultimately focused on a design format aimed at understanding the processes present in the organization that lead to the effective use of data to drive decision-making by school teachers and administrators.

The study was guided by two primary research questions, along with several subsidiary questions, that were designed to provide insight into the practices of the school district regarding the use of data. The questions sought to provide insight into teachers' use and views of data as it enables them to improve student achievement. They were also designed to elicit patterns regarding leadership practices that support and encourage the use of data by teachers. Answers to these questions were obtained by means of a teacher survey that was mailed to all schools in the district, in addition to interviews with principals of four of the five schools in the district - two K - 5 schools, one grades 6 - 8 school, and one high school.

The study was guided by the following research questions and subsidiary questions:
Research Question One: To what extent do school policies and procedures encourage and support teacher use of data to inform instruction and improve student learning, and the subsidiary questions:

1. How is the data used to inform decision-making regarding curriculum and instruction?
2. What difficulties are encountered in using this data?
3. How are these difficulties managed?
4. What strategies are in place that facilitate the use of data to inform decision-making regarding curriculum and instruction?

Research Question Two: How do leadership practices support the use of data for improvement of student performance, and the following subsidiary questions:

1. What relationships, if any, exist between leadership practices and using data to inform decision-making?
2. What relationships, if any, exist between leadership practices and shared vision for continuous student achievement?
3. What relationships, if any, exist between leadership practices and shared leadership for reaching mandated standards?
4. What relationships, if any, exist between leadership practices and leadership for change and improvement?

Preliminary research in district practices regarding the use of data revealed that district leadership had committed to the purposeful use of data to drive decision-making and had taken steps to establish processes and resources necessary to make data accessible and user-friendly to teachers. District leadership had also taken steps to create
an environment of professional development and support in the continuous use of data to inform instruction and curriculum planning.

A close examination of district documents, the *New York State Report Cards* for the 2002-3, 2003-4, and 2004-5 academic years, *Assessment Data for the 2004-5 School Year*, and *State of the District Report 2005-6* provided initial insight into district goals regarding student learning and the use of data. The responses to the teacher survey questions were used to identify teacher practices regarding the use of data, as well as their perceptions regarding school goals, personal accountability, and shared leadership. The principals' responses to the interview questions were used to identify leadership practices that support and encourage the use of data to guide instruction and decision-making regarding student achievement.

The analytic strategy employed by the researcher was a descriptive approach aimed at discovering existing relationships and patterns. Analysis of the data utilized pattern matching as described by Yin (2003). The teacher survey answers were analyzed for patterns that would shed light onto particular aspects of the district culture particularly those concerning the use of data, accountability, and shared decision-making. The interview questions were analyzed for patterns that would indicate particular leadership practices that support and encourage teachers' continuous and effective use of data to guide instruction and decision-making regarding student achievement.

Several methods were used in analyzing, synthesizing, summarizing, and reporting the data. Tables identifying the questions in this study, the corresponding survey and interview questions, the source and method of data collection, and the analytic technique utilized were used during the data analysis stage to identify the survey and
interview answers that related to each of the research and subsidiary questions. In tabulating certain survey responses, frequencies, expressed in percentages, were used.

Initial analysis of district documents revealed a number of findings. Preliminary analysis revealed that the elementary schools have shown a sustained increase in the number of students scoring at levels 3 or 4 in both English Language Arts and Mathematics. The middle school has shown a sustained increase in English Language Arts and an overall average increase in Mathematics over the past 3 years. The high school has shown a sustained increase in English Language Arts, but not much variation in Mathematics. In published documents, the district has proclaimed its commitment to excellence; it emphasizes critical thinking, communication, and computer ease in all curriculum areas and encourages students to become "well-rounded enthusiastic learners." Additionally, it has committed to an ongoing assessment structure and implementation of special programs that serve to monitor student needs and help all students reach their full potential.

Research Question One

To what extent do school policies and procedures encourage and support teacher use of data to inform instruction and improve student learning?

Subsidiary Question One: How is the data used to inform decision-making regarding curriculum and instruction?

District teachers indicated that they use attendance records, discipline records, internal assessment results, information from previous teachers, informal observations, standardized assessment scores, and district wide statistics and performance indicators
often or sometimes. Health records, county-wide statistics and performance indicators, state-wide statistics and performance indicators, and demographic records were used rarely or never as sources for student data.

All principals commented on the collaborative school culture which supports the use of data. The elementary principals pointed to the grade level meetings as the forum for data analysis to guide instruction and plan curriculum. They also affirmed the instrumental role of the reading teacher as the facilitator for data analysis in grade level or team meetings. At the middle and high school levels, the forum for discussions and sharing of data was frequently informal conversations which arose out of the need to discuss particular students. Two of the district schools, one K - 5 school and the middle school, maintain varying forms of student progress charts or data folios which provide continuously updated information and are perceived as a valuable resource for teachers and support staff.

Subsidiary Question Two: What difficulties are encountered in using the available data?

District teachers felt that attendance records, discipline records, health records, internal assessment results, information from previous teachers, informal observations, and standardized assessment scores were easily accessible. More than half of the respondents did not indicate the need for data they did not have access to. Those who indicated a need for additional data cited as potentially useful the records from previous schools or earlier grades, medical and psychological records, detailed discipline records, specific information regarding the home environment, and written teacher assessments and observations.
Subsidiary Question Three: How are the difficulties encountered in using available data managed?

Principals pointed to the collaborative culture that encourages use of available data in meetings as well as informal conversations. They indicated that the district has provided teachers with training in data analysis and encouraged the use of data to inform instruction and plan teaching strategies. The elementary principals pointed to the role of the reading teachers as being instrumental in data analysis and the utilization of findings. The principals of the middle and high schools indicated that department chairs were central to the process of analysis of student test data.

Subsidiary Question Four: What strategies are in place that facilitate the use of data to inform decision-making regarding curriculum and instruction?

All four principals saw the need for data analysis and the use of results in making effective decisions, and also understood the need for a collaborative culture which provides the support and resources to teachers to use data to guide their instruction. While there are no formal policies or guidelines in place, district administration has taken steps in order to make data easily accessible and has provided ample training and opportunity to increase staff comfort with the use of data and utilization of data analysis and results.

Grade level, team, departmental, or faculty meetings were identified as forums which encouraged and promoted the discussion of individual student work and utilized available student data. Other forums that fostered such discussions included intervention meetings, district grade level meetings, and several other types of informal meetings with other teachers, guidance counselors, special education teachers, teacher-aides, and
administrators. Additionally, several teachers have taken the initiative to gather information and discuss students they are concerned about, in order to create strategies to help these students.

Summary. Schmoker argues that “data should be an essential feature of how schools do business.” (Schmoker as cited in Zmuda, Kuklis & Kline, 2004). Zmuda et al. (2004) further point out that “[t]o overcome the fear of what the data will indicate and how the data will be used, staff members must collaborate in the collection and analysis so that the resulting information is trusted to be an accurate signpost of current performance” (p. 88). The school district in this study has started the process of active data use to drive decision-making at all levels by adopting processes that makes data accessible to teachers. Pointed and meaningful staff development and additional resources, such as reading teachers at the elementary level, department chairs at the middle and high schools, and collective student data documents such as data folios or student progress charts, have also been utilized in the effort to encourage the use of data by the teachers. A culture of collaboration and support fostered by district and building administration has resulted in an environment that encourages active participation by all staff in the meaningful use of data to inform and guide decisions in district schools.

Research Question Two

How do leadership practices support the use of data for improvement of student performance?
Subsidiary Question One: What relationships, if any, exist between leadership practices and using data to inform decision-making?

District teachers asserted that their school had clearly defined organizational goals intended to guide instruction. Several of those goals, which entailed meeting federal and state mandates, originated at the district level and were disseminated through curriculum guides or at grade level, faculty, and department meetings. Specific school goals were a result of a collaborative effort among teachers and administration at each particular school and include curriculum-based goals designed to improve and enhance student learning, as well as personal goals aimed at individual professional growth. Charlotte Danielson’s Enhancing Professional Practice - A Framework for Teaching has been used by the district and individual schools to set school-wide and individual goals.

Principals are an essential component of the district’s initiative to encourage teacher use of data to inform decision-making. The principals interviewed agreed that individual student growth at their school is measured by teachers through means of internal, as well as standardized, assessments. They also saw the school leaders as the primary agents in dissemination of both available data and the results of data analysis conducted by district-level or individual school staff. They asserted that data plays a major role in their daily decision-making and pointed out that their use of data does not include only assessment data, but also several other types of student information that provide a more inclusive picture of each student and offer insights when creating student improvement plans. Skills identified by the principals as important in analyzing school data ranged from ease with current technology, to the ability to understand people and school cultures, to specific skills regarding error analysis and interpretation of results.
Subsidiary Question Two: What relationships, if any, exist between leadership practices and shared vision for continuous student achievement?

Survey answers pointed to a culture that encourages teachers to work towards furthering school goals in terms of student achievement and take initiative in employing ways to achieve the overarching school goal of improving student achievement. Teachers set high expectations for their students and geared their instruction towards helping students meet those expectations. Many talked about taking the initiative to meet with other teachers to design and implement alternate assessments for certain students, and affirmed that they utilized varying teaching strategies and materials to provide support for students who needed the additional help. Teachers also pointed to expanding the current range of curriculum and using additional materials to promote academic rigor, enhance learning, and make subject matter relevant.

Principals pointed to their role in facilitating the dissemination of data and the collaborative effort to set formal school goals based on available student data. They indicated that the district has provided professional development in data analysis, which has made the staff more comfortable working with student data and using findings to make decisions regarding curriculum and instruction. While reading teachers, team leaders, and department chairs have an active role in leading the staff in this effort, several teachers have also taken an active role in the process. The school leaders make every effort to encourage staff to actively participate in the utilization of data and take initiative to support student achievement.
Subsidiary Question Three: What relationships, if any, exist between leadership practices and shared leadership for reaching mandated standards?

Several teachers felt that, though they were accountable professionally to federal and state mandates, standards impacted their teaching only by helping them guide their instruction. They used standards to set teaching goals and assess student learning. Many of the respondents indicated that they went beyond required standards and set higher expectations for their students.

The school leaders pointed to teacher accountability that stems from state and district mandates, as well as a culture of collaboration, continuous dialogue and support, high expectations regarding student achievement, and teacher commitment to student achievement. Three of the four principals indicated that, while they, as school leaders, set the expectations for professional conduct and performance, the teachers also felt personally accountable and set their own goals, both in terms of professional growth and student achievement. One of the principals believed that teachers did not feel personally accountable, but felt that she as a school leader should have done more to create an atmosphere of personal accountability. She indicated that her own professional goal was to create a culture of personal accountability and professional autonomy within the school’s professional community.

Subsidiary Question Four: What relationships, if any, exist between leadership practices and leadership for change and improvement?

In seeking answers to this question, the researcher felt that in order for change and improvement to occur within the district, teachers must assume personal accountability. In addition, principals must possess the skills to work with data effectively, as well as a
willingness and ability to assess the practices and processes currently present at their respective school and determine further needs.

Teachers who responded to the surveys indicated that they felt personally accountable for the achievement and furtherance of school goals. They felt accountable to themselves, their students, the school or district, and their colleagues. The principals felt that they possessed the basic skills necessary to provide guidance and support in the use of data to inform instruction. Skills that they considered necessary included: the ability to understand people, schools, and school culture; a good basic understanding of mathematics and statistics; understanding classroom practices and instruction; understanding the connection of data to instruction; ease with existing technology; the ability to design queries that provide specific student information; and the ability to disaggregate data to discern information about subgroups that is not readily available when looking at general state reports.

When assessing the school's use of data, the principals' responses varied. The middle and high school principals felt that, while the data and resources were available to teachers, they were not being utilized enough. The K-5 principals focused on specific courses of action that would bring additional improvements to the already thoughtful use of data in their schools.

*Summary.* In discussing a principal's behaviors that build leadership capacity, Lambert (2003) points to the following specific behaviors:

1. Engage others in forming and adhering to a shared vision of schooling
2. Design and implement multiple participation patterns and groups, such as leadership teams, action research teams, parent councils, and student focus groups

3. Facilitate conversations for others to learn and practice leadership skills

4. Invite others to participate in leadership roles and actions

5. Develop, share, and invite open information. Create information systems that cycle throughout the school community

6. Promote collective responsibility; involve others in determining criteria for success and taking responsibility for progress or lack thereof

7. Facilitate the development of internal accountability criteria and structures (p. 51).

School leadership in the district examined in this study seems to have adopted these particular behaviors in the process of creating a culture that fosters and supports the use of data to guide decision-making. The principals have created an environment that encourages collaboration and setting common goals for student achievement. While the reading teachers, team leaders, and department chairs are instrumental in data analysis and purposeful utilization of results in determining curriculum and instruction, teachers are also actively involved in the process and encouraged to assume responsibility and initiative throughout this process.
Policy Implications

Successful navigation through the accountability process requires collaboration, close monitoring, and application of several skills, including data analysis (Duke, Grogan, Tucker & Heinecke, 2003). Schools and school districts have already begun to respond to accountability and reporting demands by implementing information collection and analysis systems and processes that provide easy access to student data and enable educators to make informed decisions regarding programs and allocation of resources. However, successful implementation requires establishing a culture that promotes and encourages the use of data to guide decisions. “In a competent system, data collection and analysis function as a formative rather than a summative assessment, both in principle and in practice,” argue Zmuda et al. (2004)

“The first hurdle is to talk through the intent of the data collection process in order to debunk the myth that numbers will lead to individual witch-hunts (instead of collective accountability) and a diluted curriculum that minimizes teacher creativity and mandates teaching to the test (instead of an enriched curriculum that raises student achievement for all.) p. 104

Schools and school districts must be cognizant of teachers’ perceptions of the role of data and work to establish a culture of cooperation and support, a culture which is based on personal accountability and encourages active participation and initiative in decision-making. The collection and use of data must be guided by a shared vision, rather than a directive from district or building leadership.
Once a culture conducive to the use of data as an integral part of decision-making is established, a district must determine and implement an appropriate process in order to begin using data to guide decision-making in its schools. As has been noted earlier, most schools and school districts already have the data needed to plan necessary improvements. Streifer (2004) recommends that one of the first questions that should be asked is "what processes should the district implement to develop a culture that values and understands data as a vehicle for systemic improvement?" (p. 84). While educators may be ready to engage in the purposeful use of data to guide decisions regarding curriculum and instruction, they must clearly recognize the benefits as well as the limitations of particular types of data in guiding decisions. Increased accountability and public scrutiny, note Duke et al., (2003), have "served as a powerful impetus to staff development, professional growth, and communication among teachers" (p. 207).

Compounded with this increased accountability, the use of data necessitates carefully planned professional development aimed at providing teachers with the skills necessary to analyze and use data purposefully and with ease. Staff development must be the result of a collaborative effort and should be designed to address the particular needs and perceptions of teachers regarding the use of data. As Zmuda et al. (2004) argue,

The data inform[s] the staff about the gaps between the shared vision and the current reality so they can produce a collective mandate for change that is in alignment with their core beliefs. Because the mandate emerges from this collective analysis and because it addresses areas of concern that have been identified and quantified in the system, participants will be much more invested in the staff development plan. (p. 104)
“Principals ultimately are responsible for student progress,” argue Duke et al., (2000). Public reporting of student performance has put pressure on school leaders to take steps to sustain and ultimately improve student test results. Access to data enables them to carry out comparisons with other schools, as well as internal comparisons among teachers and programs within a particular school. “Analyzing and making sense of these data have become sensitive yet critical parts of being a responsible administrator,” they point out (p. 187). School leaders are charged with the responsibility of creating an environment that supports and fosters collaboration and encourages teacher use of data by making it easily accessible and dispelling all technical and cultural barriers that impede its use to guide instruction.

Establishing collective goals is an essential aspect of data-driven decision-making. As Marzano (2003b) points out, “setting academic goals for the school as a whole has a powerful, coalescing effect on teachers and administrators. Goals themselves lead not only to success but also to the effectiveness and cohesion of a team” (p. 35). School improvement plans, reports Schmoker, do not necessitate the use of complex data and sophisticated data analysis techniques. Schools often gather too much data, which can lead to the establishment of too many goals and extensive improvement plans that often stay unread and unused. Establishing annual goals for improving student achievement and creating a “simple template for a focused improvement plan” would provide the necessary tools for educators to establish their own improvement priorities as they align with their established goals. Instructional improvement, he argues, should not focus on the volume of available data but instead on “simple, data-driven formats - teams
identifying and addressing areas of difficulty and then developing, critiquing, testing, and upgrading efforts in light of ongoing results" (Schmoker, 2001).

**Future Studies**

This was a single case study of a small school district located in suburban New York State and focused on practices that promote the thoughtful use of data to inform decision-making. Though district leadership was responsible for the initiative and consulted on an informal basis by the researcher when gathering initial information, district leaders were not asked to participate in the study. Additionally, the response rate for teacher surveys was low, which prevented the researcher from deriving generalizations regarding the entire district teacher population or comparing practices and processes between the elementary and the middle and high schools. The study is a descriptive one that attempts to shed light onto the particular practices and processes present in the five schools of this particular school district.

While the literature review supports the observations made regarding data use in this particular district, in terms of leadership practices and processes that support teachers' use of data to inform instruction, thoughtful students of educational research realize that school environment, as well as available resources, vary widely among school districts. These two factors, coupled with factors such as size of the district, characteristics of student and teacher population, location, professional relationships with nearby higher educational institutions, community involvement, available funds and additional resources, may affect the extent to which a district employs practices and processes to use data to inform decision-making. Additional research should focus on
several of the aforementioned factors in order to determine how their presence affects the meaningful use of data to guide decision-making.

Additional research should also be conducted at the same district several years later. Future research should invite the district staff to reflect on what processes and practices have been useful and beneficial, evaluate processes and programs, and determine what changes, if any, must be made. A careful analysis of school report cards should be conducted to provide information as to whether the district is showing continuous improvement in standardized state assessments. Additional attention should focus on the role of district leadership, as well as the role of teacher leaders and the value of shared decision-making in sustaining a culture of inquiry that continuously strives for improvement in student learning and achievement.

This particular research has examined practices and processes that promote the use of data to inform decision-making. Additional research should focus on barriers that prevent teachers from using data in a meaningful manner. The myriad barriers, which may include perceptions of teachers and school leaders regarding data use, lack of databases that allow for easy access and analysis of data, or lack of professional development, often prevent schools from taking advantage of available student data to inform decisions. Future studies might focus on the effect these factors have on school improvement by means of data use and on ways to break through these barriers and effectively use data to bring about school improvement.
Conclusion

The No Child Left Behind Act of 2001, the most recent step in a growing national movement in the educational landscape to hold schools and school districts accountable for student achievement, initiated the most far-reaching changes in federal education policy since 1965's Elementary and Secondary Education Act. Now, on the eve of its reauthorization, the Act continues to provide challenges for schools and school districts by requiring that schools and school districts are held accountable for student achievement. Strict assessment guidelines, yearly assessments for students in grades 3-8, stringent graduation standards, and continued emphasis on progress of students in NCLB subgroups will continue to present a challenge for schools and school leaders.

The use of data can make a significant difference in school improvement efforts by helping schools determine how best to improve school processes and student learning. Success in utilizing data depends heavily on leadership practices that support and encourage the use of data by teachers, as well as the systems in place at each school that are designed to provide the resources, knowledge, and support necessary to use data effectively.

The aim of this study was to provide educators with an insight of processes a school district may follow in utilizing existing student data to inform decision-making regarding student performance and growth. A close look at leadership practices that encourage and support the effective use of data in schools pointed to several factors which should be taken into account by educators leading schools in the current era of NCLB and increased accountability.
Schools have specific goals for student performance that serve as a guideline for teachers and direct their efforts in the use of data to inform instruction and enhance curriculum to reach goals within the classroom as well as at the school level. The district administration provides the resources needed to support school leaders and teachers so that they may use data effectively to improve student performance. These resources include a technology department and data warehouse that makes data easily accessible to staff in a timely and user-friendly manner. Each school has individual staff or teams responsible for data analysis and dissemination of results, as well for helping teachers use data to set specific goals and inform instruction and curriculum. The district has provided focused professional development to support the use of data and has created a culture of collaboration and support, fostered by district and building administration, which has resulted in an environment that encourages active participation by all staff in the meaningful use of data to inform and guide decisions in district schools.

The use of data can have a powerful impact on school improvement and reform efforts, as well as student performance. In an age of increased accountability and public reporting, schools and school districts must create environments that encourage and support the use of data. Educators must embrace data and use it to its full extent in order to reap its full benefits.
References


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Appendix A

Teacher Survey
TEACHER SURVEY

Part I: Please provide the following information about yourself

1. Years at the school or school district
   
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th>10-15</th>
<th>More than 15</th>
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2. Years of experience as teacher
   
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>10-15</th>
<th>More than 15</th>
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</tbody>
</table>

3. Subject taught: ________________________________

4. Approximate number of students taught: ______________

Part II: This questionnaire is designed to provide insight into the use of data to inform decision-making. Please try to answer every question. Thank you.

1. Which of the data below do you most frequently use? Please check the appropriate box.

<table>
<thead>
<tr>
<th>DATA TYPE</th>
<th>USE OFTEN</th>
<th>USE SOMETIMES</th>
<th>USE RARELY</th>
<th>NEVER USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance records</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discipline records</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health records</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal assessment results (i.e. placement tests, pre- and post-assessments)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information from previous teachers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informal observations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standardized assessment scores (i.e. ELA, Math, Science, Regents scores)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>District-wide statistics and performance indicators</td>
<td></td>
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<td></td>
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<tr>
<td>County-wide statistics and performance indicators</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>State-wide statistics and performance indicators</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demographic records</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Which of the data is most accessible to you? Please check all that apply.

<table>
<thead>
<tr>
<th>Attendance records</th>
<th>Standardized assessment scores (i.e. ELA, Math, Science, Regents scores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discipline records</td>
<td>District-wide statistics and performance indicators</td>
</tr>
<tr>
<td>Health records</td>
<td>County-wide statistics and performance indicators</td>
</tr>
<tr>
<td>Internal assessment results (i.e. placement tests, pre- and post-assessments)</td>
<td>State-wide statistics and performance indicators</td>
</tr>
<tr>
<td>Information from previous teachers</td>
<td>Demographic records</td>
</tr>
<tr>
<td>Informal observations</td>
<td>Other (please specify)</td>
</tr>
</tbody>
</table>

3. What types of data do you think would be useful, but you do not have access to?

4. Do you discuss individual student work at faculty, departmental or grade level meetings? Please check Yes ___ No ___
   If yes, describe the type of work and your reasons for discussion.

5. Do you discuss individual student work in any other type of professional forum? Please check Yes ___ No ___
   If yes, describe the forum, type of work discussed, and the reasons for discussion.

6. By what data or other means does the school measure academic growth? Is that a school-level or district-level decision?
7. Does your school set clearly defined organizational goals intended to guide instruction? Please check: Yes ___  No ___  
If yes, how does your school determine these goals and how is information regarding these goals disseminated?

8. Do you attempt to further the school goals in your day-to-day work? Please check: Yes ___  No ___  
If yes, describe how.

9. Do you personally feel accountable for the achievement and furtherance of school goals? Please check: Yes ___  No ___  
If yes, to whom do you feel accountable?

10. How do state-imposed standards affect your feeling of accountability?
Appendix B

Interview Questions for Principals
Interview Questions for Principals

1. How is individual student growth measured in your school? By whom?

2. Who determines the school’s organizational goals? Please, describe the process used in this determination.

3. Are teachers held accountable to school goals? If so, how is their accountability determined?

4. Do teachers personally feel accountable to school goals?

5. What role does data play in your daily decision-making?

6. How is available data disseminated among the staff?

7. Are teachers encouraged to use available data in informing instructional strategies? If so, what type of training or professional development designed to help them in the use of data is provided?

8. How do teachers use available data in making instructional decisions?

9. Are there policies or guidelines in place that outline how administrators and teachers should use data? If so, describe them.

10. What skills do you feel are important in analyzing school data? Identify those skills for which you feel strong.

11. As a school leader, what facets of your school’s use of data are most effective? Which facets would you like to change or improve?
Appendix C

School District Documents
### Grade 4 Mathematics

#### Mathematics Performance in June 1999

**All Students: General Education vs Special Education**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Class</th>
<th>Students</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th</td>
<td>1</td>
<td>102</td>
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</tr>
<tr>
<td></td>
<td>2</td>
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<td>225</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>34</td>
<td>34</td>
</tr>
</tbody>
</table>

#### Grade 4 Mathematics Levels - Knowledge, Reasoning, and Problem Solving Standards

1. **Level 4 (70-100)**
   - These students exceed the standards and move toward highest performance on the WCTQ sample test. They show superior knowledge and skill for each topic area for limited-ability students. They work with definitions and use properties, formulas, and theorems and are able to solve problems that require the application of knowledge and skill for each topic area. They have a broad understanding of real-world data, can organize a coherent outline, and are judicious in the application of strategy. They can justify a problem-solving solution.

2. **Level 3 (50-69)**
   - These students meet the standards well, show continuing steady growth, and exceed the WCTQ sample test. They show knowledge and skill for each topic area for limited-ability students. They work with definitions and use properties, formulas, and theorems and are able to solve problems that require the application of knowledge and skill for each topic area. They have a basic understanding of real-world data, can organize a coherent outline, and are judicious in the application of strategy. They can justify a problem-solving solution.

3. **Level 2 (20-49)**
   - These students meet the standards well, show continuing steady growth, and exceed the WCTQ sample test. They show knowledge and skill for each topic area for limited-ability students. They work with definitions and use properties, formulas, and theorems and are able to solve problems that require the application of knowledge and skill for each topic area. They have a basic understanding of real-world data, can organize a coherent outline, and are judicious in the application of strategy. They can justify a problem-solving solution.

4. **Level 1 (0-19)**
   - These students have serious academic deficiencies. There is evidence of lack of performance in one or more of the elementary key areas and significant proficiency in at least one key area. They score near the lowest percentiles and struggle to find strategies that will lead to success on these exams. They are more likely to need additional support and continue to demonstrate basic understanding of elementary-level skills.

---

1. These students with disabilities were exempt from this test because of their disability. This exemption is stated in their Individualized Education Program (IEP).
2. Third students were not required to take this test because they speak English as their native language (EFL) who required to take a portable English as a second language (ESL) student on an inappropriate English test administered and were not tested. Their results would have been invalid and not reflective of their abilities.
3. Other ESL students met this test, but they may have an alternative language form if such is available.

---

School: Dallas ISD School District

March 06, 2000

2

500044-03-0060


Grade 8

English Language Arts

Grade 8 English Language Arts Performance in June 1999
(All Students General Education and Special Education)

<table>
<thead>
<tr>
<th>Performance Level</th>
<th>This District</th>
<th>Grade</th>
<th>Total</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Total</th>
<th>Mean Score</th>
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<tbody>
<tr>
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<td>11,111</td>
<td>11,111</td>
<td>11,111</td>
<td>11,111</td>
<td>11,111</td>
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<tr>
<td>All Students</td>
<td>57%</td>
<td>57%</td>
<td>57%</td>
<td>57%</td>
<td>57%</td>
<td>57%</td>
<td>57%</td>
<td>57%</td>
<td>49%</td>
</tr>
</tbody>
</table>

Grade 8 English Language Arts Levels - Listening, Reading, and Writing Standards

Level 4 (760-800)
These students excel in the standards and are moving toward high performance on the Regents Examination. They score higher than the median and are in the top 50% of students. They can read extensively, write well, and speak persuasively. They are articulate in persuasive writing and show self-reliance. They are good at oral presentation and have a good vocabulary. They are also skilled at communicating their ideas and are able to express them clearly and coherently.

Level 3 (701-759)
These students meet the standards and with continued study, should pass the Regents Examination. They show competence in listening, reading, and writing. They are able to read extensively and write well, but not as well as the level 4 students. They are also able to speak persuasively. They have a good vocabulary and are able to express their ideas clearly and coherently.

Level 2 (650-700)
These students meet the standards and are moving toward high performance on the Regents Examination. They show competence in listening, reading, and writing. They are able to read extensively and write well, but not as well as the level 4 students. They are also able to speak persuasively. They have a good vocabulary and are able to express their ideas clearly and coherently.

Level 1 (601-649)
These students meet the standards and are moving toward high performance on the Regents Examination. They show competence in listening, reading, and writing. They are able to read extensively and write well, but not as well as the level 4 students. They are also able to speak persuasively. They have a good vocabulary and are able to express their ideas clearly and coherently.

Performance of English Language Learners (ELL)

English language learners (ELL), formerly referred to as limited English proficient (LEP), are students for whom English is a second language. Students assist these students in learning English so they can participate effectively in the instructional program. ELL students without proficient English proficiency in English are not eligible to take the grade 4 ELL test. Their progress in learning English is measured, using standardized tests, and reported.

Grade 3 English Proficiency State-Effective Participation Level Making Adequate Progress

| June 1995 | 366 | 13 | 10 |

1. These students are identified as having significant hearing impairments and are included in the special education program.
2. These students are identified as having significant physical disabilities and are included in the special education program.
3. These students are identified as having significant orthopedic impairments and are included in the special education program.
4. These students are identified as having significant emotional impairments and are included in the special education program.
5. These students are identified as having significant health impairments and are included in the special education program.
6. These students are identified as having significant visual impairments and are included in the special education program.
7. These students are identified as having significant intellectual impairments and are included in the special education program.
8. These students are identified as having significant speech impediments and are included in the special education program.
9. These students are identified as having significant multiple impairments and are included in the special education program.
10. These students are identified as having significant physical disabilities and are included in the special education program.

S0054-00-004
March 30, 2000

Oak Park School District
Elementary Level
English Language Arts

Grade 4 English Language Arts Performance
(All Students: General Education and Students with Disabilities)

This District

NY State Public

Percentages less than 0.1% will appear as 0.0% due to rounding.

<table>
<thead>
<tr>
<th>Performance of This District</th>
<th>Counts of Students</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level 1 465-499</td>
<td>Level 2 495-544</td>
</tr>
<tr>
<td>Pass 2004</td>
<td>7</td>
<td>29</td>
</tr>
<tr>
<td>Fail 2004</td>
<td>4</td>
<td>29</td>
</tr>
</tbody>
</table>

Elementary-Level English Language Arts Levels — Listening, Reading, and Writing Standards:

Level 4: These students exceed the expectations and are meeting high performance on the Regents examination.

Level 3: These students meet the standards and, with continued steady growth, should pass the Regents examination.

Level 2: These students need extra help to meet the standards and pass the Regents examination.

Level 1: These students have serious academic deficiencies.

Performance of Limited English Proficient Students Taking the New York State English as a Second Language Achievement Test (NYSESLAT) as the Measure of English Language Arts Achievement:

<table>
<thead>
<tr>
<th>Grade 4</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Levels 3 &amp; 4</th>
<th>Total Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
<td>5</td>
<td>9</td>
<td>17</td>
</tr>
</tbody>
</table>

Performance of Students with Severe Disabilities on the New York State Alternate Assessment (NYSSAA) in English:

<table>
<thead>
<tr>
<th>Alternate-Level</th>
<th>AA-Level 1</th>
<th>AA-Level 2</th>
<th>AA-Level 3</th>
<th>AA-Level 4</th>
<th>Total Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

31-03-04-03:0000

April 2006
### Elementary Level Mathematics

#### Grade 4 Mathematics Performance

(All Students: General Education and Students with Disabilities)

![](diagram.png)

#### Performance of Students with Severe Disabilities on the New York State Alternate Assessment (NYSSA) in Mathematics

<table>
<thead>
<tr>
<th>Elementary Level</th>
<th>AA-Level 1</th>
<th>AA-Level 2</th>
<th>AA-Level 3</th>
<th>AA-Level 4</th>
<th>Total Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05</td>
<td>f</td>
<td>f</td>
<td>#</td>
<td>e</td>
<td>2</td>
</tr>
</tbody>
</table>

50-03-04-05-00006  
April 2006
Middle Level
English Language Arts

Grade 8 English Language Arts Performance (All Students: General Education and Students with Disabilities)

This District
NY State Public

Performance at This District

Levels of Students

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Total Tested</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>651-724</td>
<td>725-839</td>
<td>840-954</td>
<td>955-1069</td>
<td>1070-1189</td>
<td>1190-1309</td>
</tr>
<tr>
<td>1076</td>
<td>1177</td>
<td>1221</td>
<td>1253</td>
<td>1286</td>
<td>1317</td>
</tr>
</tbody>
</table>

Performance of Limited English Proficient Students Taking the New York State English as a Second Language Achievement Test (NYSESALT) as the Measure of English Language Arts Achievement

<table>
<thead>
<tr>
<th>Grade 7</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Levels 3 &amp; 4</th>
<th>Total Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05</td>
<td>0</td>
<td>1</td>
<td>12</td>
<td>13</td>
</tr>
</tbody>
</table>

Performance of Students with Severe Disabilities at the New York State Alternate Assessment (NYSAA) in English

<table>
<thead>
<tr>
<th>Disability Level</th>
<th>All-Level 1</th>
<th>All-Level 2</th>
<th>All-Level 3</th>
<th>All-Level 4</th>
<th>Total Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

50-03-04-03-0000
April 2006

Middle-Level English Language Arts Levels – Listening, Reading, and Writing Standards

Level 4: These students exceed the standards and are moving toward high performance on the Regents examination.

Level 3: These students meet the standards and, with continued steady growth, should pass the Regents examination.

Level 2: These students must make effort to meet the standards and pass the Regents examination.

Level 1: These students require significant academic assistance.
Middle Level Mathematics

Grade 8 Mathematics Performance (All Students: General Education and Students with Disabilities)

This District NY State Public

Performance in
Counts of Students

May 2005
21 61 96 29 227 719
May 2004
20 41 173 26 313 746
May 2003
10 62 110 27 213 727

Middle-Level Mathematics Levels — Knowledge, Reasoning, and Problem-Solving Standards

Level 4 These students exceed the standards and are ready for high performance on the Regents examination.
Level 3 These students meet the standards and, with continued study and practice, will pass the Regents examination.
Level 2 These students have made some progress toward meeting the standards and pass the Regents examination.
Level 1 These students have significantly below-average achievement.

Performance of Students with Severe Disabilities on the New York State Alternate Assessment (NYSAA) in Mathematics

<table>
<thead>
<tr>
<th>Middle Level</th>
<th>AA-Level 1</th>
<th>AA-Level 2</th>
<th>AA-Level 3</th>
<th>AA-Level 4</th>
<th>Total Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

50-03-04-02-0600 April 2006
High School English Achievement after Four Years of Instruction

The graph and table below present performance of the 1999, 2000, and 2001 cohorts at their graduation examinations in English. The graph indicates the percentage of students who passed the Regents Examination in English, as shown in the legend at the bottom of the graph. The data in the table at the bottom show the performance of the cohorts at the 10th grade level after the passing grade.

Achievement on the Regents Examination in Comprehensive English after Four Years (All Students, General Education and Students with Disabilities)

The bars in the graph represent the percentage of students who passed the Regents Examination in English, with the passing grade indicated on the x-axis and the percentage passing on the y-axis.

<table>
<thead>
<tr>
<th>Year Cohort</th>
<th>Percentage Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>85%</td>
</tr>
<tr>
<td>2000</td>
<td>80%</td>
</tr>
<tr>
<td>2001</td>
<td>75%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year Cohort</th>
<th>Percentage Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>60%</td>
</tr>
<tr>
<td>2000</td>
<td>55%</td>
</tr>
<tr>
<td>2001</td>
<td>50%</td>
</tr>
</tbody>
</table>

English Graduation Requirement Achievement after Four Years of High School

<table>
<thead>
<tr>
<th>Year Cohort</th>
<th>Required</th>
<th>Highest Score Between 60 and 69</th>
<th>Highest Score Between 70 and 79</th>
<th>Highest Score Between 80 and 89</th>
<th>Passed Regents Exam</th>
<th>Approved Alternatives Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>250</td>
<td>11</td>
<td>18</td>
<td>122</td>
<td>75</td>
<td>6</td>
</tr>
<tr>
<td>2000</td>
<td>240</td>
<td>10</td>
<td>15</td>
<td>112</td>
<td>65</td>
<td>5</td>
</tr>
<tr>
<td>2001</td>
<td>230</td>
<td>9</td>
<td>14</td>
<td>101</td>
<td>75</td>
<td>3</td>
</tr>
</tbody>
</table>

*Assessments used to determine passage in this table include the Regents examination in comprehensive English, the component tested in English, and approved alternatives.

Performance of Students Who Took the Regents Competency Tests in Reading and Writing to Meet the Graduation Requirement

<table>
<thead>
<tr>
<th>Year Cohort</th>
<th>Passed Regents Exam</th>
<th>Failed Regents Exam</th>
<th>Failed 10th in Reading or Writing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>2000</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2001</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

*Includes only students eligible for the Regents examination in comprehensive English.

April 2004

50-03-01-03-0000
High School Mathematics Achievement after Four Years of Instruction

The graphs and tables below provide performance of the 1998, 2000, and 2001 district accountability cohort members, first tested after entering grade 9, in meeting the graduation assessment requirement in mathematics. If the graph, students passing approved examinations to these requirements are counted as scoring in the 65 to 69 range, 2001 results are not included in the graph. The data in these tables and charts show the performance of the cohorts as of June 30th of the fourth year after first entering grade 9.

Mathematics Graduation Requirement Achievement after Four Years of High School

<table>
<thead>
<tr>
<th>Cohort Members</th>
<th>All Students</th>
<th>Regents Score</th>
<th>Highest Score</th>
<th>Highest Score</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998 Cohort</td>
<td>222</td>
<td>52</td>
<td>88</td>
<td>114</td>
<td>40</td>
</tr>
<tr>
<td>1999 Cohort</td>
<td>314</td>
<td>27</td>
<td>59</td>
<td>109</td>
<td>0</td>
</tr>
<tr>
<td>2000 Cohort</td>
<td>275</td>
<td>12</td>
<td>79</td>
<td>89</td>
<td>0</td>
</tr>
</tbody>
</table>

*Percentages less than 0.1% will appear as zero because of rounding.

Performance of Students Who took the Regents Competency Test in Mathematics to Meet the Graduation Requirement

<table>
<thead>
<tr>
<th></th>
<th>Passed the Test</th>
<th>Failed at Least One Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998 Cohort</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>1999 Cohort</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>2000 Cohort</td>
<td>15</td>
<td>0</td>
</tr>
</tbody>
</table>

*includes only students eligible for the Regents examination in mathematics, the requirement related to mathematics and approved alternatives.

04-05-06-0000  April 2006
TABLE 2

<table>
<thead>
<tr>
<th>Year</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>LT</td>
<td>150</td>
<td>180</td>
<td>160</td>
</tr>
<tr>
<td>UN</td>
<td>180</td>
<td>180</td>
<td>150</td>
</tr>
<tr>
<td>VC</td>
<td>150</td>
<td>190</td>
<td>190</td>
</tr>
<tr>
<td>MB</td>
<td>140</td>
<td>180</td>
<td>160</td>
</tr>
<tr>
<td>HR</td>
<td>160</td>
<td>185</td>
<td>190</td>
</tr>
</tbody>
</table>

Each building has shown growth over the last year or a sustained 3-year growth in its aggregate performance index (in math with the exception of the middle school).
DATA FOLIOS

The Use of Data Folders as User-Friendly Files for Teachers to Link Assessment Results Data to Instruction to Improve Future Assessment Performance

Last year's "data book" presented a study on our special education students' results on the ELA and Math 8 Assessments. We were concerned that so few of our special education students were scoring in the Level 3 or Level 4 ranges, especially in ELA. We therefore identified where our special education students were scoring in ELA 8 and found that almost all of them were scoring in the Low 2 and Mid 2 ranges. We then organized tables that showed this group of students' response patterns on the questions where at least 50% of them had chosen the wrong answer. We found many questions with wrong response patterns and found that these had meaning within the context of the curriculum and the way teachers might teach the content related to them. We then analyzed whether this group of students was choosing wrong answers on questions relating to certain ELA standards as opposed to others. We found that they were. From our analysis, we then organized a table that, for each of the questions where a recognizable response pattern existed, we provided the "knowledge and understanding" that the student would need to "get the question right" in the future. In addition, we provided the particular skills that the students would need to properly address the questions, the learning activities that the teachers might use to teach these skills, and ideas for ongoing assessment activities the teachers might engage in to continuously assess whether their students did indeed master the skills.

We met with the special education teachers and their regular education colleagues with whom they were teaching in the blended sections (sections co-taught by a special education and a regular education teacher) and provided them with the tables, the graphs and the charts, and the instructional information. We had a good meeting and they thanked us for the information, but we noticed that something was missing. Soon the feedback trickled in. Our teachers were asking us, "But where is the information that I can use right now for my own students, while the memory of taking the assessment is fresh in their minds? I know what my students have the most difficulty with generally, but can't you provide me with something that, in one easy document, gives me the global information and the information for my students, individually, only?" So (and in addition), we said to ourselves, why not create something that will provide not only special education teachers, but all teachers, with this information.

We then went to work to create such a document - something that would give global information about each building - for each reading teacher at each elementary building for example. They were interested, for example, in the ranking of each question on the assessment - which ones did most students miss? But also, something that would give each classroom teacher (and again the reading teachers of course), at a glance, what questions their own students missed, the levels their students scored at and whether each particular question was ranked in difficulty and whether each question had a recognizable response pattern.
We came up with the "Data Folio," and pages of it, from the ELA 4 2005 assessment, are presented in the tab "Pages from Data Folio."

In looking at the pages for Questions 8, 10 and 17 you will see different pieces of information that the "Data Folio" gives.

Imagine yourself as the teacher. Each of the 25 multiple-choice questions is represented in the "Data Folio" (although you are only reviewing 3 of them). Each question's page tells the teacher what ELA standard the question is addressing and what ELA subskill the question is addressing. It also presents a global pie chart that tells, within the specific building, the percentage of wrong items all students chose. In addition, each question's page has the names of the students who got it wrong, and the wrong item that the students chose. It also states the performance level each student achieved. Finally, each question's page states whether it is ranked and whether it has a recognizable response pattern. (The ranking has to do with the difficulty of the question. A question that is ranked as Number 1 in difficulty may or may not be of interest to the reading teacher or to the classroom teacher because it probably has a low "p value." A "p value" indicates that most students nationally and state-wide got the question wrong. It was therefore structured as a "softer" question, (the type of question that sorts Level 3 students from Level 4 students.)

Therefore, should the teacher spend a lot of time on it? The recognizable response pattern is important however, because this type of question contains "distracter" items. These are wrong answers that appear as correct ones to many students, and these help teachers reinforce among their students the fine critical discrimination skills that help them build critical thinking skills through the ELA curriculum.

As you look at the three pages from the ELA 4 2004 Data Folio, you can pretend that you are the teacher and filter by level, and by student. The reading teacher may want to group by level, and then identify the particular questions most of these students missed, and then dig deeper to find out what sorts of wrong items her students missed. Or, she may want to filter by student and then find which particular questions the student missed, and assess the standards and the subskills that this particular student needs to immediately address while the test and the curriculum are fresh in his mind. This is particularly useful for the teacher in AIS (Academic Intervention Services) classes, where a small number of students are scheduled with the teacher for extra help if they scored below Level 3 on the previous year's ELA Assessments.

When we finished creating the Data Folio in the Spring of last year, we met immediately with the reading teachers from each building and the feedback was "on the mark." They described it as "easy to use," and useful to work with students right after the test while it is still fresh in their minds. They went to work right away with it, and at the beginning of this year we sent the Data Folio files for ELA 4 2004 to the 6th grade teachers at the middle school, and the Data Folio files for ELA 4 2005 to the 5th grade teachers - both in anticipation of this year's ELA 5 and ELA 6 Assessments. In addition, we sent it to the 6th grade ELA AIS teachers at the middle school. This year, we plan to distribute Data Foliios to all current grade teachers and reading teachers and AIS math teaching assistants at the elementary level and grade teachers and reading and AIS math teachers at the
middle school quickly after each assessment. We are at this moment preparing them for ELA as the assessment was given in January. Although we only issued them in ELA last year, we will create math folios this year as well.
Appendix D

Transcripts of Interviews
Transcript of interview with Principal of School A

Researcher

How is individual student growth measured in your school? By whom?

Principal

Ok, first of all the teachers here do a great job at measuring individual student growth. The previous reading teacher/staff developer, she is half time reading teacher half time staff developer. I say previous because she retired this past year. She set a lot of things in motion for the teachers to really look closely at individual growth so I think the teachers here do a great job of having some assessments... some are district based, some are state based and some are individual to the school... to look at students so they figure out, ok, what do we know about our students and how can we plan instruction based on that. So, that was the previous reading teacher and then she sat with them quite often... and this is for a number of years before I came; she sat with the grade levels, had them review the assessments... look at the students individually and as grade level, as groups, what do our students know, what are they able to do, where do they need to improve. And I believe she did that with all grade levels. Not as much in Kindergarten; certainly that's still needed. So, that would be all the classroom teachers directed by the reading teacher... and there is another reading teacher involved and special ed teachers were involved in that too. When you look at the measurement of the cohort groups, I think that's been done but not enough. I really think we have to measure student growth overtime individually, and as cohort groups going up. We do a great job individually and we look at our assessments... from year to year with different children. You know how
we look at the fourth grade assessment and, ok, what do they know. Now we have a new fourth grade coming in; they need to learn these things. I don't think we look enough at cohort groups. I think we are starting to, and we do that at grade level meetings, and we do that...and sometimes the reading teacher's doing it, and sometimes I'm doing it. We have done it also at curriculum meetings. Usually, I collaborate with the reading person and the staff developer to do it together. This year we have a new reading teacher/staff developer and she is taking on another bent with it... Although it started previously, she is really doing error analysis on the assessments and really doing a great job with that, and looking at standards... skills... the grade levels assessments, and I see the teachers really studying those assessments even more than in the past. I think they did it, but the error analysis she is doing this year is very thorough; there is more looking at the numbers actually even though it's connected to the test instead of bulking it and saying the children are not good in this general area, she is getting it more specific. So, again the reading teachers both in the past and present are really into this process. I sit at many of those meeting and am involved in it, but if I didn't have, her I would have a hard time getting this done. Again, I think they do a great job individually, and it says individual student growth, but... I think that piece of assessment is important there. The other thing that we do is our instructional support team. When I'm... I see the word individual here, and I think individual is the key. When we are looking at students that are struggling and the teacher brings them to IST... how have they've done in the past... let's really review all the history of that individual student and get a good picture of ups and downs and strengths and weaknesses and... and looking at all the measures, formal and informal, our student work overtime. And, so, there's our instructional support team and people
are involved such as myself, the reading people, the Special Ed people, speech, psychologist...they are all involved in that. And we also have...I might be answering further questions but I’ll just go on for a minute...I’ve been very involved in response intervention and measuring student growth in that way...looking at IDEA, the new IDEA. I studied it, I worked with the psychologist last year. We are doing a lot with it in the district...we went to all the schools. However, we were both in this school, so I think we moved things along further...and when teachers bring their students to IST, they want to use all their past history. But, you are not learning; you are not taking a skill alone and measuring it overtime with very clear intervention. Teachers do a lot of interventions and a lot of good teaching, which is many...much researched based good teaching, but they don’t isolate...I guess that’s the way I’m looking at it. When a child is having trouble with something, they don’t isolate it at its point of difficulty, which, you’ll be a fifth grader, might even be in second grade. So, we really started measuring student growth based on response interventions. Teachers are used to it in here in this building, but they are not comfortable with it. I don’t know if “used to” it is the word; they understand it. They understand it, they are not totally comfortable with it, because when they have a child in need, they want to move process along quickly and they want to know more about the student and they think its always the psychologist’s assessment and not necessarily that it’s...intervention. So, we do a lot with individual in response and intervention and we found out more about children than we ever knew. Children that were flat line, children that wow, they really can learn. What made them learn? Are the graphs going up and children...are the graphs going down? And, so we ask ourselves a tough question. And I think response intervention is tough, but you when you put it
together for individual students that are struggling, that's...that really helps measure
dividual student growth.

Researcher

So, the psychologist works with you and the classroom teachers and the support teachers,
and you concentrate on one individual at a time?

Principal

Right, right. Again, changes in staff make a difference... That psychologist was only here
for one year, I have a new psychologist who doesn't necessarily believe in it as much.
She understands it, but she says we don't always need to do that. I think 90% of the time
we do. It might be another issue with social-emotional, where you get the social workers
involved and they are looking at that, but when you are talking about is the student a
slow learner, is the student a disabled learner, you have to do that to find out the
differences. And, like I said, it's hard. It's hard work to look at those individual
students to figure it out, but... that's really important. It's important to look at the whole
picture, it's important to look at the individual student.

Researcher

How do you identify those students?
Principal

Well, mostly the teachers do... If they are struggling in their classrooms, or the reading teachers do, or parents. Parents can bring the students' names up... or I do. It's usually a collaborative effort, because, when teachers start saying, oh, this child is starting to struggle, and they always consult with each other. So, they have conversations informally in the building a lot. And... then one or the other will say, well, you know, we really need to talk about these children in the team, let's bring this child up... And test scores do impact it, you know, I mean if the child really scored very low on the state assessment, we'll always look at that child, but even if we didn't have the state assessments, I believe that the teachers would be bringing the student up.

Researcher

Who determines the school's organizational goals? Please describe the process used in this determination.

Principal

Ok. I have worked with the staff to try to do that... and it's been a process. Because goals weren't necessarily three years ago based on what are the scores. Formally, they weren't done. Informally, I think they were, by the reading teacher and the teachers at grade level who'd say, ok, what are our goals... but I don't believe previously they were, and I'm saying three years ago, very connected to district goals... data wise. I think they were connected in softer forms like... building school communities, and how are we going to do that, and... diversity, multiculturalism. I think there was a lot of work in a
number of areas that really was throughout the whole district...and came into the school, but I don't necessarily think that, this is just my perception, ok? When I came in, it was like, we all need to work in language arts or writing in the school district because we are looking at 8th grade scores and we are looking at high school scores and elementary scores; and they are connected, the difficulties are. I don't think that was prevalent in the school, it might have been an effort, I don't think the data in that area. I think...there was data in subgroups...which brings you to, you know, district data. I saw there were differences in subgroups; I saw that right when I first came in. So, what are we doing for the poor children? What are we doing for, you know, some of the children in ESL?

There is a high ESL population in the school; so, in general, there was a push for the subgroups to get to really look at those children, but...I don't really think it is - it was data-driven enough. And, ok, so ESL children are having difficulty; then, let's do an error analysis just on their scores...It was like, you know, we know they are having difficulty...a big, big issue throughout the district. But...when I look at the school goals, I really try to do that. Again, with the reading teacher...and, are teachers held accountable? That's a hard question...Yes and no. They are, based on when I sit with them individually at the beginning of the year and sit with them at the end of the year and talk to them about their improvement - the connection is to school goals. It's...again, the first year it was very general. It's been moving on, we started talking a lot about writing. Last year we had a lot of goals in writing as a school and, to infuse that, I brought in 6+1 Traits of Writing...because we looked at the students' writing; some students were writing, some students weren't. But, it was more looking at their work; it was looking at their work, not necessarily the state test scores as much...because actually the scores
have done fine. Not a hundred percent of them are passing, but they had really grown in their test scores. So when we looked at their work in writing, we started really building that from this building and, as I said, I brought 6+1 Traits of Writing which they really liked. So, I was trained in that and it was a good way to start looking at writing and then at grade levels... I worked with the teachers on that. They brought in different paperwork that the children did, and understood how a child in kindergarten and a child in fifth grade can talk about voice in writing; so that to me was a school goal last year that was very... throughout the building. And they are accountable because they had to do it, but not because I said they had to do it... Isn't that weird? It was like, we all have to do this, and they all agreed; they agreed that this was important. And I talked to them about it, so they are accountable for the conversation; not accountable to make sure the children are good writers though. It wasn't held in their evaluation, even though when they were working on it, I certainly put it in there too. Ok? So, accountable through their conversation and to themselves, I also think, and to other people at the grade level because they develop lessons together. So, the accountability to come together and say, what books do you use and what books we are using and to share. So, I don't want to say peer pressure, but it was like, that collaboration helped them become accountable.

Researcher

I think you actually touched on the next questions. Do they personally feel accountable to school goals?
Principal

Oh, yes. I think 99% of them... Some have their own agenda, but just a couple... And interestingly enough, it often is connected when I talk to them at grade level meetings.

But I do think they feel personally accountable to school goals because of that grade level connection, they feel very strongly and they are very collaborative here. I think that helps.

Researcher

What role does data play in your daily decision-making?

Principal

I think data plays 100% on what I do daily... But I am talking about all the data.

Discipline problems, that's data. Parents... interest in certain things or upset about certain things, to me, that's data; everything is data. When I go into classrooms, formally for observations and informally, I am then using data that I know - where the children are... with error analysis, having problem with questioning... and I talk to teachers about that and critical thinking skills. So, it is driving what are my informal conversations as well. And... I don't, however, spend enough time in instructional... in the instructional area. Everyday I sit down and come in and... I'm ok, I know we are working on this, this grade level is working on this, I want to have more conversations with them; I want to go in and see it, and some days that works and some days it doesn't. I think it should play 100%. I think it plays 100%, but it's not all assessment data. OK.
Researcher

Yes, as a matter of fact, these are different types of data I have presented to the teachers-I am not just looking at assessment data.

Principal

Attendance, discipline, health, internal assessment results, yes; those. Informal observations, absolutely. The informal observations is a big piece of what drives me and where I go with...working with teachers and improving the school, but also with teacher evaluations...And what I need to speak to them about, or where they need-where I feel they need to grow, and where they feel maybe they need to grow...I would say county wise statistics and performance indicators...hmm...that's interesting, because I know that [the assistant superintendent] does handle that. But I guess I haven't been so into that as I have been district and state...and actually it's been interesting for me to look at national data and I have done that personally...and tried to make those connections and previous history of my knowledge...of other places I've been to see...Because that helps me, my background knowledge, to see the similarities and differences...Gee, this district is different and doesn't...the students don't have that skill...why? Or the students in this district really have that skill, or the teachers have the skill; so it is...it feels so good to have a history of information about data in every one of these areas.

Researcher

So, you feel that your background has really helped you?
Principal

Yeah, right. But I really have to disconnect to that, I guess. I really have to understand the culture of the school here and the school in order to work to use my skills and my background and to help the school grow. Again, this school has done a great job in the past, but has also felt... looked at those tests and padded on the back so much that, ok, well ok, but let's think about the next five years or let's look closer at this group of students that aren't performing, or, you know, me to ask them those tough questions -- they need to ask themselves those tough questions. I think this point is critical in looking at data, and how they learn to look at it, and how I learn to look at it, and how it's connected to district level... because I think that's critical - I just think that's critical; and it is all data, and I think we've done a better job, especially again in the instructional support team, of looking at various types of data on the children. And not just: are they struggling with this? Ok, let's pass that or work on a skill. But, we are looking at the whole child and focusing on specific area skill.

Researcher

How is the data disseminated among the staff... ?

Principal

Ok, let me repeat myself just a little bit. Because it is curriculum meeting we have once a month and... however, they do get data before that. As soon as it comes in, you know, we disseminate it and show them how they can use things like... last year we worked on Pearson and Foreman and, I think there is another program we looked at. And, this year,
we started talking how the state is going to make it available, hopefully, in an easier
way... so informally they get their scores and they are very interested in how the children
did from last year and where they are going, because it is going to drive their instruction
immediately; and then we go to the staff meetings. So, it's kind like that... get it
individually, go to the staff meetings, discuss it more, and then bring it back to grade
level meetings. So, it's... it's an interesting process. And then it comes to, often,
individual discussions with the teachers; although I don't make them set their goals,
based on their test data, because they would feel... I think there is a lot of pressure on
tests already, and they do feel accountable, but I don't want them to have... I want them
to look at everything that's impacting their child, their children in the day; so while there
is a lot of conversation about it, I don't separate it from their evaluation, even though it's
only separated somewhat... because it has to be connected... I don't know, that's hard to
explain, but it's a give-and-take with different teachers. You have to, again, understand
them and where they are in their learning process by using data.
Ok, number seven...

Researcher

Yes, number seven, and you more or less touched on that. Are teachers encouraged to
use available data in informing instructional strategies? If so, what type of training or
professional development designed to help them in the use of data is provided?
Principal

Yeah, it's a building training...I would like to see district training, so that...sometimes when there is a district effort with training, they know people in other schools, they know ok, this is the push, and it's the training to use the data; not just, ok, let's look at the scores...and have the teachers just feel like they have the time to use. It's the training...how they can make it user-friendly, very quickly, and use it to drive their instruction. So, we have that building training in use of data, but I wouldn't say that it's training in use...professional development to me is a bigger picture that we are all involved in this professional development of using data to drive instruction. I think there should be more of that and these are much linked questions. But, that's fine, because it is leading from one to the next...

How do they use available data in making instructional decisions?

I think it's through their grade level mostly, because as a grade level they talk about that and I can think of some very specific grades. It was grade four...planned units based on that, and they all do it together. Now, their lessons aren't exactly the same, but I think their units are. And it is based on data, the things that they know about children...and all grade levels do that, some more than others. Some are very connected and collaborative with each other and others are more loosely; and, when we have meetings, it's more directed. But, I think they do that. And...some of it is just time; they haven't spent enough time on it or they spent too much time on this; and...it's also instructional strategies, but a lot of it is looking at curriculum mapping and at their grade level, because they've done that and in certain subject areas, not all of them; and I think the last
couple of years they got a better feel of curriculum mapping and looking at their year, looking at long range planning.

Researcher
Are there policies or guidelines in place that outline how administrators and teachers should use data? If so, please describe them.

Principal
Without looking at the policy book...I actually, interestingly, I looked at the policy book tons, but not in that area. So...but we've been given many opportunities over that past two years, two and a half that I've been here, to learn how to use data as principals with...and we've been given numerous opportunities. It's been different...it's been different though, like, first year it was looking at one program that is going to help us, and second year it was looking at a different program that is going to help us, and...this year, it's the best ever because we really looked at...The district has done a lot. Not that they hadn't before, but I think they've done even more...with disaggregating for us, how we can pull it up, how it can be right on our desktop, the ease of use, how I can...I have a projection screen in my conference room where I can pull that up right in my conference room when I'm having grade level meetings with ease, so hoping it'll be easier to use that data...and I think there is an expectation to use that data. I don't know specific guidelines, it's a guideline for how to use...yeah, it's a guideline for how to use the information...I guess it would be...They haven't answered the question for me: how am I going to do this in twenty-four hour days when I'm here working twelve hours...many
days, many, many days, and it's hard to fit it in another twelve hours... and... oh, I'll just say that.

Researcher

Ok, that's fine. Now, the next two questions are actually more subjective. What skills do you feel are important in analyzing school data? Identify those skills for which you feel strong.

Principal

I think you have to understand schools and school culture; I think you have to understand mathematics and statistics; I think you have to understand the connection to instruction; ... what... looking at what is happening on assessments; what's happening with your students; knowing the students individually, knowing the classes; it's really an understanding of human... the teachers and that human piece, but also the mathematical piece. I feel... stronger in understanding people, and understanding what's going on in the classroom and the instruction, than I do in the data. I feel better; every year, I feel better in understanding the data. Of course, there's new tests, and tests change, and there's connections with what informal assessments - do we need to connect with that; that's a growth process every year. I feel that, once the data is pulled out for me, I can analyze it; that's why I'm so excited about what's happening this year, because it's pulled out so much more clearer and then I can... I always have the aha's and can connect it to the classroom... And maybe it's because... and again I'm going to go back to time... the timing of the first piece. I don't have the skills; I have some skill, I don't want to say I
don’t have skills; but it’s easier for me to use all my background in the second piece of pulling it all out and connecting it to classroom instruction in supporting teachers and students. So, I think that three quarters of that process is the beginning part of the process...and all those numbers, how am I going to sit down and do that? And, I haven’t done that as much as I’d like, but it’s something that if I had the time I would do it better.

Researcher
I was thinking, that’s where, as we said before, an assistant principal would help you...

Principal
Right, right. And, I also believe teachers need to be more involved in that...Some teachers love social studies, and, if you give them the time, they’ll look at the social studies data; they’ll really be able to look at it. Some teachers like math; some teachers like language arts, some teachers... The more we support teachers as experts and give them the time to be experts, it can all be done...I think it’s hard to find time for them to do that. I think, I’ll throw this in...the teacher contract prohibits us from doing it. So, you have to be very creative. You can still do it if you are very creative and support the teachers, but...I think teachers would be more excited about it if they felt like experts where they were instructed like experts. If more of them got some of the training that I had this year...I don’t feel expert enough to give them that piece of training early on, but I think they can do and I think if they see the need for more parallel assessments and internal assessments in other subject areas...I think we do a lot is ELA, a lot on that. We do some at the primary grades in math...I don’t believe we do enough with science and
social studies in an ongoing manner. But, interestingly enough, teachers do love those subjects, and...so...that’s where I feel the connection should then go, and I think it can be.

Reseacher

...Because you talked about teachers and teacher contracts, as long as the district is moving in this direction, you think there might be changes?

Principal

Yeah, I think teachers understand the need for it now. They’ve gotten to the point where they do understand, and, like when my reading person...teacher does the data...the error analysis, they really...I mean the aha’s, and I point over here because there is a conference room over here so they are always over here, and...and I haven’t talked about the site-based team, but I think parents are going to be a driving force for that. I have a lot of data besides this team, they haven’t analyzed it. I’d love the site-based team to get into it more. I brought data...just tons...even so that they know it’s there; and, after the analysis, what we are doing with it because right now it’s more an FYI, so that when we look at our goals we are not necessarily revising the handbook; we are looking at what do your children need, what can we do, what do we believe the school needs, and some agreement on that connection as we move ahead with the site-based team. I want the site-based team to be more integral. I think they have moved ahead in the last couple of years...but it’s interesting as new parents and new teachers get on the team, you know, there is a little switch. I haven’t, we haven’t made the connection to the school about the
site-based team, their work and what they can do. It's internal in the site-based team; when new people come on, like this year I realized that oh wow... I didn't... the culture of the school, the site-based team is still separate... The site based team last year they were getting to that point and now a couple of members changed and I felt like I had to regroup again; so, somehow in my thinking, I'm... ok, I can't just review data and analyze data with staff at curriculum meetings. I have to help the site-based team members do that and see the connection. And I... right now I'm analyzing myself how I can make more connection with the site-based team and not just internally on the site based team. And the site based team felt more connected, I think, last year to the district team, but now my question is this team, even though it is only three members changed. They... they seem to have fallen back; not totally, but a little bit as we are getting there. The other problem is data, state data is not timely; so, teachers site-based people, everybody starts throwing up their hands and they... ok, all right, well we don't have it; what... what can we use? And that's... they do go to that question, so what do we use for our AIS, academic intervention services and after-school program, because it all drives that... the information about children—the internal and the external assessments. So, it does drive that teaching a lot; I didn't mention that but it really does. But, it needs to be more cohesive in all the pieces and give us the information quickly

Researcher

Absolutely. It will happen eventually, in a couple of years.

As a school leader, what facets of your school's use of data are most effective? Which facets would you like to change or improve?
Principal

Well, I’m just going back to looking at individual students. I think I’m most effective in doing that and analyzing that and using all the data for the students. I think that we are very good at that but it takes a lot of hard work...I think the error analysis is very good as I mentioned before... and I think it’s being looked in a way, again I am only looking at three years, but...I see how...I interviewed everybody when I came here and saw that we were a great school but how is data being used in looking at specific focus and general focus... if I focused on ELA, it felt more general and problematic-like a balanced literacy program. What does a balanced literacy program look like? Great, I love balanced literary... but what in that do we need to do each year to help the children improve in a certain skill that they are lacking... because it can be done in a balanced literacy program.

So again, a more focused effort on using data and, so I think that’s it.

What would I like to change and improve?

Making the connections between all the groups- district, site-based, even in building between grade levels. And they do meet together, different grade levels, but there needs to be more connection of that alignment- alignment K-12, there needs to be more alignment and I felt the connection with these... because I went to every school. Talk about the skills and how to do... intervention, it helped me realize again, not that I don’t notice it already, but my belief is that there has to be a K-12 connection and when we have that, I had... I’ve been at conversations with the middle school and the high school and; wow you do that? And they came down here and saw a lesson and were: you do that here? We didn’t think you did it at all... but... understanding each other’s assessments; because I think kindergarten teachers should see English Language Arts Regents. Where
are our children going? Let's look at that big picture...what parts...so, if we are doing critical analysis or we are doing questioning techniques, in fact, we just discussed this at Superintendent's Conference Day, what does that look like in kindergarten? How can we get kindergarteners to be good questioners, even of each other? Is that possible? The answer was: yes, but how do we do that? And it's definitely possible; so you break it down, you just break it down. They need to do that when they leave here with communication skills; in groups, teamwork. So, in twelfth grade they need to do it; so, what does it look like at every grade level and break it down; and how the sixth grade teachers understand what the fifth grade teachers are doing even though we are in a different school and vice versa. So, I would like to improve the connections between all the groups instead of just this group is working on this and this group is working on that. I do that somewhat but my effort is to make that happen throughout; so, we do all have common general goals and then building specific connected to it, level specific connected to it, and individual child. And that's what I hope to accomplish some day; and with people. Teachers are very collaborative; I mean they do understand when you take the time and they do want to do when you take the time. But the more they see the connection, the more I help them; we'll get there. Because, I think our goal is to help all children and each child and there is a little difference I won't go into the conversation but I do think we need to help all children and each child and the data can help us get there in a good way.
Transcript of interview with Principal of School B

Researcher

How is individual student growth measured in your school? By whom?

Principal

The teachers of course do their own assessments, as they always... as teachers usually do; tests, progress reports. The formal system we have is every five weeks we send out progress reports and every quarter, naturally, we send out report cards. So, we are measuring the students in a formal process eight times a year. Actually more than that, it's actually ten times a year because of the midterm exam and then the final exam, and that could be either a local final or a state final. I really don't believe that that is a good measure of the individual students, I think that most of the time what we are seeing are summative evaluations. And what I've really have been pushing and have been having conversations for a couple of years now, even before it became popular in the district and even before it became popular in most of the education literature, because I came from a building where I worked for fourteen years where I would say... more than ten years ago it started being local assessments. So, I have talked about that. I have always felt that every time I mention local assessments, the feeling that I got from people was... well it had to be a program. It had to be designed by a professional publishing company, and that was not at all what I was talking about. My feeling is that the only way that classroom teachers could really be involved in the personal growth of their students is to decide as a group... as a subject area... course... as a course. I have three teachers teaching a course.
What is it that you want these kids to know by November? And those three teachers then devise an assessment. I don’t care about validity and reliability and the reason why I don’t care about that is because we graduate kids, we retain students based on ways that a teacher generates, not generated by some publishing company or testing company. So, if its good enough not to let a kid graduate because he failed a course based on a teacher’s test and teacher’s evaluation, then, that’s we want to use for the teachers to assess. My feeling is that assessment is instruction; and what I tell the chairs is that while all tests might be assessments, not all assessments are tests. So, there’s that part which I’m...I’m looking really to put in place. We also, for ninth graders, let me go by grade because we do some particular things for ninth graders. When the ninth graders take their eighth grade core subjects assessments, we...I make a spreadsheet of all the kids who are receiving academic intervention services. So, I’m just pulling out from a group. Every time they get a progress report and every time we get a report card, we have in conjunction with that an activities eligibility list, those activities could be sports or clubs, and we put kids who failed one subject and kids who failed two subjects. We look at that list, we compare it to the kids who will be receiving academic intervention, and I have someone mark...this kid for the first progress report is still failing math, failing English, whatever it might be, and I keep that as a running tool all year long. Every time I do that, I send it to the department chairs and I ask them to have a discussion with their with their...with the members of their department to find out why Johnnie is still failing when he is getting academic intervention in math. Is the academic intervention not working? Is there something that we need to look further in...Johnnie...why he is not achieving? So, we do that. Now, when I first started that, I got doesn’t do homework, misbehaves in
class, cuts class, regularly absent, does poorly on test. Well, guess what! If I look at any student who’s failing, ninety-nine and nine tenths of the time I could say the same thing without knowing who that student is and be right. So, I finally have had the conversation changed to: he seems to have a processing disorder, and... or does not comprehend, or he is not fluent in reading, or he doesn’t understand the procedure for factoring. So, I’m really trying to retrain teachers to think in terms of what the educational... deficit might be. Or, is it the program? It doesn’t have to be the student. Is it the program? So, that’s one way, and that’s for ninth graders. We also, for those kids who are receiving academic intervention in ninth and tenth grade, we give them the RCT... I used to have someone here who was my reading specialist who would look at them, and I am hoping that the new person will do the same thing for me... she would look at the RCT results of these kids and then actually make individual folders for them with sample lessons that address the... the skills that they were weak in. And each teacher would get a folder with the kids that they have--- saying this is what Johnnie can do, he hasn’t reached mastery in this because... So, that was done.

Researcher

This is for the AIS kids?

Principal

That’s all for the AIS kids, ninth and going on to tenth grade. I find that the eligibility list is really very helpful in tracking, because if you fail one subject you are on that list. Ok, so we have the RCT, we have the eligibility lists which I think is an important... area.
Again right now I am focusing on those kids who are demonstrating weaknesses and who really need help. We also have the IST team, where a teacher can recommend a student to the IST team, where they look at that student's history to find out what the problems are with their... achievement. Is it emotional? Was this a neurological? What's going on with that kid? Is it, you know, dysfunctional family life? There are many things other than the ability, because most of the kids... are capable, even most of the kids who don't achieve are capable of achieving. So, there are other things that are in their life. So, we look at that. If you are looking for absolute test data, you have all the state assessments. We have... we can look at the Regents results. Another thing that I like to look at is... but, again, that's summative. See, that's why I am talking about these other things that we can assess on an ongoing basis and make changes and, either in interventions or instructional practices, all the other assessments, if they are summative, certainly we look at it and does help for best practices, there's no doubt about that. So that if I look at... my feeling is that a Regents exam is a minimum competency test for average students. I truly believe that and it's becoming even more and more minimal if that's... if that makes sense. And my feeling is, I don't want to see a kid passing a course with an eighty and failing the Regents. There's something wrong with that. There's always exceptions; I am not saying that there aren't. Maybe they had a bad testing day or something, but my feeling is that the classroom grade should be lower than the Regents grade. Kids should be able to shine on the Regents. You get a seventy-five in the classroom, I expect an eighty or eighty-five on the Regents. So, I don't like when it's reversed. That's another way to measure... it could measure programs, it could measure teacher best practices, it can measure students and their ability to do test taking as well.
...Let’s see...

Now, by whom...

It’s the individual teachers, administration, IST teams, CSE teams, and the parents themselves too. Remember the parents are the first one; those parents who are involved are the first one to say how come my kid didn’t get an eighty-five? So, that keeps us on our toes as well.

Who determines the school’s organizational goals? Please, describe the process used in this determination.

The way I do it, I have, since I came here, I have three goals that continue; I haven’t changed these goals. Then, I ask my department chairs to give me their goals as their department goals relate to the building goals; and then I ask them to go to their teachers to give me the teacher’s individual goals as it relates to department goals and so on. So, that’s the process that we use to determine goals.

Are teachers held accountable to school goals? If so, how is their accountability determined?

I don’t know if accountability is the right word. Every year, at the end of our formal evaluation process, our old evaluation process, there was a place for teachers and goals.
And they did; and they would write in my goal for such and such a year. Not to make it a test at times; and I don’t do this consistently may be I should.

What I’ve done in the past is send out… asked them to reflect on their goals and how do they feel about it. It’s not… I don’t want to judge whether or not they have. And apparently I was right on line with that, because now with our new evaluation system we talk about smart goals; and the Danielson model really talks about having the teachers determine them and not for us to look at it and say that’s not good that’s good you didn’t do it. The teachers choose and assess themselves, so that’s how we do it. And, in fact, in the past when I’ve asked them how do you feel about your goals and which goals you think you’ve met, that is basically it. So, it was never anything that went down in writing, it was really just to have them aware that they should have some goals.

I think the answer to number four unfortunately is no, and probably I have not done a good enough job in getting it out there. I don’t think that I have. And my goal this year has been to do a better job at that and make them feel personally responsible.

Researcher

Is that across the board?

Principal

I have to tell you and I don’t… I really think that it’s part of the culture of the… I think that school culture plays an important role, and school culture is not only the building culture. School culture is determined by the overall organization of the district and this district has always been a district that, and I think you can ask people about this and they
verify it, it's a lot of micromanagement from up on top, even though they change. It's funny because even though the personnel changes, it is so ingrained within the system and it doesn't change even though the people change. It just seems to pick up... right, have you noticed that in other places at all?

Researcher

Yes, it usually happens.

Principal

It just continues... part of that culture, part of that micromanagement kind of thing, it really has the building principals lose their autonomy. And, once you've lost that, it is very hard to have people view you as the leader of the building to move. And in fact, what happens, and this is also part of the culture, that if they disagree and if they feel that this is not a good idea boom right up there and it gets, you know, it becomes a negative on the building principal. Now instead of realizing or having even a mentoring kind of conversation... I guess I am getting these complaints and maybe you are going to bat the wrong way, or may be you are going about it the right way, be persistent, that kind of thing. It is not, it usually comes back as a negative. So I find that to be very different here than it was in my other building. I had more autonomy as an assistant principal than I have as a principal; I worked in Westchester before, so... So... I will give myself that my first thing there is that I have not done a good enough job.
Researcher
How many years have you been here?

Principal
This is my sixth year. So, I think the realization of that hit me I guess toward the end of last year and this year.

Researcher
What role does data play in your daily decision-making?

Principal
Daily decision-making? I don't know, I don't see it as a daily, unless you can give me some examples of what you mean by that. Daily decision is something that I look at everyday... We have a wonderful system management system, SASI, I don't know if you are familiar with that, and it's really very user-friendly, and we can put all kinds of things, for instance I just asked... I just did a query because I wanted to find out how many students we have here that are seventeen years old or older and only have... have fewer than eleven credits. So, that's data... saying that these kids that are probably not going to graduate on time and what do we do about them and what does that data prompt me to do... maybe look at a credit recovery program. When we have kids like that, you know, we really take all the fringes away get them right on target again, let them see the light at least after five years if not four. But, I don't know that that's done on a daily basis, and you could see just in the time that you were here... you know, I mean that's
something that I have to sit down and say ok this is what I’m going to do. But, generally when you are working with data, the interruptions that come along all the time…

Researcher
What about in terms of decisions having to do with personnel or may be student placement? Do you rely on data?

Principal
No. We have an open enrollment policy. No and yes. We have an open enrollment policy which is very good, because, as I said to you before, I think all students can achieve… you know… And we start with the eighth grade assessments and we say he’s got a three on the ELA assessment and wants to be in honors. We try to encourage them. We’ll look at data at the end of the year and say, you know what this kid is getting good grades, let’s try to push him up to AP, if not then honors. So, we do things like that, but again it’s not…it’s not that we need to sit down and say ok now we are doing this. But, certainly as the issues arise, and it comes up all the time. I mean, when I look at kids who don’t go to detention or kids who have cut class, you know-that’s data as well, those are all things. In fact, I just set some things aside that I was going to meet with my assistant principals. Knowing that kids are cutting but they are not going to detention as a result of cutting, and then they become insubordinate… now, that’s suspension. Let’s call home… we did call home… Dad is on oxygen and in pain. So, yeah…it comes in, yeah, it comes in, but…but to really make decisions based on that data…that takes time to sit down, do a query, and do that.
Researcher

How is available data disseminated among the staff? And I guess I am interested in student data more than other types.

Principal

Student data... other than grades...

Researcher

Disseminated among teachers...

Principal

All teachers have... they have SASI available to them for their students. So, they can look at their students' report cards, they can look at their students' progress reports, they can look at their students' discipline and attendance. So, they have access to it.

Researcher

That's all in SASI?

Principal

That's all part of their class... you know, we use Class XP for attendance, and that ties in to SASI for their students only. They have access to their students only. We also use IG Pro for our grading system so that they always have; naturally they always have access to that. We don't... give them a whole profile of their student. And that's the whole thing a
teacher could discover for themselves, because so often a student does well in one class and has all kinds of trouble in another. So... and to deal with that one of the things that I want to do with that and the faculty is... develop protocol where we have groups threes...teachers...work on this book... excellent, excellent book. So, I'm going to have the teachers do an article on...and this is getting data in a way... it's getting... talking about data on kids. There's a chapter on role models and emotional resource. So, that they get to understand what it is that they have to do to establish relationships with kids who seem to give them a hard time in the classroom... to understand why that kid is maybe doing things the way they are doing. So, the protocol now to use I just read in a magazine... is to sit down in a triad, a triad of teachers hopefully if we have enough minority teachers, have one of those minority teachers in each triad. And I say minority, because so often poverty and minority are the same, and, in fact, when we talk about the achievement gap, it's really an economic achievement gap more than it is a cultural achievement gap and ethnic achievement gap. It just so happens that those in poverty may be in the minority. But I think that it'll make people look at it differently if they look at the economic factor and not at the ethnic, because economic is a changing factor... that's a personal feeling anyway. So, if we close the door and say well, that's an ethnic thing, then we close the door on a kid. If we say it's an economic factor, the more education increases... that's where you can make changes. So, the article has the teachers looking down, reading the article, and then each teacher in the triad will take a passage and then explain to the other group why they chose that passage and talk about it. So, again it's... it's exchanging data and hopefully, out of that, teachers will say, you know I
have a student just like that in my class...let’s see what Johnnie does. So that’s...that’s exchanging data; a little bit different than I think the question wanted, but...

Researcher

Still the goal is the same-student achievement. I guess, we want to move to number seven.

Principal

Yes. What type of training or professional development designed to help them in the use of data is provided?

Researcher

The question actually is designed to provide answers to whether, let’s say once the district gets test results from the state, whether those are given out and is there any training designed for the teachers to learn how to read the results, what to do with them, any item analysis?

Principal

Yes, the district does give us, though this year it’s late. But, in the same way I get that information for the ninth graders, we get information for other students, but it’s mostly on the Regents again and that’s summative. But it’s ok. It has...it has its purpose. And, again, I really think that the data has to be more local and that the kids have...Well, let me tell you what we want and encourage, and we had a workshop for my
department chairmen on error analysis, and that's looking at maybe five years of a
Regents, breaking down to the different performance standards, finding out what is a high
frequency question, and matching high frequency high errors, high frequency low errors,
low frequency high errors, and what do we do about that, you know. But, it also has the
teachers then examine the question itself; may be it was a bad question, maybe it was a
vocabulary issue, why did the kid get it wrong, were two questions exactly the same, is it
confusing? So, again, ideally they all do this. I don't think it's ideal. Even though we
courage that, I don't believe it's ideal.

Researcher
Do they also examine their own work? We all know that, as teachers, some of us have
strengths in certain areas and others in others. So, is there an exchange of that sort?

Principal
There is another protocol that does that, where a teacher will come in a group of his or
her colleagues, and, when we a lesson planning session and have ago around the
table...what's good about, or I don't understand what you are trying to do with this kind
of thing. Unfortunately we don't do it. Is there informal discussions among teachers?
Absolutely...in the teacher prep room. I think there's a lot of informal discussion about
that; you know, so and so isn't doing well, how is he doing in...but nothing formalized
and I think, unfortunately, when it's only an informal conversation like that, it gets...the
tracking of that gets lost. So, it's hard to pinpoint to results. But I think we need to do
more of that. Some teachers do surveys, you know, to find out about data about their
kids... and they do it every year. What are their likes and dislikes; they have the parents so some things as well. Again this is not all; probably just a few do that. But, you know, it starts with a few and maybe eventually... We know that it all starts with the informal teacher leaders and if you don’t have teacher leaders, you don’t have anything. Because, as long as it’s coming down from the top... they’ll always figure that it’s something that they want and part of... I think part of why we... I have not been successful in that; I don’t have too many of them and again I take the responsibility of developing teacher leaders. In fact, I have a great woman that... but, that’s another matter.

The type of professional development, some people have gone out to BOCES conferences on doing data analysis and error... error analysis. I would say that most teachers think though that looking at data is just doing simple item analysis. Some people got this question wrong, other people got that wrong. And that’s ok for a quickie, but I don’t think that it really gets to the heart of it; it doesn’t examine the individual student.

Researcher

And, that’s an area that you are trying to move towards?

Principal

Yes. And I have to say the district is. The district does try to move into that; but, again, I think that the school’s focused on summative tests rather than informative, and that’s why I think multiple assessments are so important.
How do teachers use available data in making instructional decisions?

Well, certainly, you know the differentiation comes in on that, the kind of homework...
there are so many things...

Researcher

Available data also includes conversations with other teachers, not just looking at numbers...

Principal

No...not just numbers. And that's why I said the survey that teachers do, things that the teachers do when they talk about the results in IST, talk about what works. One of the things we do, especially the kids who are having behavior problems is maybe do a behavioral plan, where we ask the teachers why doesn't the kid act up in sixth period but he is...ninth period? What can you do when the kid starts acting up? I had some teachers who say that they know their kid, they know that for forty-one minutes they are not going to stay still. So, when that kid gets a little edgy, the kid stands up and he walks around the room a couple of times coming back and then sits down. That teacher realizes that's what that kid needs and they share it with others, and hopefully get those other people who feel that you have to sit there for forty-one minutes to change their mind. But you know, it always works like that somehow...
Researcher

Are there policies or guidelines in place that outline how administrators and teachers should use data? If so, please describe them.

Principal

I don't know if there are policies, but, certainly, there are... guidelines. I am not sure about the policies; there might be. I mean an eligibility thing, that's a policy. But, we have been guided and we've been encouraged to use data, to drill it down to the individual student. And, again, that's data that includes everything; that's numbers, and knowing the student personality, this kind of thing, understanding poverty... What kinds of policies or guidelines are you thinking of here?

Researcher

Looking at assessment scores before placing a student in class...

Principal

We don't do that any more. Open enrollment says... I mean certainly we look at; it a kid can't be getting a sixty-five and expect to get into an honors class... We put kids... we use different measures to put them in open enrollment. It could be a terra nova, it could be an eighth grade assessment, it could be a Regents exam... there are several items that we look at, and the grade is probably least important in that. So, if we are looking at formal standardized assessments, we may say, hey this kid is capable even though the grade is not showing that, and may be what he needs is a push; and, after we put them in, we say
listen you have to maintain a seventy. We don’t expect it that you are going to get a ninety or a ninety-five in an honors class if you haven’t been there before. Naturally there are... So, certainly there’s policies and guidelines, very strongly for that kind of thing... as far as open enrollment by the central office.

Researcher

What about discipline data used for participation in activities or sports?

Principal

We have a policy that says that, besides being ineligible because of grades, that good citizenship counts and that students can become ineligible or denied extracurricular if their behavior doesn’t demonstrate, you know, good citizenship. I have to tell you that the thing that really makes a kid ineligible is the grades. And even though that’s there; in fact, two weeks ago, I made some copies of it to show some kids, to say this is... if you want to play football... It’s there, it’s the policy. The data-the numbers data... is where... Unfortunately, I think most schools have gotten into that. I don’t know -what the pressure is to do that. But, we don’t seem to... we don’t seem to concentrate on the citizenship piece.

Researcher

What skills do you feel are important in analyzing school data? Identify those skills for which you personally feel strong.
Principal

Again, when you say school data, I automatically think of numbers. And I think of numbers as they are related to grades, to disciplinary referrals, cuts...

Researcher

These are the types of data that I asked the teachers if they used (on the survey).

Principal

Yes, definitely attendance and discipline records, internal assessments, information from teachers, absolutely, informal observations, standardized tests, performance indicators. Yeah, we had … we didn’t go forward with that. We’re still, I think, trying to hone some of the data that we get online that’s comparing us to the region or to the county or to the state. Demographic records- absolutely that’s all used. I just ran a report recently to find out how many students were suspended over the last two or three years for use, possession, or sale of alcohol and drugs and what’s happening. And I saw a jump from two kids in one year to eleven another. And what do we do with that? How does that prompt us in a direction?

Researcher

Do you, yourself, actually handle this data or do you have another person organize it?
Principal
No, I handle it... because I find that, when I am doing it, other things open up for me. So, if I'm looking... if I design a query, and sometimes I need help in designing the query, if I want to look at the discipline... we can code the disciplines by the code number. I can see how many kids were involved in fights. Yes, central office does as well for the state report. But, that's something else; and, you know, I'm... I'm looking at really who are these kids? Is it one ethnic group more than another? How many repeats? How many students have repeated? Is it always the same students? And, you know, you spend ninety percent of the time on five percent of the kids, right? Or ten percent of the students, but... So, you know, it's always used. Again, sometimes it's unfortunate, because sometimes the job doesn't allow you to and keep going and keep going, because of the interruptions. And, that's unfortunate.

Researcher
Having an assistant principal must help a little?

Principal
I have two really good individuals. I have one assistant principal who does the scheduling of the building and the grade report; and she is so bogged down with that I don't know that they ever get to ask those questions. It's unfortunate, however...

Researcher
So, at this point, are you the leading force...
Principal

For pulling out this information? Yes, unless I am absent and unfortunately...and that’s an unfortunate piece...But I think it’s a matter of...not that they are not capable but everyone gets so bogged down with directives, things that have to be done.

Researcher

Well, do the teachers realize that the value of data is not just numbers and it’s not just scores and they can learn so much more about their students?

Principal

I think they are beginning to...Again the response that I get is they don’t do homework, they don’t come to class, they don’t...So if you keep getting those responses, you know they are not looking at best practices, not looking at what role do they be playing in this. And, you know, it’s hard. I mean, at my other school I had a teacher who would complain because kids were not doing as well on a test that he gave the kids twenty years ago. I mean just that alone; he didn’t realize what he was saying. Why do you have a test from twenty years ago? So it becomes then something like tunnel vision...This year I have said to my secretary from 11:30 to 1:30 I don’t want to be disturbed; I need to, at least, go through my mail which, because I was away, I haven’t done yet, and start looking at other things; other than being distracted by something that’s going on in the hallway...And you know, if you are going to do data, you can’t sit and be interrupted every five minutes. And I have to tell you; I got home at night and I tried it at home and...
...But I mean it is useful I believe in all these things and I think if we can look at a way I don’t know... You see I don’t think it’s the district... The teachers can do whatever they want, but until you bring it down into the classroom, until you have a conversation with the... and certainly the district has to have the... there has to be the exposure to what’s available and that’s very important for the district. I really think that teacher made assessments, when teachers sit down... Even though this district has been very very good in providing the volume with data that has become key in the decision-making process; it will not happen unless the teachers believe. And the only way the teachers believe is by the conversations they have; because it’s the conversations that are important. The conversations about a student; not the conversations about oh seventy-nine percent of our students got advanced Regents diplomas... it doesn’t mean anything, it doesn’t tell us anything about a student. And, that’s not a conversation anyway.

Researcher

As a school leader, what facets of your school’s use of data are most effective? Which facets would you like to change or improve?

Principal

I think I’ve answered that.
Transcript of interview with Principal of School C

Researcher

How is individual student growth measured in your school? By whom?

Principal

I would say the primary way that students' individual growth is measured is by the classroom teacher and that the primary... manner which the student's growth is measured is by teacher observation or either students' performance in the classroom, and that could be any kind of performances; we have so many different subjects taught, it could be an oral presentation or written assignment or homework. So, mostly teacher-designed instruments that help teachers measure individual student growth from either day to day or unit of study to unit of study. That's, I would say, the most basic form. Beyond that you have the more formal unit tests or department subject tests that then lead teachers to analyze student mastery by grading and then of course producing an average on the report cards. The report cards then become a very formal and official assessment of the students. And that is one of the ways we track how students are doing from semester to semester, or even from quarter to quarter. On more... school wide level, individual student growth also comes in the form of statewide assessments; whether it's the city, I'm sorry, the statewide assessments that are issued in English Language Arts and other subjects based on the students' grade. Now, we have grades 3 to 8 testing so those assessments are also available; and... a combination of teacher observations... developmental pieces that... teachers and guidance counselors also
observe and assess. So, I'd say there's a wide variety from academic growth to social
growth, and I would say physical and emotional that comes with the nurse’s assessments
in... in terms of how students are faring.

Researcher

Who determines the school's organizational goals? Please, describe the process used in
this determination.

Principal

Again, I think the determination of the goals for the school comes from, of course, our
federal government. The No Child Left Behind Act does identify what each school is
supposed to be able to accomplish at each grade level for all students. In addition to that,
you have the statewide mandates that then impact on what districts must implement. As
a school principal, I work closely with the staff, parents and with students to determine
what the real needs are at the school level. So, the implications for addressing the needs
of the students, the staff and the administration in terms of our whole community is... is
done on a variety of levels, whether it's some survey, conversations, observations, the
rate of incidents... whether it is disciplinary or academic, deficits, or assets. Then those,
all those help us then to determine what the school's organizational goals are going to
be, whether it's a priority for a particular year or a particular period of time. And how
we do that is... the process is: first of all, my conversations with the superintendent,
discussing her priorities, our school board of education always meets and sets their
district goals and then helping us to shape, specifically for the three grades we are
responsible for, what we need to put into place. So, that all those help us to then... but it's a collaborative effort. I wouldn't say there’s one person. It's teachers, parents, students, administration... I see the goals in the middle and may be a whole series of arrows of all the different stakeholders giving us information about what should come from the center.

Researcher

Are teachers held accountable to school goals? If so, how is their accountability determined?

Principal

I would say that teachers in terms of accountability to school goals... they are held accountable for implementing district-wide initiatives, curriculum units of study. They are held accountable for implementing a proper pacing of curriculum for students to be able to achieve the standards based on education we want all students to access. Their accountability is usually based on observations of classroom practice; administrators going in and providing teachers with the opportunity to demonstrate their expertise and then administrators giving feedback about whether or not what they are doing in their practice is actually aligned to their goals. And that's recollected at the end of the year evaluation, where they receive... a final... summary of their practice regarding whether or not they met expectations, exceeded them, or did not meet them. And, then, that document becomes part of their personnel file which does indicate that they are held accountable for achieving certain levels of practice.
Researcher

Do they set their own goals in terms of actual practice?

Principal

I would say that every professional educator has their own personal goals. We do not hold every teacher responsible or accountable for putting their personal or professional goals in writing until they are tenured teachers. Tenured teachers do have that as an option, where they can design their own professional learning goal. It’s something newer, it’s coming into the district now with our new evaluation system where we are helping teachers write smart goals, measurable, attainable results-oriented goals that are directly linked to their practice; so if they are choose to go the route of the alternate... alternative assessment option, they then sit with me or with another supervisor to determine what their goal is for the year and to tell us what kind of evidence they will provide at the end of the year that they’ve met that goal. But that’s only for those teachers that have already tenured. For the teachers that are non-tenured, new to the building, or new to teaching their goals are more determined by the evaluation system that’s in place by the district.

Researcher

Do teachers personally feel accountable to school goals?
Principal

I believe they do. I feel that strongly here. I would say that in order to accurately answer we would have to ask every individual teacher. But on the part of the community, the learning community, the teaching community, I would say teachers do feel personally accountable... And that's just demonstrated in their practice, in their meeting together, collaborating to meet students' needs; asking questions, meeting with the parents, identifying students at risk. So, I do feel that there is a personal accountability that helps them to invest in that planning...

Researcher

What role does data play in your daily decision-making?

Principal

I think data is coming to us at every moment of the day, whether a new implication from data that we've already had available to us or new data that comes at the moment. And data could be how many teachers are absent today to how many teachers are retiring in June to... how many students are in danger of not meeting the standards when the test is in January to how many students have received certain levels of service... I think that all of the data that we have available to us plays a part in how we make decisions; and the information we have is not just about students, it's about teachers, it's about support staff, it's about parents, about incidents, it's about community information. So, I think... that's our main responsibility... is to be very updated in terms of the information that exists about our school and all of the stakeholders.
Researcher
How is available data disseminated among the staff?

Principal
On a formal level, every teacher, especially in those areas of instruction that are tested-assessed by the state or given any kind of formal assessment district wide, all teachers have access to individual student information as well as grade level and school wide information, besides the fact that every school has a report card that is officially kept on line by the state. So, all the information is disseminated at the district level directly to teachers, but through us as administrators...being able to explain, it work with it, determine implications from it, and help teachers to analyze it so they can design instruction.

Researcher
Are teachers encouraged to use available data in informing instructional strategies? If so, what type of training or professional development designed to help them in the use of data is provided?

Principal
Our district has provided training already on helping teachers understand the data that is provided to them, data driven instruction, data driven decision-making, and planning...At the school level, teachers working together with supervisors and department chairs to analyze the data about a particular assessment that was offered to students and how they
fared in that assessment. Whether it’s looking at... the analysis of the errors that students made or the mastery of certain skills and concepts. Teachers are having more conversations I would say now than before, and when I say before-before I came here and even in my comparison to where I practiced before. I find that teachers are more comfortable of discussing data because there has been so much professional development, workshops, training, online seminars, and conferences that have given them the opportunity to understand that the data is information that informs how they teach. And the first part, whether they are encouraged, I think this district does a great job of encouraging teachers to really use the data for planning.

Researcher
How do teachers use available data in making instructional decisions?

Principal
One of the very specific examples I can give you is that, for students that do not reach mastery in English or math, we have asked our district to help us... develop data folios for students. And so, the teacher that provides the additional service for students that are not at mastery level, they have access to a file of information on a particular student; so that if they are teaching a skill in English Language Arts...for example...inference skills, they can actually pick up a folder that tells them exactly where each student is in that particular skill. If they’ve mastered it, they might be able to move that child to a different group. If they have not mastered it, it will inform the teacher’s decision to place that child in a particular instructional group. So, how teachers use data is to have it very
available to them and to also monitor the students' progress in a particular skill or concept area.

Researcher

Are there policies or guidelines in place that outline how administrators and teachers should use data? If so, please describe them.

Principal

I think, in terms of policies, I would refer mostly to what we are expected to do by the state and by The No Child Left Behind Act to ensure that every child has equitable opportunity to meet mastery and to meet the standards, and exceed them wherever possible. So, there are policies that hold us accountable in schools to provide all the services and supports necessary to help kids move in a particular area. The guidelines, I think, come more from the district office, where it's more of a conversational piece and ideas and strategies for how teachers can use the data...In terms of as as administrators, we are held accountable for knowing about our school, knowing individual students as well as groups of students, subgroups of students and whether or not they are meeting mastery because then that really determines how we use our resources, whether financial, personnel, materials, how we develop programs, how our schedule looks, how our kids are placed in the morning versus the afternoon. I mean, all of those decisions are based on what we know about the school. So, I think it's, if not a definite mandate that's written about, I think it's such a clear expectation that any administrator or teacher knows that what we do is based on real information and what's available to us.
Researcher

What skills do you feel are important in analyzing school data? Identify those skills for which you personally feel strong.

Principal

I think the skills are a combination of being able to use technology, being able to disaggregate data. Sometimes the message we get from the whole picture is not what is the truth or the reality of a subgroup within that big picture. So being able to really tease it out to identify if the strengths that are needed for the entire school are really the strengths of every child and the weakness that is not noted for every school are really the weakness of every particular classroom... So, the ability to take that big picture of data and really break it down into its components and then again putting it back together to create the big picture... for staff and for students to let them know that what we are doing is purposeful, meaningful, and addressing a particular need. So, I think the skill is about how we are able to communicate the numbers, the graphs, the pictures, percentages, the pie charts that could be so overwhelming, and say: and this is what it really means for you as a teacher. This is all the stuff, but, this is what it all means for you as a student. This is what it means about your child. So to be able to translate data information and numbers into language that everybody understands so that it impacts on their work in a meaningful way; that it doesn’t scare them into doing something. It’s like a doctor giving you your x-ray. You don’t know what you are looking at until they break it down and say: it’s like a balloon that’s ready to pop and then you know that you are in trouble. So, you know, when a doctor explains an x-ray to you, they are explaining it to you based on
what you understand. I think the administrator has to have that skill of communicating data in layman’s terms, or terms that are common language for everybody. The use of technology, that skill of using the technology to create a different type of presentation of what sometimes comes to us in gobbledygook computer language. We need to be able to do that; using technology, translate data into a picture that makes sense for people to really visualize it exactly. And, I think, also the ability to help teachers understand that what they do is for them to be able to change what the data says about some students.

So, if the student has a deficiency, then, the implications for your practice are so that that data looks different and that you actually be able to measure the impact of your practice by doing the before and after assessments. So, those I think are the specialized skills that an administrator needs to have. I am sure there are a lot more imbedded than that, but...

Researcher

As a school leader, what facets of your school’s use of data are most effective? Which facets would you like to change or improve?

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Principal

I think the ability that teachers have to comment or to collect on data right now is... I am going to start with what I would like to see change or improve. I think teachers and administrators altogether, we can be a little more strategic. I think it’s about being strategic... I think people are understanding the data. I think that they are able to understand it. They are able to point out, ok, there is a fire there and there’s a flood there, but I think its about now what do we do to keep that fire from burning everybody and
how to keep the flood from overwhelming everybody. It's about the implications, the strategies that we use as a school. And sometimes an individual may have a strategy that works, but it's not necessarily a pattern throughout the building. So, I would say in my ideal perfect school, that what I would like to see improve is strategic implementation of practice to improve student involvement.

Researcher

For administrators as well as teachers?

Principal

Yes, also for administrators. I think sometimes we get caught up in the big picture. Our school is doing well, it really is doing well. So, what does that mean? It's pretty good. But, what's pretty good? Pretty good is not good enough, and, if you are good, then you are not great. That has to sink into the mindset of when we look at data, if 79% achieve mastery, it's not good enough. It's not good enough, because there is 21% somewhere, sitting not knowing what they are doing. I need to know that that 21% counts, and that what I do is not just to maintain those 79% where they are and maybe to improve, but that those 21% become part of the whole picture. So, I think it's a mindset that I think our administration needs to also embrace that we are always working towards achieving mastery. And mastery for me would be 100%, you know, it's not 89%, you know... it's... And I say this to teachers also. If the doctor walks in and tells you that they can get 89% of what they attempt to do with you, you want to know what happened to the
rest. And parents deserve the assurance that, even if we don’t achieve it on a daily basis that, we are working towards that 100%.

Researcher

Anything else you would like to add?

Principal

... I guess, not that I would like to add. I guess... I think it is important to know that sometime: the data that we see about schools, the numerical assessment data doesn’t always reflect all of the challenges that teachers face, and that students face, and communities face, and the real practical minute-to-minute day-to-life of the school is not reflected in those numbers. And that a one-shot picture of the school based on a number that’s given to us by the state department or by any, it doesn’t have to be the state, it could be any assessment, it won’t necessarily imply... it won’t reflect all of the different factors that could impact on a student on any given day in a school especially middle school. On any given day the smartest child will not achieve mastery because of things other than the academics, and I don’t know that that message is clear everywhere. There is too much... there is such focus on academic achievement and a lot of the other achievements of children are not being weighed or celebrated enough. I guess that’s all.
Transcript of interview with Principal of School D

Researcher

How is individual student growth measured in your school? By whom?

Principal

We use a variety of measures to assess students' work. In Kindergarten, Grade 1 and Grade 2, we have the primary literacy assessment that is used and that's administered three times during the year by the teacher. At the upper grade levels we have...we do a multitiered assessment...we do DRIs...It depends on what we are looking in terms of the kids' needs. And we use those assessments...as more diagnostic to provide information to help us to address the needs of the students. In addition to that, we...also observe the kids, because we want to look at the whole child. It's not only the academic progress; we look at the social interactions, also the emotional growth. And to assist us in that area we have a social worker and a school psychologist. So, it's really a team approach. It's not any one individual. We look at the kids, where they are...and we assess as we go along...so it's ongoing. Assessment is ongoing, it's informal, it's more formalized in the chapter tests in social studies and math and...so on. So, it's not...there is no one measure that we use...Again, we determine what it is the kids' needs are; and, to provide more information for us to better be able to meet their needs and inform our instruction and curriculum, we then assess to get that additional information; and we all put our heads together as a team to do that.
Researcher
Who determines the school’s organizational goals? Please, describe the process used in this determination.

Principal
When you say organizational goals, what exactly do you mean?

Researcher
Goals in terms of looking at where you want the school… in what direction you want the school to move in terms of student achievement.

Principal
That again is done collaboratively with faculty… with the whole body and students as well, because now we have a student council and they have some say in how school is organized.

Researcher
On the elementary level?

Principal
On the elementary level, and it’s mainly… from three to five. But beyond that, it’s a collaborative approach. I do have an advisory team; we look at the assessments here; of course we have the state assessments which I didn’t mention when I answered the first
question you asked... but our third, fourth and fifth graders are assessed, as you know. We have the ELA; the math, science in fourth grade; and... in fifth grade we have the social studies test. There's a lot testing going on besides... the local testing and assessments. So we sit and we look at the data to determine where we should put our focus for the year; and the error analysis is one of the areas that... is top priority for us because... the information that it yields really does help us to plan and to determine what kind of staff development we need as well. So it informs our instruction, it informs our staff development needs.

Researcher
Are teachers held accountable to school goals?

Principal
Oh, absolutely.

Researcher:
How is their accountability determined?

Principal
... And who determines it? Again, as the leader of the school I try to use a collaborative approach. Certainly, I walk into classrooms, I do formal and informal observations, and I can determine from them whether or not the teachers do have high expectations for the students; how do they communicate those expectations, and if they do not, then what do I
do as the instructional leader? Beyond that, in terms of accountability, we have the assessments that the kids are administered, and that to me is information that I use to determine whether or not the teachers do their part to ensure that all kids are receiving a quality education. Part of our discussion at faculty and curriculum meetings centers around student achievement and expectations for learning and what is it that we as a faculty can do to ensure that all kids learn at high levels. So, it’s an ongoing conversation and providing the support for the teachers who seem not to have as good a grasp of how to communicate those expectations to kids, whether it’s in terms of verbal as well as nonverbal communication. The way they call on kids in the classroom, the ones who remain in the dead zone, so to speak, and therefore do not or aren’t given the opportunities to participate, you know, in the way that they should; because there are kids you might have an expectation of... those kids who may not be able to answer the question, and so, instead of giving them the wait time, you kind of quickly pass over them because you do not expect that they can answer. But for the student who you think can answer, you will be: “ok, now do you remember...?” You are giving them clues. So, there are subtle ways that teachers communicate different expectations, and I am very attuned to that because that’s one of my... I guess one, of the areas that I feel very strongly about—that kids rise to the occasion. If you expect that they will succeed, they will succeed. If you don’t and you communicate that to them, well, you know, it’s a self-fulfilling prophecy. So, I do hold them accountable, and, they will tell you, I do not let up, and I would question, and I would probe, and I would ask them: how do you think the child itself finds x, y, z. And it’s constant, and we are working on that.
Researcher
Do teachers personally feel accountable to school goals?

Principal
I think most of them feel accountable; I think all of them do is varying degrees, you know, because let's face it... the bottom line is we are here for the kids and we want the kids to do well. I think my hesitation lies in the fact that some teachers will go the extra mile and they will do what it takes, sort of speak. There are others who nevertheless....

Researcher
Do only what they need to do?

Principal
Absolutely.

Researcher
What role does data play in your daily decision-making?

Principal
In my daily decision-making... Well, data can take various forms. I mean when you are talking about data it's not only academic. It could be behavioral, it could be number of absences or lates... in that sense it would depend... if I am talking about academic or achievement data. For example the test data -- once we analyze that... if I determine, for
example, that for a particular teacher the children did very well in the main idea of the question and for another teacher her students didn’t do as well, then is it a question of what could have caused that? Is it because that skill was not taught? Is it because the strategies that the teacher used were not as effective as this other teacher’s? So then, I would probably have to have some visitation once I’ve determined... provide some staff development in that particular area. Its form could be sit in on, you know, a lesson of that teacher whose students did extremely well on that one skill so that the teacher can then see how she does it as a model. And then for myself, going into the classroom and modeling for the teacher; also going in to observe to see, you know, how the teacher is teaching that skill. And so that’s some of the ways. If it has to do with discipline issues, we sit down and provide some staff development for the teacher, because may be the approach that she is using is not effective with the kids. So, you use it, you know, depending on what it is to address the issues that you have identified “improvement needed.”

Researcher

How is available data disseminated among the staff? And once again, data of all sorts, not just assessment data.

Principal

Yes, of course. How do we do that? We have various ways of communicating to staff at faculty meetings, which would be a two-way communication because I am giving them information; they are discussing and sharing. I do what I call “What’s Happening” every
Friday that I put in their boxes with, you know, information and just basically pointing them in a sitting with me. We also have team meetings, that's another good way that we have... we sit and analyze data. And what I have asked them to do... we have progress charts for every kid so for example every quarter they do the formal or informal type of assessments and they have to come and use the post it's. They try to identify the concepts and skills that they are weak in. So, let's say you have three students and... I started to do that because I realized when they would come to me they would say "well the child has poor reading skills... his reading skills are very low-they are below level."

What does that really mean? Let us analyze this. Does the child have good decoding skills? Yes, but when it comes to comprehension, ok, we break down comprehension because you have the main idea, you have supporting ideas, may be there are inferences, and so on and so forth. So the goal is to get it to be more specific. And every week we look at that; when they come in, I want to see that there is some progress; so if a child has three different post it's on the three different scales of concepts, at least at the end of six weeks you can say "well, I worked specifically on that skill with the child and I have done my post test; and now I think that child has gotten it and now you remove that post it - now there might be two other post it's left...so you then have to again provide instruction to address for just those and then eventually they will all be out. So that's one way we try to make sure that we did not lose any child.

Researcher

So you work with that teacher and support teachers?
Principal

And reading teachers. We have one reading teacher. Well, we have a part-time 0.5 reading teacher and the one-and-a-half. No, let me see about that again. We have a 0.5 five staff developer for reading and then we have one-and-a-half reading teachers, so we have two of those. One does staff development for half of the time... we'd love to have two, but we only have 0.5. I think that answers that question.

Researcher

Yes, thank you. Are teachers encouraged to use available data in informing instructional strategies? If so, what type of training or professional development designed to help them in the use of data is provided? You touched a little bit on that already, so if you want to move on to the next question?

Principal

OK

Researcher

How do teachers use available data in making instructional decisions?

Principal

I think I touched upon that too, but it's all tied in. I think one book that I read here was data rich but information poor; you have a lot of data but you don't have the information that would help you then to transfer that into your classroom instruction... The reading
teachers are also very instrumental in helping the teachers with data analysis. We do that in our team meetings and...to provide strategies, we brainstorm strategies that are addressing the needs identified as a result of analyzing the data.

Researcher

Are there policies or guidelines in place that outline how administrators and teachers should use data? If so, please describe them.

Principal

No. I attended a lot of workshops and so on and so forth. But in terms of district, I would say no.

Researcher

What skills do you feel are important in analyzing school data? Identify those skills for which you feel strong.

Principal

First of all there are a lot of skills that you need because it's not just looking at how many items the students got right on the test. You have to be able to determine which are the most important skills and concepts that the children...got right and the ones that they didn't. And I am saying that because there are some questions on the state test that are rated to discriminate between the fours and the threes; and, is that a question that the test developer expected everyone to get right? And having identified that, then you know that
you don’t need to focus a lot of your energies on that one or two questions but rather you have to look at patterns. You also have to be able to determine why you think the child chose one answer and not the other; and, is it because the child really did not understand the other question? The vocabulary? So, you really have to be able to distinguish; I think that’s the right word; these things. That’s why the teachers need screening and error analysis. It’s not something that you can do well unless you have some kind of training, because there are a lot of things that might cause...a lot of factors that might cause a child to choose one response over the other; and it’s not always as clear-cut as we think it is...I mean it could be that the question was meant to trick the kids. For example, “what is NOT” instead of being a straightforward question. And then, once you identify those things, then you are able to provide the instruction. And then you have to look at the questions and determine whether the children got tired and there was loss of stamina because these tests sometimes get very lengthy and children get tired very easily. We tend to see that the very beginning ones, they get them; and at the end, you see where they start fading because of the loss of stamina...so there are things that you really have to train to look for when analyzing data. These are just some of them.

Researcher

Our last question is as a school leader, what facets of your school’s use of data are most effective? Which facets would you like to change or improve?
Principal

I think the most effective is the way most teachers dialogue with me and the reading teacher and the way we analyze the data so that is not central office driven. We are given the analysis; but looking at the item analysis, looking at what the kids get wrong, how many kids got this one wrong, why did they choose that item of the answer in multiple choice, why did they choose, whether it’s a, b, or c, when the answer is c, and then, figuring out... ok, how can we then work together as a team, brainstorm strategies or ideas or approaches to address that with the group of kids that we have... that we are working with. I think that is most effective. It does not work when the analysis is done outside of the building... it has to be the teachers putting their heads together, analyzing the data—what is the data telling us and what can we do as a result of that information that we got from the data?

Researcher

So, you are looking at the data across the board as well as the data for each individual child?

Principal

We do look at each individual child; we look at it across the board as a school. And certainly, when the teachers are sitting down, they are looking at it for each individual child, especially if they still have their students currently sitting in their classroom. But I think it’s most effective if it’s analyzed at this level because they know the kids and they have a stake in this. It’s not that, at the next level, they are bringing it in and say ‘ok, thu
is what the data is telling us what you are going to do about it?" They've actually seen it. What we've done with the ELA...we have the papers, the actual test booklets, and when we get the results we say "ok, let's go back to the actual sample of work and really take a look at it and see what it is telling us about that child." So we do look at individual kids ---why did Child B choose this answer and got it right and Child D chose another answer, and try to figure out what was going through their mind, what they were thinking.

Researcher
What would you like to change or improve if anything?

Principal
In the school?

Researcher
In terms of the school's use of data.

Principal
...What would I like to change? I don't know-we do a lot with data here but, certainly, it is a process; it's new to a lot of old faculty and staff...I would like to see those who tend to be the outliers, kind of, move more effectively to informed instruction. Some of our staff members and faculty do that very well; others need to include thoughtful use of data...And I always say "where is the evidence?" whenever a child comes before the
IST...they have to come in with the data-they have to come in with the information-the
evidence...and let's look at it, and then, you know from that, try to figure out why the
child is not doing as well as he or she could be doing...so I would say to use the data
more consistently to inform instructional decisions and also curriculum.

Researcher

Anything else you would like to add?

Principal

No, I hope that was helpful.