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AN EXAMINATION OF TEACHERS', INSTRUCTIONAL SUPPORT STAFF, AND ADMINISTRATORS' ATTITUDES AND BELIEFS CONCERNING DATA, DATA-DRIVEN DECISION-MAKING AND ITS RELATIONSHIP TO STUDENT ACHIEVEMENT.

LaShandra Antionette Hodge-McClure

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by

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ABSTRACT

The Every Student Succeeds Act has an accountability model that holds the educational system in the United States accountable. It was decided that students throughout the United States should be held to the same standards, independent of where they lived. Furthermore, the Every Student Succeeds Act seeks to provide considerable opportunity for all students to obtain a fair, equitable, and high-quality education and reduce academic performance disparities. The study aims to identify the role teachers, instructional support staff, and administrators' attitudes and beliefs regarding data-driven decision-making plays in student achievement.

Data-driven decision-making is the systematic process of gathering, evaluating, and interpreting data to inform education decisions (Schildkamp & Kuiper, 2010; Mandinach, 2012). Teachers and administrators typically analyze data collected at school, district, or state levels to make an informed decision on possible ways to make an informed decision about educating students. With the push for more accountability through test scores, teachers and administrators must take the data provided to make knowledgeable decision. This research provides a perspective on this vital topic in hopes of increasing the literature.

A survey research method was used to perform a quantitative study. A Teacher Data Use Survey was completed by 52 teachers, 12 instructional support staff, and 5 administrators at a public school district in western Mississippi. The study's findings show that the attitudes and views held by teachers, instructional support staff, and administrators toward data, data-driven decision-making, and the student achievement were consistent across all their categories. Attitudes and views regarding data, data-

driven decision-making, and student accomplishment among teachers, instructional support personnel, administrators were not statistically significant. Concerning the study results, suggestions were also given concerning creating data teams to promote continuity across the school district. The implications for future study include delving deeper into other sources that can assist in student achievement. Another implication of this research was to promote equity amongst all students to increase student achievement.

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DEDICATION

I dedicate this paper to my Lord and Savior, Jesus Christ. Without Him, I could not have made this journey. Commit to the Lord and he will establish your plans; Proverbs 16:3.

To my husband, Lonzo McClure Jr., I want to extend gratitude for your love, patience, and help throughout this process. Your love and support meant more than words could ever say. You are my rock. To my wonderful children, Nayla, Lonzo III (Trey), and Nia, mom loves each of you, and thank you all for being patient and awesome children. No complaints were made when I had to attend school or work on my paper; thank you for your understanding.

To my mother, Verlene Hodge, who would have thought you would have two girls receiving a Doctoral degree? Thank you for being the best example to me of what a hard-working mother should be. To my sisters, LaKenya and Verlonda, I could not have faced this without your all's encouragement and support. Sister, you really came through in the end and I am grateful. To my in-laws, Reverend Lonzo McClure, Sr., and Doris McClure, I could not have done this without your prayers and encouragement. You are the best in-laws, and your support and love mean the world to me. I would also like to thank my entire family. To my late grandparents, Lee and Agnes Hodge, you both are with me in spirit.

Trust in the Lord with all thine heart, and lean not unto your understanding, in all your ways acknowledge Him, and He shall direct your path. ~Proverbs 3:5-6~

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ILLUSTRATIONS

LIST OF ABBREVIATIONS

DBDM	Data-based decision-making
DDDM	Data-driven decision-making
ESSA	Every Student Succeed Act
NAEP	National Assessment of Educational Progress
NCLB	No Child Left Behind
OECD	Organizational for Economic Co-Operation and Development
SPSS	Statistical Package for Social Sciences
STEM	Science Technology Engineering Mathematics

CHAPTER I – INTRODUCTION OF THE STUDY

Background of the Problem

Pressure from local, state, and federal stakeholders on accountability policies for student achievement is overwhelming for both students and teachers. The use of data for accountability is still heavily emphasized by federal, state, national testing and compliance guidelines (Hargreaves & Braun, 2013; Nichols & Berliner, 2007). All sectors of society rely heavily on data to guide their decision-making processes, from the marketing industry, which alters its sales strategy based on the study of customer behavior, to the pharmaceutical industry, which assesses the treatment efficiency of its product, to the teaching industry, which adjusts its approach based on the identified needs of its students (Lai & Schildkamp, 2013). There is a growing emphasis on using data to drive decisions concerning educating students if this will increase student achievement.

The new adoption of the Mississippi College and Career Readiness Standards in 2010 was set in place to provide students with standards that are of higher expectations and rigor. Students are part of a new technological society that changes daily. If students in the United States plan to compete globally, they must first achieve at the same level as their counterparts worldwide. To this end, the emergence of the necessity to make data-driven decisions is at the forefront in the educational realm. The data catalyzes change. Students and educators are urged to adapt to what the data is saying and make informed decisions to move students toward achievement.

In 2010, the Mississippi Department of Education decided to adopt standards that were considered more rigorous. Mississippi's College and Career Ready Standards were designed to accomplish the same objectives as the Common Core Standards. To afford

the students of Mississippi a level playing field, the Mississippi College and Career Readiness standards were executed to ensure the achievement of Mississippi students parallel with students from across the United States. The standards outline the areas of English Language Arts and Math that state what skills students must master at each grade level. The push for increased rigor and continuity across the board was a national call to action through reauthorizing the Every Student Succeeds Act. To this end, the state of Mississippi must work diligently to ensure decisions are data-driven and lead increase student achievement.

Curriculum can be defined as knowledge and skills to be learned by students. Determining what should be taught today to prepare students for the future will mean researching what type of employment will be present. Jobs of the future, according to Partovi (2018), will combine human and artificial intelligence.

In redefining what foundational education looks like, properly implementing the College and Career Readiness Standards are vital. Schools are urged to make computer science a required subject so that all students can acquire the necessary skills for succeeding in a technologically advanced society. Computational reasoning, interface design, data analysis, cyber security, network architecture, and robotics are all part of computer science. Students will need to acquire the skills relevant to the 21st century, such as teamwork, innovation, critical thinking, and communication. The future of the Education and Skills 2030 project is from the Organization for Economic Co-operation and Development (OECD). They have two aims for the project: What knowledge, skills, attitudes, and values will today's students need to thrive and shape their world in the

future, and how can instructional systems develop these knowledge, skills, attitudes, and values effectively (OECD, 2019)?

Educators rely on the statistics to inform their decisions when determining what it means for students to have learned and accomplished learning objectives. The data also shows that a certain demographic of students does not perform as well as other students on the state assessments. This discrepancy in student achievement scores across the states has been coined “the Achievement Gap”. According to Anderson et al. (2007), the achievement gap is the disparity in students' performance on standardized tests of academic proficiency at the state and national levels. The gap that has shown great concern for quite some time is the difference between white and minority students. Although these two demographics of students are of great concern, researchers must not negate the fact that other subgroups are included.

The achievement gap can include but is not limited to the difference in a student’s ethnic, racial, gender, disability, and income regarding how they perform compared to their counterparts. One of the most important concerns is determining what can and should be done to make the playing field equal for all students. The emergence of equity versus equality has become a significant proponent when discussing closing the achievement gap. The achievement gap has been noted in the early educational stages of a child’s life. Dotterer et al. (2012) proposed in their study that the socioeconomic and academic knowledge of potential parents had a direct relationship with student achievement, which is present before students begin school.

Although there has been extensive research on this topic, stakeholders have yet to make progress in closing this achievement gap (Kulm, 2007). The academic achievement

gap continues nationally with all of the new policies and the adoption of the Career and College Readiness Standards. Moreover, the gap is present now, especially in STEM-related fields, is more evident when job opportunities are involved. Inequalities in access to jobs in engineering and technology can be traced back to racial differences in students' performance in science and mathematics (Mau, 2003). The gap in math scores between black and white pupils decreased between 1978 and 1999, according to the National Assessment of Educational Progress (NAEP) statistics, but has subsequently widened again (Cavanagh, 2009). This information contributes to determining how to use data to increase student performance or achievement.

There is an overflow of data in today's society, but what should be done with it? Students, educators, and other educational policymakers must now take the data provided and make effective decisions. Smith (2019) states that data was like weighing a pig. The measurements of the pig are known, so what can one do to fatten it up? Students and educators must take the data presented and determine what to do with it. Some schools have taken the data, and students create data walls to remind them of what scores they must make to move to the next level. Identifying specific strategies to help improve student test scores are essential. White students and students of higher socioeconomic status are performing better academically when compared to minority students or students from lower socioeconomic status.

This conceptual framework has many points of view that describe what data-driven or data-making decisions truly mean to students and educators alike. Students, teachers, and administrators alike have questions or concerns in areas where information must be gathered and evaluated prior to any decisions being made that will help improve

student achievement. This information begins at the classroom, building, and district levels. This paper will hone in on the building-level and district-level responses to data and its effect on academic performance. Although information will be gathered from multiple data sources, this paper will focus on local data. Organizational learning theory and the use of data will be the crux of this framework.

The framework will also use an analysis of the data from a transformational point of view. According to Ackoff (1989), there is a continuous progression from raw data to useful information to fully developed, decision-making knowledge. In the onset, data is described as raw by Light and colleagues (2004). It can be presented in any form, regardless of whether it is usable. Data can become usable solely based on the comprehension level of the person(s) looking at the data. The data contains information that could become meaningful when applied to a context. Transforming the data into a contextualized state allows individuals to provide implications that allow for room to make data-based or data-driven decisions. Knowledge is the theoretical or practical understanding of a subject matter. Regarding student performance, the students', teachers', and administrators' capacity to analyze student performance on a variety of items in light of classroom instruction and to act on this analysis represents knowledge.

The continuum illustrates the natural development of information processing from raw data to actionable insight. It is rooted in the details of the classroom, the school, and the district, each of which will make decisions according to an array of factors and use a variety of data. Schools have the critical job of ensuring students are mastering the taught content. Its goal is to educate the whole child by providing an environment that is inviting and safe and delivering rigorous content. With the ever-changing world of education, it is

a fast-paced race to ensure students are being taught content that will create an opportunity to compete globally.

Given these points, we must also discuss what it means to compete globally. Therefore, the Common Core standards, which led to the emergence of the Mississippi College and Career-Ready Standards, should be scaffolded to maximize student achievement. The standards of the Common Core were created so that they would expand upon the most recent ideas regarding the preparation of all students for success in college, career, and life. This was required to provide an unbiassed education for all students. Accountability is a significant proponent of successful schools. How well students perform on state exams is now one of the most critical outcomes in education today. The question now becomes what a good curriculum looks like in the school setting and who is responsible or what roles everyone has to play to ensure teaching and learning are evident on state exams.

According to Olson (1997), all learners benefit more from high-quality instruction when they receive it consistently. When classrooms are equipped with high-quality instructional materials, pupils are more inclined to learn (Olson, 1997). If all of those mentioned earlier are present, the achievement gaps will indeed close since, according to studies, students benefit equally from high-quality instruction and reading resources. Administrators should make a conscious effort to make available any appropriate professional development for teachers to master their craft.

Problem Statement

Individuals in education know that data is often used to drive decisions made in the educational setting. However, there is a lack of research concerning the impact of

students, teachers, and administrators' knowledge base regarding their understanding of data or how they make data-driven strategic decisions to improve student achievement. Students from lower socioeconomic backgrounds continue to face an achievement gap primarily because of the impact that poverty has on their school experience and their ability to learn (Yoshikawa, Aber, & Beardslee, 2012).

With the type of rigor set in place, researchers have continuously identified a lack of achievement, but they have yet to determine what can be implemented to decrease the gap. At the end of each school year, administrators, teachers, and students are often reminded that they bear the burden of proof. Proof that students have successfully gained skills and can compete globally academically. Yet, publications highlighting the need for additional educational reform focus on students from lower socioeconomic backgrounds and poor academic performance.

The United States is one of the leading countries in the world with whom students have access to free and appropriate public education that is satisfactory. A relationship exists regarding the quality and type of education students throughout the United States receive. Due to this variation in academic achievement, minority students from lesser socioeconomic status and students with disabilities have accountability models initially set forth by the No Child Left Behind Act (NCLB), which eventually evolved into the Every Student Succeeds Act (ESSA), due to the increasing need for students to compete globally. A quantitative study will be used to gain more insight into teachers', instructional support staff, and administrators' beliefs and attitudes concerning data-driven decision-making and its relationship to student achievement. This data will be

placed into context by reviewing recent research on data and how to assist students perform better in school.

Purpose Statement.

This study aims to examine the extent to which teachers, instructional support staff, and administrators' attitudes and beliefs concerning data-driven decision-making and its relationship to student achievement.

Justification of the Study

According to the 2019 US News and World Report list, Mississippi ranks 46th in education. Equity and equality are often brought up in the educational system today. Based on the adoption of the College and Career Readiness standards, all students are being held to the same standards with the same rigor. Students from various races and socioeconomic statuses all have an opportunity to excel in their educational endeavors. Nevertheless, this is only sometimes true, and an achievement gap is present. The research continuously states the achievement gap, but the solution is never near.

According to a report of the Rural School and community trust, Mississippi was listed as number 1 in "The Top 10 Highest-Priority States in Rural Education." There are nearly 235,000 students who attend school in rural Mississippi. Nearly one in four rural students live below the poverty line. The instructional spending for students in Mississippi is nearly $2,000 less than the national average. Students in Mississippi have lower educational outcomes when compared to other states.

In a society that constantly looks at numbers or data, could an in-depth comprehension of data assist in increasing student achievement for all students? Students in low-performing schools who miraculously beat the odds have a few proponents

assisting them. Strong leadership and research-based strategies have been shown to assist in student achievement. Individuals who make this happen have provided these students with a sense of value and instilled a ray of hope in knowing they, too, can achieve. This study will examine the attitudes and beliefs of the teachers, instructional support staff, and administrators regarding data and how they use it to make beneficial, informed decisions.

Research Questions

Four research questions will be examined, analyzed, and reported in this study to examine the extent to which teachers, instructional support staff, and administrators' attitudes and beliefs concerning data-driven decision-making and its relationship to student achievement**.**

Research question 1:

What are teachers' beliefs about data, data-driven decision-making, and student achievement?

Research question 2:

What are instructional support staff's beliefs about data, data-driven decision-making, and student achievement?

Research question 3:

What are administrators' beliefs about data, data-driven decision-making, and student achievement?

Research question 4:

Is there a relationship between teachers, instructional support staff, and administrators' attitudes and beliefs concerning data-driven decision-making and student achievement?

CHAPTER II – LITERATURE REVIEW

Data-Driven Decision-Making

For many years, data-based decision-making (DBDM) and data-driven decision-making (DDDM), two names that are interchangeable, have emerged as important fields in education (Mandinach & Schildkamp, 2020). Historically, the goal has always been to make education more accountable. Because legislators have emphasized the need for education to become an evidence-based field, educators increasingly rely on data and research evidence rather than experience and intuition. As a result, DDDM research has kept pace with legislative demands and evolving practice. However, it was only when the NCLB Act was implemented that we saw a stricter accountability paradigm emerge. Schools that want to achieve NCLB's Adequate Yearly Progress (AYP) requirements were under much stress to closely monitor student performance on high-stakes examinations that reports how successful they are or are not. Administrators have increasingly turned to commercial and home-grown data-driven decision-making tools and support systems to monitor and encourage student performance improvement in light of the difficulty of disaggregating, assessing, and reporting this testing data (Mandinach et al., 2006). Research highlights the rapid spread of these products, with purchase data indicating a 17 percent increase in this market between 2003 and 2004 (Stringfield, Wayman, & Yakimowski-Srebnick, 2005; Wayman, Stringfield, & Yakimowski-Srebnick, 2004).

As a result of the change, officials have emphasized evidence-based procedures, which have had a trickle-down effect. Educators must now rely on data and research evidence to influence teaching practices. While studies on data-driven decision-making

are still relatively new, evidence suggests that educators have been employing it for quite some time (Mandinach, 2012). The concept of data-driven decision-making in education is not new, according to the literature, and can be traced back to debates about measurement-driven instruction in the 1980s (Popham, 1987; Popham et al., 1985); state mandates to use outcome data in school improvement planning and site-based decision making processes dating back to the 1970s and 1980s (Massell, 2001); and school system efforts to engage in strategic planning in the 1980s and 1990s (Massell, 2001). With the increase use of technologies, the gap between using test data to address administrative purposes and using test data in conjunction with other data sources to improve instructional decision-making is expanding. While these resources can help teachers make decisions about instruction at the classroom level, they favor an approach to data analysis that reveals little about individual students and the numerous factors that influence student performance in favor of looking at and reporting system-wide or school-wide test trends and patterns. For this reason, they are considerably better at meeting school administrators' demands than classroom teachers.

Correspondingly, research states that there is currently an increase in school data. Datnow & Hubbard (2016) states that the amount of data accessible to instructors has multiplied. Consequently, data is becoming more abundant at the state, district, and school levels-some, even suggesting the educators are overloaded with data (Celio & Harvey, 2005; Ingram, Louis, and Schroeder, 2004). The emergence of the accountability model has caused a rise in the amount of data we have in the educational setting. The data found in K-12 includes but is not limited to the following assessments: summative and formative classroom assessments, benchmark assessments, formal

observations, and informal observations. In this technological era, many advancements have been made in assessment usage and gathering data much faster than in previous years (U.S. Department of Education, 2008). Achievement data has been readily available for analysis due to technological advancements in assessments (Mandinach, 2012).

Mandinach (2012) presents a concise explanation of the research topic. "Data-driven decision-making (DDDM) refers to the systematic gathering, analysis, review, and interpretation of data to inform practice and policy in educational contexts," according to Mandinach (p. 71). Others have coined terms like data-driven decision-making, data-informed decision-making, data literacy, and data utilization to describe this process (Coburn & Turner, 2011; Mandinach, 2012; Anthanases, Bennett, & Wahleithner, 2013). Each of the terms above describes the data gathering, analysis, and interpretation process similarly. According to research, effective data utilization necessitates using several sources of qualitative and quantitative data rather than only achievement statistics (Lai & Schildkamp, 2013; Mandinach & Gummer, 2016b). Coburn, Toure, & Yamashita, 2009; Coburn & Turner, 2011; Mandinach & Jackson, 2012). Others define *data use* as a complicated and interpretative process in which goals must be established, and data must be found, collected, analyzed, and understood. Data must be used to improve teaching and learning. As part of an iterative inquiry process that informs decision-making, this interpretative transformation process entails a diverse skill set. Van der Kleij, Vermeulen, Schildkamp, and Eggen (2015) defined data-driven decision-making as a formative assessment approach in which assessments are used to support learning, and evidence is

gathered, interpreted, and used to change the learning environment based on the needs of the students (Van der Kleij et al., 2015; Wiliam, 2011).

Boudett et al., (2013) and additional researchers cite that educators frequently begin their data use with a specific aim, which is usually related to increasing the quality of teaching and learning in the classroom (e.g., student learning goals, aggregated achievement targets). These objectives must be specific and measurable (Hamilton et al., 2009; Schildkamp, 2019). Furthermore, it is the best practice for educators to determine a desired educational outcome when using data to inform decisions. *Educational outcomes* are the criteria for selecting materials, outlining content, developing instructional procedures, and preparing tests and examinations. The focus is learner based versus educator based. Educators must interpret these data (Vanlommel, Van Gasse, Vanhoof, & Van Petegem, 2017; Weick, 2021).

Educators must work together to examine and understand data to discover problems (i.e., when specified goals are not fulfilled) and possible causes. The consequences of solutions to problems and subsequent actions based on data analysis are sometimes not self-evident (Mandinach et al., 2008; Marsh, 2012; Vanlommel et al., 2017). Research states that data users should not be a solitary endeavor; jointly taking part in this type of reasoning is vital. Collaborative data teams are groups of teachers and school leaders who systematically use data to solve a specific educational problem. The emphasis is on resolving a problem rather than identifying one. In a data team, collaboration is possible. A *data team* can also be defined as a group of educators that come together to discuss practical ideas based on data analysis. The compositions of data teams vary. They are led by a data coach and can be organized around grade levels,

content, or across grade levels (Farley-Ripple & Buttram, 2015; Huguet, Marsh, & Farrell, 2014; Schildkamp, Poortman,2015).

The premise of a data team is that teachers work together in various types of groups. It is critical for these teams to strive for continual development and to use collaborative inquiry to address the needs of individual students (Datnow & Park, 2018). Teachers' inquiries are the starting point for the procedure. School leaders are essential members of a data team because they frequently have a distinct perspective on the educational problem to be solved and can bring new hypotheses to the table. Teachers learn how to collaborate in order to carefully use data to tackle individual classroom problems in hopes of bettering the school's overall performance. In a study of the efficacy of several teams, Supovitz (2002) discovered that productive teams spend more time on instructional relevant dialogue.

In contrast, teams that are less likely to succeed tend to spend more time on administration and paperwork. According to Henry (2010) 's research analysis, teams that achieve student learning increases are those where instructional relevant conversations are widespread. Less effective teams have fewer instructional essential discussions. One technique to raise students' academic performance is through the use of collaborative data teams because they combine the benefits of teacher collaboration, which has been shown in studies to result in school improvement (Handelzalts, 2009). Data teams and the advantages of data-driven decision-making can also lead to school improvement (Campbell & Levin, 2009; Cawelti & Protheroe, 2001; Lai, McNaughton, Amituanai-Toloa, Turner, & Hsiao, 2009).

To create a seamless flow within this research, a conceptual framework tailored from the literature (e.g., Mandinach, Honey, and Light, 2006) will be used to discuss data-driven decision-making (see figure1).

Figure 1 describes the conceptual framework for data-driven decision-making. This paradigm is based on the idea of what it means to be a data-driven educator. It is assumed that people have concerns or difficulties for which data must be collected, evaluated, and surveyed to make educated decisions, regardless of where they are in the school system. This requirement exists at all levels of the organization, from the classroom to the school and up to the top. As previously stated, the model given here depicts decisions made inside school systems, concentrating on the classroom, building, and district levels. Many factors at the state and municipal levels can and will influence local outcomes. However, this paper aims to focus on the attitudes and beliefs of teachers, instructional support staff, and administrators.

Figure 1. Framework for Data-Driven Decision Making.

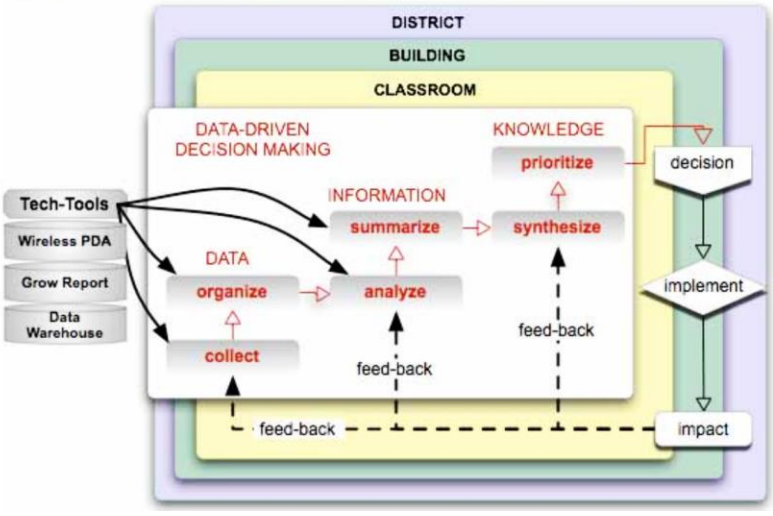

FIGURE 1 Conceptual framework for data-driven decision-making. Reprinted with permission from A Conceptual Framework for Data-Driven Decision-making by E.B Mandinach, M. Honey, D. Light, and C. Brunner. Copyright 2008 by Teachers College Press

This conceptual model has evolved through time and has been shaped by the research of other scholars. To lay the groundwork for a model of data-driven decision-making, researchers (Light et al., 2004) investigated the application of organization and management theory to data. They built a theoretical framework for the data manipulation process, taking cues from the writings of Ackoff (1989) and Drucker (1989); (Breiter, 2003). According to Ackoff (1989), data, information, and knowledge create a continuum in which data is turned into information and knowledge that may be used to make decisions. According to Light and colleagues (2004):

- "Data is in an unprocessed condition. It has no inherent significance; hence it can exist in any form, usable or not. The knowledge of the individual looking at the data determines whether or not the data becomes information.
- Data becomes information when it has a context. The interpretation and organization of data reveals context-dependent linkages. But, this by itself does not dictate any further steps.
- Knowledge is a collection of helpful information later used to guide action. Knowledge is developed successively. The teacher's capacity to detect connections between students' results on different item-skills analyses and classroom instruction, and then act on them, demonstrates the knowledge concerning test material." The continuum depicts a natural path from raw data to usable information.

Components of the Framework

The conceptual framework is built on the foundation of the data-to-knowledge continuum. It is rooted in the classroom, school, and district context, all of which will make judgments based on different data in different ways. Decision-making in this model has many stakeholders and is facilitated and supported by the technological tools at their disposal. The data-to-knowledge continuum is characterized, as shown in Figure 1, by incorporating six cognitive skills or acts that we recognize as critical to the decision-making process. Each point on the continuum is found to align with two skills. The skills of "collecting" and "organizing" are essential at the data level. "Analyze" and "summarize" are the talents at the information level. The skills "synthesize" and "prioritize" are considered relevant at the knowledge level.

A stakeholder, whether a classroom teacher, a principal, or a district administrator, is confronted with an issue or a problem for which data collection can be beneficial. Stakeholders must decide what data to acquire; in other words, they must decide what will be used to inform the issue. The individual can decide whether to obtain new data or examine existing data sources. Giving students an assignment or task to emphasize a specific learning challenge could be an example for a classroom teacher. A central administrator may need to drill down into the district data warehouse or survey parents to answer a specific issue. After the data has been acquired, it is vital to organize it methodically to make sense of it. Data that is in its raw state could prove difficult to comprehend. The data will need to be organized in a logical manner. The stakeholder can then convert the raw data into information on which meaning can be imposed using this organizational structure.

The stakeholder then evaluates the raw data using the organizational scheme developed from it for informational reasons. A teacher can examine the outcomes of a classroom activity. A principal may take into consideration the outcomes of a standardized exam across classes in a specific grade. To estimate the chances of achieving AYP, a district administration might look at performance trends for different cohorts of children. Depending on the type of inquiry and the decision maker's function, the analysis's scope may be broad or narrow. There must be some sort of summary of all the acquired data, regardless of its depth and breadth. Educators are inundated with data from all sides and a variety of sources. As a result, having short and targeted summaries of information, which may later be turned into practical knowledge, the final stage in the continuum, is critical.

The stakeholder must synthesize the available information to transform it into knowledge. Ranking the data is the final step. Prioritization often requires making a value judgment using the knowledge and information at hand. It requires determining the information's relative importance and whether there are practical, implementable answers. A teacher may decide that a student's literacy deficit must be addressed before moving on to other, less pressing concerns in learning district nine. A principal may prioritize one area of study over another depending on input from teachers and student performance. The superintendent may conclude that allocating money disproportionately to the most disadvantaged schools has the best chance of closing the minority achievement gap. Prioritization enables decision-makers to determine the most important, urgent, wise, or rational answer to a specific educational problem.

A decision results from this six-step process of moving from facts to information to knowledge. The decision is then carried out, or in some cases, it may fail to be carried out due to external factors such as a lack of resources. There is some form of effect or impact as a result of the implementation. Depending on the impact, the decision maker may determine that one of the six cognitive steps needs to be revisited, resulting in a feedback loop. The stakeholder may need to gather more information, reanalyze the data, or resynthesize the knowledge. Due to the nature of the feedback loops, data-driven decision-making is seen as an iterative process in which one set of data can lead to another set of data, and so on.

The type of decision and data collected may differ depending on the level at which the choice is made and by which stakeholder. How the data is aligned throughout the district's levels will influence the usefulness. For example, the model of use for accountability will decide how data is used in the decision-making process. The information could be used for facilitation, progress tracking, or punishment. There will likely be a variety of stakeholders at various levels. Different feedback loops (i.e., iterations within decision-making processes) for different stakeholders and levels of the school hierarchy are also likely. The data-driven decision-making implementation model and context will determine the feedback loops. Teachers' data may differ from that a building or central administrator requires. The questions that will be asked will be different. Although many questions and the value of the data may be contained inside a single level of the school district, there will likely be interconnections across them. Building decisions have an impact on classroom decisions, and classroom decisions have

an impact on building decisions. Decisions made at the district level will impact the building level, affecting what happens in the classroom either directly or indirectly.

When looking at cross-level decision-making, top-down decisions will likely outnumber bottom-up decisions. That is, fewer judgments made by classroom teachers are likely to directly impact a decision made at the district level. However, several decisions will be made at the individual level. The cultural context and surroundings that translate into rationales, requirements, and purposes will define who uses the data, how it is used, and the types of interactions across stakeholders.

The Role of the Technology-Based Tools

In order to obtain educational data and make data-driven decisions, technology has been extremely important. Educators require skills in retrieving data to analyze and interpret. Data-driven decision-making supporting technologies have evolved, ranging from sophisticated data warehouses to mobile apps (Means et al., 2010; Wayman, Cho, & Richards, 2010). Educators, on the other hand, may need to have technologies aligned with their educational objectives or technologies that generate unduly simple or ill-conceived information, leading to false interpretations (Kahneman & Klein, 2009; Wayman et al., 2010). Educators require skills in retrieving data to analyze and interpret. Technological advancements in data collection allow educators to access multiple sources of student achievement data. The availability of more data in schools is explained by accountability trends, but the question of what to do with the data has largely remained unresolved (Hamilton et al., 2009). Culture and expectations concerning data in schools impact schools, teachers, and administrators' responses to data.

Technology tools may assist, enable, and facilitate data-driven decision-making. The value of incorporating technology into data-driven decision-making is becoming more apparent. Such technologies can be used as enablers for excellent practice. They have the potential to enable data mining that would otherwise be impossible. However, when it comes to answering the question of "does technology function" or "what is the influence of technology," there is always the "depends" clause, as with many advances.

Some claim that data buried inside tools are intimately linked and must be viewed as a unit. Others have maintained that, while tools may influence the data available or the data may influence the tools chosen for usage, they should be viewed as separate entities. There are numerous intricate interactions at work. Recognizing that we live in a multivariate environment, we may have fun here. There are person-by-data-by-tool-by-context interactions, just as data-by-information requirements by-value interactions. These interactions are related to the culture and values of a school district, where decisions are made about the importance of specific data and the types of technology-based tools that will allow those data to be interrogated. Since data use is still primarily a human activity, knowledge in the disciplines of technology (e.g., the suppliers), as well as in the fields of learning and psychology, is required to fully achieve the potential of data use (Schildkamp, 2019).

Accountability and Data-Driven Decision-making

A Nation at Risk, published in 1983, emphasized the nationwide effort to increase rigor in teaching and learning throughout the United States. This report noted that about 13 percent of all 17-year-olds in the United States were considered functionally illiterate. Functional illiteracy among minority youth was as high as 40 percent.

At the time, remedial mathematics courses made up one-quarter of all mathematics courses offered at public 4-year colleges, an increase of 72%. There was a significant call for education reform in the United States. Students were not capable of competing globally. There has been the existence of asking for improving teaching and learning, but future educational reforms will place significant emphasis on accountability. According to Van der Kleij et al. (2015, p. 330), data use has shifted to a more sociocultural paradigm. Researchers now focus on "constantly adapting learning environments to facilitate and optimize learning processes while considering learners' needs and individual characteristics." Rather than acknowledging or controlling for context, the focus is on data consumption within a specific context (Coburn & Turner, 2011; Schildkamp, Lai, & Earl, 2013; Supovitz, 2010). According to research, pupils and their origins and circumstances are complicated and situational, necessitating educators to use various data sources to acquire a thorough picture of their students (Datnow & Park, 2018). According to research on data-driven decision-making, the component of data use can either be a facilitator or a hindrance (Jimerson, Garry, Portman, & Schildkamp, 2021). Data utilization, when done correctly, may be a beneficial activity. On the other hand, it might be a hindrance if done incorrectly.

The increased call for data to drive instruction began with the formation of the (NCLB) Act (2001) and has continued to the Every Student Succeeds Act (ESSA). Both educational reform acts also called for increased rigor in classrooms across America. The increase in rigor also meant that more focus would be placed on scholar success regarding standardized assessments (Mandinach, 2012). Data-driven decision-making, as noted by Datnow et al. (2015), has gained traction as an educational reform in the face of

rising accountability expectations. In the recent decade, there has been a shift from a pure focus on accountability to a focus on continual development (Mandinach, 2012).

Each administration continues to create educational reforms under federal law and mandates. President Barack Obama first enacted the Every Student Succeeds Act (ESSA) in 2015. This piece of educational reform focused on making education equitable for all students. One notable goal was to close the "achievement gap." State-level school rankings are a kind of accountability that puts pressure on schools to show they are meeting college and job preparedness standards. (U.S. Department of Education, 2015).

Mandinach (2012) states that a data-driven decision-making process is used in various manners depending on the stakeholder within the school setting. Administrators, teachers, and parents make diverse choices based on records from students' scholastic data (Mandinach, 2012). School administrators can take data to decide which educational materials benefit the students within their schools. Using evidence-based policy-making, Schildkamp & Kuiper (2010) states that administrators can transfer resources or attention to the areas where improvement is needed. On the other hand, teachers can make decisions based on the formal and informal assessments within their classrooms to drive instruction. Teachers that utilize data to inform instruction typically re-teach or re-group pupils who are struggling in specific areas (Hoover & Abrams, 2013).

School improvement planning is another listed purpose of DDDM (Datnow & Hubbard, 2016). School administrators may use data such as students' performance on standardized tests to set academic goals for the upcoming school year. Students who are on the verge of reaching the next level may benefit from supplementary tutoring. The principal can arrange class times independently to permit for extra help in the classroom.

Monitoring students' progress throughout the year is a useful tool for teachers. An additional component of data-driven decision-making is monitoring students' progress toward instructional goals to promote student achievement. There is no strict schedule for progress monitoring to occur. It is dependent upon the teachers and school administrators. Teachers could be monitor progress weekly due to weekly classroom assessments. In contrast, administrators or district personnel may review district assessments or universal screeners every quarter to monitor progress.

Grabarek & Kallemeyn (2020), conducted an empirical study about teacher data usage and student achievement. Researchers investigated the correlation between teachers' utilization of data in various formats and gains in student performance. Results showed that while 15 studies found positive associations between data use and student success, another 10 found mixed results, and 14 found no associations (Grabarek & Kallemeyn, 2020). There were no discernible variations across studies when broken down by grade level, subject area, or research methodology. According to Grabarek & Kallemeyn (2020), ongoing professional development, comprehensive data use interventions targeting multiple leverage points, numerous types of data, and intentions to use data for continuous improvement of all students were all commonplace in studies that had positive impacts on student achievement compared to the sample overall (Grabarek & Kallemeyn, 2020). Grabarek & Kallemeyn (2020) states that the results show that improving students' performance is possible with a comprehensive data-use framework.

The scholarly literature on data-driven decision-making reveals several recurring topics. In the majority of research studies, data-driven decision-making has been described as a systematic process. Schools have policies and practices in place to support

data-driven decision-making for instructors (Schildkamp & Kuiper, 2010). The system inside a data rich school is made up of the data team and instructional coaches. Additionally, studies on the effects of instructional coaches on particular teachers have shown that instructional coaches took part in a number of activities that enhanced teachers' ability to educate, particularly by assisting with data analysis and lesson preparations (Farley-Ripple & Buttram, 2014; Marsh et al., 2015; Thornton, 2015). The necessary resources and assistance were made available to teachers to ensure their success when working with data.

Data Use by Teachers

The use of data by instructors has become a topic of discussion. Is it a means to an end or a panacea? On this subject, researchers are divided. A panacea, by definition, is a solution to a broad range of problems rather than a single, nearly specific issue. The United States educational system has a long history of adopting panaceas, investing in them, and abandoning them. Panaceas can be challenging to spot in person because they do not always have a clear description. The term “information utilization” has been applied to curriculum-integrated student tests, management records systems, learning progression models, findings from the What Works Clearinghouse, and other types of data. Some of these organizations, including the What Works Clearinghouse, are attempting to promote a type of data use that involves selecting applications that have been proven to be the most effective.

Other systems, such as district-level check score databases, are attempting to promote information use that includes improving services, curriculum, or education in areas where ratings are poor. Some attempt to promote information use that incorporates

high-stakes responsibility options for instructors, while others attempt to promote a formative improvement cycle for teachers. The fact that the term "records use" is so widely used, even when it relates to such diverse actions and goals, raises the possibility that the idea is wishful rather than a clever method.

Panaceas are especially difficult to assess since academics can become enamored with them and become proponents rather than critics of these novel concepts (Rothkopf, 2009). Even if scholars are suspicious, panaceas are challenging to analyze since they are promoted as solutions to various problems rather than one. As a result, there is no obvious alternative to test a panacea and no evident results to assess. As a result, investigations on panaceas tend to focus on how well they are carried out rather than whether or not they are truly successful in achieving any specific aim concerning any opportunity. In the case of data utilization, for example, we have papers documenting the steps districts and schools took to install the machine of a record, but they do not say much about whether the records machine, once in place, obviously aided decision-making or educational activities (e.g., Datnow et al. 2007; Kerr et al., 2006).

The first venture in organizing a study schedule on facts use, then, is to take away the concept from its panacea pedestal and define a specific, researchable reason to care approximately it. The study's question of interest cannot be simply whether teachers use the information but alternatively whether the information is used productively to improve preparation and enhance pupil mastering. Below I outline the area of interest regarding teachers' use of statistics. In this case, the records of interest are, in significant part, check statistics.

Every educational intervention is vulnerable to unintended repercussions, which must be diagnosed and understood alongside the desired goals. Teachers can adapt to new restrictions and approaches by becoming more rigid and protective in their practices rather than becoming more successful. They may also stick to the letter of a new law while disregarding its spirit. They can also figure out how to tweak the surface elements of their paintings or give the appearance of compliance without having to deal with more difficult academic issues. Heilig and Darling-Hammond (2008) observed such shielding responses while researching an accountability device in Texas. Teachers there identified a means to raise higher test scores without changing their teaching methods. These researchers discovered that, for example, low-achieving kids were disproportionately excluded from taking the state's high-stakes exam and that profits on the high-stakes exam were not considered on other lower-stakes exams. This is not necessarily the type of response that supporters want. Instead, they would like teachers to use test data to rethink their instructional tactics, reorganize their resources or academic frameworks, or make other steps to improve student understanding.

Data use by Administrators

The necessity of administrators using data to make choices is highlighted by the stresses of accountability for student achievement and school improvement (Bernhardt, 2004, 2013; Creighton, 2007; Hess & Kelly, 2005). School administrators who are rich in data and practice data-driven decision-making establish policies, increase their ability to use data and cultivate a culture of trust and collaboration (Levin & Danow, 2012). District assessments, universal screeners, and classroom assessments should be used to ensure that teaching and learning occur. How well students perform on state assessments

can be predicted by the multiple assessments' students take. Building administrators are responsible for ensuring implementation is managed properly, whereas district administrators are responsible for deciding which instruments to use. Many studies support the idea that school and district leaders affect the way students and teachers approach and make use of data (Levin & Datnow, 2012).

Based on the data, administrators have high standards for classroom teachers. To attain their goal of raising students' academic performance, administrators need to use data to establish benchmarks. Administrators are responsible for making all crucial decisions about curriculum standards, including creating goals, assigning teachers to classes, and choosing training programs. As administrators examine data for signs of improvement over time, they often draw connections to teacher responsibility. Teachers whose students' assessment scores are not up to par could perhaps seek other avenues to ensure student success. This teacher may need additional support or be more decisive in another subject area. Data shows what teaching strategies are successful and what parts of the curriculum must be revised (Gullo, 2013). The term "data-informed leadership" refers to the practice of leadership in which data informs decision-making rather than "driving" leaders to take action (Knapp et al., 2006). For example, re-assigning teachers to fit their strengths for better learning outcomes.

Tschannan-Moran and Gareis (2007) define principals' self-efficacy as the conviction that they can positively impact the schools they lead. Paul Bambrick-Santoyo argues that data can be used as a road map to bolster the rigor of classroom education (2012). The statement is correct, but it presumes the educator has some familiarity with making decisions considering the data. Bambrick-Santoyo notes that standardized test

scores have increased over the past decade at schools where administrators have adopted data-driven decision-making. Administrators have the power to foster a schools-wide appreciation for data. Both educators and students will understand the value of data and its potential for growth. Coburn and Turner (2011) contend that the organizational settings in which data are located significantly impact the data use process and the interventions used to improve data-driven decision-making. The type of support an administrator has in place for their building concerning data use should be an integral part of the unit (Lange, Range, & Welsh, 2012). Educators should know where to find relevant information and how to use it effectively.

The principal's role in making data-driven decisions is the subject of one qualitative study (Torrence, 2002). Torrence (2002) created an Administrator Data Use Survey instrument. This study had 226 respondents (Torrence, 2002). A high percentage of the respondents reported having strong positive attitudes, and they truly valued the use of data. As reported by Torrence (2002), the administrators had a positive response in the following activities: 1) They evaluated the progress of their school; 2) They established clear goals for student achievement; 3) They used data as a valuable tool for instructional leading; and 4) They felt data was essential for monitoring student's academic progress.

Administrators who possess data literacy and understand how to inform decisions serve as mentors for the teachers and work in collaboration to understand what the data truly means (Levin & Datnow, 2012). They do a good job of supporting their educators and pupils. In contrast, administrators who lack data literacy may have little impact on their school's faculty. It has been suggested by Levin and Datnow that a principal's "lack

of engagement in data-driven decision-making" can be a roadblock to the process on a school-wide scale (2012).

Conceptualizing teacher belief systems-Self efficacy

Examining teachers' ideas gives us a better picture of their data-use capabilities. It also sheds light on the issues that drive their educational reform efforts. When people believe that schools are failing to provide what they should, they push for changes to be made (Min, 2019). Educators' perspectives on the value of evidence in making decisions based on data already exist (Coburn & Talbert, 2006; Coburn & Turner, 2011; Farley-Ripple & Buttram, 2015). Jimerson's (2014) study of a central Texas school district found that teachers' knowledge of data and data use directly related to their mental models or how people interpret the world and select actions to take (Senge, 1990). Mental models are mental representations of an individual's assumptions, definitions, and beliefs, and they can be used to create specific dispositions and actions regarding data consumption. They are typically stiff and can inhibit people from accepting new and diverse ideas, even though they are not necessarily fixed.

According to Spillane and Miele (2007), we are more likely to pay "selective attention" to what we deem relevant data evidence and to discriminate and favor specific concepts molded by "mental representations that we have abstracted from our experience" (p.50). Prior experiences inform what we assume data tells us and how it relates to other data and practice. These beliefs are "stored as knowledge representations," also known as "schemas," and they impact our interpretation process (Spillane & Miele, 2007, p.51). Coburn and Turner (2011) states that "People prefer to search for and see features of the evidence that support their ideas, assumptions, and

experiences, and do not even notice facts that would contradict or challenge these beliefs,". Administrators who focus on challenges and weaknesses foster change and growth.

Interactions constructing meaning and impacting behaviors result in data sensemaking (Coburn & Turner, 2011). This viewpoint implies that addressing teacher interactions could positively impact attitudes and actions, promoting data use. Rebuilding mental models can be aided by formal training, leadership modeling, social interaction with coworkers, and personal experience (Jimerson, 2014). Efficacy beliefs can be addressed because they are co-constructed with others in the "community of practice" (Takahashi, 2011, p. 732). Individuals who work in communities of practice negotiate to mean and engage in the process of reification, in which they imbue meaning that impacts their views, according to Wenger (1998). As a result, investigations of shared practice sites provide a chance to examine the relationship between data-driven decision-making and belief formation. Educators' mental models may shift if the situation is built in a way that encourages knowledge sharing. A lack of faith in teachers' abilities to use data to improve instruction has been identified as one of the fundamental attitudes that affect their behaviors, according to numerous research (Bruning et al., 1999; Dunn et al., 2012; Woolfolk et al., 1990). According to the research, people, organizations, processes, and supports can help or hinder educators in making data-driven decisions (Schildkamp & Kuiper, 2010).

To provide a comprehensive explanation for a behavior, like data-driven decision making, an integrated approach is required, which takes into account both social influences and self-efficacy beliefs (Bandura, 1997). Examining psychological or social

elements in isolation partially shows how self-efficacy beliefs affect behavior (Bandura, 1997). Belief in one's own ability to "...bring about desired results through effort" is what psychologists call "self-efficacy" (Bandura, 1997, p.3). Self-efficacy in the classroom refers to a teacher's belief in his or her own competence and capacity to implement strategies for achieving desired results (Gibson & Dembo, 1984). Bandura describes self-efficacy beliefs as "...beliefs in one's capacity to organize and execute the courses of action required to generate specific attainments" in Self Efficacy: The Exercise of Control (Bandura, 1997, p.3). Teachers may have varying degrees of confidence in their abilities to perform various aspects of their jobs, such as classroom management and teaching abstract concepts (Skaalvik & Skaalvik, 2014). The results of examinations might play a role in this line of thinking. Teachers may believe they are teaching effectively, but students' performance on standardized tests may indicate otherwise.

Both aspiring and practicing educators have contributed to the study of teachers' perceptions of their own abilities and success in the classroom (Saka, Bayram, & Kabapinar, 2016); (Dunn, Airola, Lo, & Garrison, 2013). In K-12 education, self-efficacy beliefs have been investigated concerning teacher engagement and work satisfaction (Skaalvik & Skaalvik, 2014). According to Skaalvik & Skaalvik (2014), teachers' engagement and contentment in one's work can be gleaned from a person's sense of autonomy and self-efficacy. Individuals' self-efficacy beliefs can come from various places, according to Bandura (1997). Their level of preparedness can influence teacher self-efficacy. If a teacher consistently has low test scores, their self-confidence may become low. However, teachers with consistently higher test scores will have higher self-efficacy because they have tangible proof that their students are achieving. The teachers

with higher or lower self-efficacy are exhibiting an inactive mastery experience. Each person brings their own identity and worldview to the tasks they undertake. How a task is understood and approached is a function of these frameworks (Bandura, 1997).

Vicarious experiences can also influence self-efficacy views. These experiences frequently entail modeling the achievement of a particular objective in contrast to others in a similar situation, which can help to develop self-efficacy beliefs. As a result, people frequently evaluate their self-effectiveness attitudes by comparing themselves to others in comparable situations. According to Bandura (1997), when workers outperform their colleagues, their feeling of self-worth grows. The same is true if employees are performing poorly in comparison to their colleagues.

This theory touches on the multi-facets that contribute to self-efficacy. Teachers are tasked with placing action with all of the data they have in place.

State test scores and school ratings all play a part in the self-efficacy teachers possess. Teachers who perform well may get verbal acknowledgment. Verbal praise invokes a sense of fulfillment which could lead to higher self-efficacy. This teacher possesses confidence in their work. Teachers who do not receive praise will have an alternative response to verbal reprimand regarding their performance. Thus, leading to a lower sense of self-efficacy with teachers who may not have higher scores. Research studies on teacher self-efficacy beliefs support Bandura's theories about the benefits of self-efficacy (Skaalvik & Skaalvik, 2014; Kunsting, Neuber, & Lipowsky, 2016).

Organizational Learning Theory

Two of the most renowned contributors to organizational learning theory are Chris Argryis and Donald Schon. The claim made by Argyris and Schön (1974) that

humans have mental maps of how to react in different conditions serves as our preliminary step. This relates to how they plan, carry out, and assess their activities. Additionally, they believe these maps serve as people's actions' compasses rather than the ideas they openly support. Therefore, fewer people are familiar with the ideas or plans they do utilize (Argyris, 1980). This infers that an individual's ideas and actions are sometimes the opposite. Teachers' theories and practices regarding data use do not always align, as demonstrated by data comprehension and data-driven decision-making. The success or failure of students is a clear indication of this.

The earlier writings of Argyris are comparable to Peter Senge's later book, The Fifth Discipline: The Art & Practice of The Learning Organization. Senge equates the learning organization as a social intervention. A social invention is composed of intangible elements called disciplines. A discipline is a developmental part of acquiring certain skills or competencies. Practicing discipline is to be a "lifelong learner" (Senge, 1999, pp.10-11). Senge (1990) suggests that successful organizations understand that learning does not happen in isolation with the organization's leader, who disseminates knowledge to members of the organization. The organization's processes, structure, and routines promote learning and development among the employees who make up the organization. According to Senge, every member of a learning organization is a student. Treating all stakeholders as essential moving parts in the organization's wheel. Cooperating for the common purpose. Senge (1990) believes five disciplines contribute to the creation of the learning organization: 1) personal mastery: 2) mental models; 3) shared vision; 4) team learning, and 5) systems thinking.

According to Senge (1990), personal mastery is “realizing the results that matter to an individual inside an organization.” Individuals can be characterized as having high level personal mastery. The following are characteristics high level personal mastery individuals possess. Individuals with high level mastery have a sense of purpose when working towards a goal (Senge, 1990). When faced with opposition or change, they work with the opposition (Senge, 1990). How does this fit into the educational setting? Educators are faced with many changes on a daily basis. They must be prepared to adapt in order to work towards student achievement.

The mental models' cognitive and behavioral aspects are discussed next by Fauske and Raybould (2005). In schools, mental models and learning are essential. Raybould (2000) investigated how a mandatory change to expand the use of instructional technology affected individual and shared mental models among school professionals. These models were described by Raybould (2000) as system-structural (i.e., routines) and interpretative (i.e., frameworks). Changes in procedural or system-structural aspects were shown to be easier to develop and maintain than changes in conceptual or interpretive frameworks on both the individual and organizational levels. Extending an already-established structure was found to be simpler than developing a brand-new one. It is now well-established that individual learning is a precondition for learning in organizations and communities. Individuals' mental models hindered the organization's ability to learn. These findings are consistent with those of Schein (1992). The study’s implications indicate the need for more research into mental models and their impact on school organizational learning.

The strategy for solving difficulties and dealing with challenges is based on a "pre-existing schema" (Fauske & Raybould, 2005, p.24). Data-driven decision-making for student achievement should be a collaborative effort. Data teams within a building coincides with Senge's (1990) third discipline, a shared vision. Formation of data teams will provide opportunities for educators to share their experience with data use. As well as provide additional suggestions regarding improvement. Schools with data rich cultures have systems in place to assist students and teachers with understanding data. Schilkamp and Kuiper (2010) give the example of schools that make only short-term adjustments to teaching based on data rather than using data to inform larger curricular shifts. According to Senge (1990), the shared aims and values that drive the learning organization's everyday activities are a shared vision.

According to Senge (1990), corporations and organizations can only succeed if they have a shared vision of their destiny. Senge's second discipline for learning organizations, team learning, is based on a shared vision. When working towards student achievement, educators must have common goals to work towards. When engaging in this collaborative effort, communication is key. A shared vision amongst all stakeholders is a necessity. Within a learning organization, the process of growing and finding occurs jointly. What is learned may have an effect on the group's decision-making and, in turn, their behavior (Senge, 1990).

Organizational attitudes, structures, support, and routines are all mentioned in the research as elements that influence data-driven decision-making (Wohlstetter, Datnow, & Park, 2008; Levin & Datnow, 2012). The components of data-driven decision-making coincide with those of organizational learning theory. Attendance, socioeconomic status,

and the school's physical setting are all factors that affect schools as an organization. Conditions connected to data-driven decision-making among teachers are the leadership roles in schools. When it comes to making decisions based on data, school administrators who grasp the significance of generalizing data know how crucial it is to train their staff. Lange, Range, and Welsh (2012) discuss the criteria that enable teachers to use data effectively. They point out that school leaders must create opportunities for teachers to receive professional development in order for them to become data-driven decision-makers. Educators are given the support and systems they need to make data-driven decisions in a data-driven culture (Noyce, Perda, & Traver, 2000). Teachers may make informed decisions that could positively affect student achievement.

While no definition exists for this idea, organizational learning theory is generally characterized as generating, keeping, and transferring knowledge inside an organization. Often called the learning process through group and organizational social interactions, organizational leaning theory has an expansive impact on many fields. Wind (2022) defines it as the process through which organizations acquire new knowledge, skills, and capabilities to adapt to changing environments and improve performance.

Organizational learning theory offers a framework for examining self-efficacy beliefs in order to make data-driven decisions. Another view of organizational learning is that learning is mirrored in the organization's structural aspects and social structures (Hesbol, 2019). In the context of schools, this again encompasses all elements related to the socioeconomic composition of the student body. According to Leavitt (2011), organizational learning definitions vary in their focus. He goes on to state that there are two major schools of thought: 1) the cognitive school, which emphasizes the "thinking"

aspect of organizational learning, and 2) the behavioral school, which emphasizes the "doing" aspect.

Recently garnered attention as a comprehensive strategy for establishing organizational transformation and growth. Westhover (2020) suggests that Organizational development "refers to the context, focus, and purpose of the change while developing an organization". He further states that organizational development "refers to the context, focus, and goal of the change in developing an organization" (Westhover, 2020). According to Kump et al. (2015), organizational learning depends on changes in personal knowledge, that is, individual cognitive processes. Understanding organizational learning mechanisms requires a grasp of these cognitive processes. However, individual events cannot fully account for complex organizational phenomena, which organizational learning entails.

Increasing the literature regarding data teams could assist with increasing data literacy among teachers. Teachers will then have the support needed to increase their confidence in using data efficiently. At organizations that value data-driven decision-making, employees regularly discuss the topic with one another. There is no research that conclusively connects attitudes and beliefs about data, data-drive decision-making and student achievement. In addition, the literature suggests that more research is needed to investigate the contextual elements that influence utilization of data for instructional purposes (Farrell, 2015).

Educators with low self-efficacies may need help making data-driven classroom decisions. While the requirement for technological, pedagogical, and statistical skills for engagement in data-driven decision-making has been recognized in the literature (Dunn

Airola & Lo, 2013), few studies look at the psychological side of data-driven decision-making. Insight into teachers' attitudes toward data-driven decision making may be gleaned from the organizational and peer structures and supports related to educators' attitudes and beliefs concerning data in schools. Finding out how teachers' self-efficacy, organizational and peer support, and participation in data-driven decision-making are connected is crucial for providing them with meaningful data experiences that lead to better teaching.

Additional research on the transformation process for instructors adopting data-driven decision-making approaches is needed, according to Dunn, Airola, Lo, and Garrison (2013). Change occurs as a result of a shift in perspective. For a holistic picture of data-driven decision-making in schools, it could be beneficial if the literature incorporates other demographic factors with organizational variables and peer influences. Background information collection regarding the types of data analysis classes pre-service teachers attended could assist with accessing teacher's prior knowledge on the subject of data-driven decision making. This will ascertain the teachers' level of preparedness to take data and make informed decisions.

In previous studies, self-efficacy beliefs were associated with instructional quality. This study aims to determine how educators' attitudes and beliefs drive their data-driven decision-making. The goal is to find the link between the aforementioned and student achievement. How can schools with low accountability ratings increase their ratings by gaining insight into how well their teachers and administrators understand data? The findings will be utilized to see if there is a correlation between teachers' attitudes and beliefs regarding data-driven decision-making and student achievement.

Lastly, an additional goal of this paper is to add to the literature the importance of utilizing this overwhelming amount of data found in today's educational systems by promoting student achievement and truly utilizing the information we must make sound decisions that will promote positive student achievement.

CHAPTER III – METHODOLOGY

Introduction/Research Questions

This research aims to shed light on how one school district's educators are putting data to good use in the classroom. Waymen et al. (2016) state that if school districts implement the Teacher Data Usage Survey, they will gain the following insights:

- A holistic view of instructors' data practices, perspectives on data, and resources for data utilization (Wayman et. al., 2016).
- A solid foundation upon which to build collaborative structures for data analysis and usage through evidence-based planning for continuous assistance, including training and education for staff; (Wayman et. al., 2016).
- Teacher data use as seen by principals and teachers' aides: a triangulated evaluation (Wayman et. al., 2016).

Four research questions will be investigated, analyzed, and reported upon to determine how educators perceive data-driven decision-making and its connection to student accomplishment at different levels of responsibility. The research questions are as follows:

1. What are teachers' beliefs about data, data-driven decision making, and student achievement?
2. What are instructional support staff's beliefs about data, data-driven decision-making, and student achievement?
3. What are administrators' beliefs about data, data-driven decision-making, and student achievement?

4. Is there a relationship between teachers, instructional support staff' and administrators' attitudes and beliefs concerning data-driven decision making and student achievement?

Participants

Possible participants will be employed teachers, instructional support staff, and administrators in grades K-12 in a school district in western Mississippi. Instructional support staff includes district level employees such as curriculum specialists and instructional specialists. Administrators will include building level principals and assistant principals. This district is rated as B on the 2021-22 Accountability scale provided through the Mississippi Department of Education. According to the National Center for Education Statistics, this district serves approximately 7,556 students, 1,006 students with Individualized Education Plans. It has a total of ten (10) elementary, three (3) middle, and three (3) high schools. There are approximately 544.14 teachers (FTE); 167.52 Instructional aides; 11.25 District administrators; 34.65 School administrators. ("Mississippi succeeds report card," n.d.) describes the teacher population as 71.6% as experienced, 10.2% as provisional, and 97.2% as in-field teachers within this school district. Individuals from elementary, middle, and high school teachers, instructional support staff, and administrators from one school district were asked to volunteer to participate. Schools that service grades K thru 12th will be asked to participate.

The email correspondence will offer preliminary information outlining the potential benefits of participating in this study. Participants will be advised that participation in this study is entirely voluntary. All participants' identities will remain anonymous, and responses will be housed discreetly. The district's superintendent and

administrators are free to examine the results of the study. However, it will be at the administrator's discretion should the results be presented to the staff. Also, findings may be published in publications and presented at research conferences. There will be a consent form that will denote individuals' agreement to participate in the study.

Instrument

Wayman et al. (2016) state that their instrument, the Teacher Data Use Survey, is designed to help district and school leaders understand more about teachers' use of data, attitudes toward data, and teachers' perceptions of support for utilizing it. The survey was prepared and evaluated in a vast urban area by a panel of five data use professionals. The survey is available in three different formats: one for classroom instructors, one for school leaders (including administrators), and one for support staff (e.g., instructional coaches). Three different surveys can be used to get a complete view of how a school or district's teachers are utilizing data. The majority of the survey scale reliabilities (Cronbach's alpha) were above 0.90, and all were greater than 0.80. School and district administrators can use the Teacher Data Usage Survey results to inform decisions on teacher professional development, technology integration, and teamwork related to data use (Wayman et. al, 2016). The survey consisted of nine scales and nine sets of questions, one for each of the five pillars of the conceptual framework. Although the question stems and question items may differ between the three survey versions (teacher, administrator, instructional support staff), all three versions include these scales.

State data, periodic data, local data, and personal (teacher) data are the four types of student data that Wayman et al. (2016) indicate are explored in this survey. The first

question on the Teacher Data Usage Survey is posed in three different ways depending on which survey version is used:

- Teacher version: “Do you have access to the following data types?”
- Administrator version: “Are your teachers able to access the following data types?”

  “Are the following data types available to the teachers you support?”
- Version for instructional support personnel: “Are the following forms of data available to the instructors you support?”

Within each category, a variety of data formats are presented for consideration (Wayman et al., 2016). One example of a local kind of data is a district accomplishment test belonging to the local data category. It is requested in the survey that survey planners at schools and districts use the names of the data types that are used in either their school or district. When designing the survey, the researcher will select the data that is frequently used in the school or district or is otherwise the most meaningful. For this study, local data will be used.

Survey Structure. According to Wayman et al. (2016), the survey opens with five questions that collect descriptive information on the provision and utilization of various student data forms. Following that, the survey uses four different data types that the survey planners have selected to ask follow-up questions on the actions teachers take (Wayman et al., 2016). The remaining sections of the survey are organized around the conceptual framework’s other four elements: instructors’ organizational support options, data attitudes, data collaboration, and data competency (Wayman et al., 2016). The poll includes questions about how teachers use data, how well they can use it, how they feel

about it, how they collaborate with one another around data, and what organizational support they have access to. Each of the five components is evaluated using a scale or a group of questions (Wayman et al., 2016).

Component of actions. The conceptual framework centers on the activities teachers take with data, as stated by Wayman et al. (2016). Examples of actions include educators' selection of purposes for diverse data and the procedures for utilizing such data. Researchers use instruments like the Activities with Data Scale and the Collaborative Team Actions Scale to measure how often educators use various data types in their classrooms. In the second question, we inquire how often teachers use the various forms of information provided by the designers. Respondents are allowed to provide information that the survey's designers did not initially envision in Question 3.

From the lists of specific data types in questions one through five, planners choose a particular form of data to represent each of the four basic categories on the actions with the data scale. The question items inquire whether teachers use certain data for specific objectives and how frequently. Question items on the collaborative team actions scale inquire about the data-related actions taken by district or school teams. Because teams and individual teachers must use data in an inquiry cycle, the scale's question items follow that pattern. The collaborative team actions scale might be part of the conceptual framework's cooperation component, but it belongs in its action's component because of its primary focus on teacher actions. Teachers' behaviors are crucial to data usage, and various psychological and organizational factors support these activities (Wayman et al., 2016).

Using data effectively is a crucial skill. Teachers must be cognizant of how to use data. Hence, this component is evaluated using the data competency scale. It asks teachers, administrators, and instructional support personnel how effectively they believe their instructors use data to inform various areas of their activity. When educators believe that data is relevant to their work, they are more likely to use it and do so more efficiently (Hamilton et al., 2009; Lachat & Smith, 2005; Wayman et al., 2015). This component is scored based on the utility of the data and assessments of the utility of other forms of data. The conceptual framework is centered on teachers' actions with data, such as the approaches they select for using different data types. The attitudes toward the data scale are comprised of items a through e from the six pedagogical efficacy scale, and question 11 comprise the attitudes toward the data scale (items f–i, question 11).

Collaboration component. In data usage, it is more beneficial when all stakeholders cooperate. When you are working in a group, you need to be able to trust each other (Lachat & Smith, 2005; Lipton & Wellman, 2012; Wayman et al., 2006). As a result, the collaborative team trust scale is used to assess this component. However, because its elements are more focused on actions than collaboration, it is included in the activity's component (Wayman et al., 2016)**.**

Component of organizational support. Teachers can only maximize the value of their data with the aid of their district and school (Hamilton et al., 2009; Marsh et al., 2010; Wayman et al., 2015). Supports may include the appropriate technology to access and analyze data, leadership promoting and enabling data use, and school personnel assisting instructors with data use (Wayman et al., 2016). This component is evaluated using a question on the availability of different forms of data (question 1) and three

scales: support for data use (question 10), principal leadership (question 12), and computer data systems (question 13). (question 13). Additional remarks regarding data consumption final question of the poll asks, “What else would you like to address with us regarding data use?” It solicits respondents’ comments and opinions on aspects of data utilization that need to be addressed in the survey.

Survey scales. Each of the five aspects of the conceptual framework is reflected by one of the nine scales, or groups of question items, that comprise the survey. These measures are included in all three survey iterations, albeit with somewhat different wording (teacher, administrator, and instructional support personnel). In the course of the activity’s component, scales were used. Two metrics are used for assessing the activities component: the actions with data scale and the collaborative team actions scale and operations requiring a great deal of data (Wayman et al., 2016). Each of the four questions on the activities with data scale contains eight items, and the scale’s question stems, and item formulations are tailored to a specific responder subset. When creating a survey, designers can collect one of four different categories of data, and each inquiry is related to one of those four (state, periodic, local, or personal).

Collaborative team actions scale. The collaborative team actions scale acknowledges the inquiry cycle’s significance when working with data. It is comprised of a single 10-item question with different question stems depending on whether the respondent is an administrator. The Teacher Data Usage Survey evaluates the trust within collaborative teams, an essential component for teachers who use data in groups. On the actions with data scale (teacher version), questions 6–9, respondents are asked the same

eight questions regarding the state, periodic, local, and personal data categories chosen for the survey.

Scale of data competency. The data competence scale performs the competency component assessment (box 6). It investigates the teachers' capacity to use data to guide various aspects of their practice. The scale consists of one question with four items, with different questions for teachers and non-teachers. Scales applied in the data attitudes component two scales are applied in the data attitudes component (Wayman et al., 2016). These scales are the data's efficacy for the pedagogy scale and the attitudes toward the data scale (Wayman et al., 2016).

The value of data in pedagogy. According to Wayman et al. (2016), the pedagogical efficacy scale gauges how data may be used effectively in everyday pedagogy. The scale consists of a question with five items, each corresponding to a specific response. The attitudes toward the data scale are comprised of the question's initial stem and the other four questions, and all respondents are asked the identical question and given the same set of items. The collaboration section made use of a variety of different scales consisting of the degree to which a collaborative team may be trusted to the level of collaboration is evaluated using a single scale. The scale comprises one question with five items, except item 16, and the question's stem and the items are phrased in the same way for all respondents (Wayman et al., 2016). These questions investigate how you feel about the amount of data you use. The relevance of statistics to educational practice on a scale (all versions) Question No. 11 These questions investigate how you think and feel about the data (Wayman et al., 2016).

Attitudes concerning the size of data is found in Question No. 11. These questions probe your thoughts and feelings about data. In the organizational support component, scales are employed. Three scales are used to assess the organizational supports component: the support for data use scale, the principal leadership scale, and the computer data systems scale (Wayman et al., 2016). The data use support scale inquiries about the resources accessible to instructors for data usage. It is made up of one question with six items, each stated differently for teachers and nonteachers.

The principal leadership scale explores how the principal and assistant principal steer teachers toward making judgments based on the collected facts (Wayman et al., 2016). The scale comprises a single question with six subparts, with the introduction and subparts being phrased differently for administrators and non-administrators, respectively. Inquiries concerning data access and analysis technologies are standardized using computer data systems. The rating system comprises a single, five-item question with the same question stem and items for each possible solution. These questions query data-gathering aids.

Procedure

This survey is available in both an online and paper format. To ensure a higher response rate, the researcher plans to administer the survey in person through the paper format. Subsequently, if there are missing faculty members, the survey will be administered via online format. The Institutional Review Board at The University of Southern Mississippi will be asked for permission to conduct this study. The researcher will receive permission from the Superintendent of the western school district to solicit participation in their school district to conduct the survey. After approval is received by

the entities, the researcher will plan to conduct surveys at the faculty meetings of each school within the district that service students in grades K-12. At the faculty meeting, a short 4-5 slide power point will be presented to inform participants about the survey and a script will be read. The survey will be given to participants with a 15-minute window to complete. The researcher will be present to address any concerns. Teachers include participants who were teachers who teach grade levels K-12 in tested subject areas as defined by the Mississippi Department of education. Administrators are defined as principals and assistant principals. Instructional support staff are individuals employed as district office administrators, such curriculum specialists or instructional specialists.

Once the surveys have been collected, the data will be placed in an excel document. Responses in the excel document will then be placed in SPSS. SPSS will be used to analyze the data collected. The researcher will conduct a basic descriptive analysis of the survey results and compare response based on current educational position. A summary of the results will be available to the Superintendent and building administrators. The results will be recorded in this dissertation and possibly used in future publications and conference presentation made by the researcher.

Administering the survey. The researcher will initially contact all of the district's building level administrators. To get an accurate picture of how data is used across the district or school, you should survey as many teachers as possible. When the survey's target population has been determined, the researcher will check their calendars to ensure that the survey won't be administered around testing times, other survey campaigns, or district breaks. Individuals in charge who are interested in surveying person will be contacted to arrange a time and place for the meeting. Those who work

with students in grades K-12 who agreed to participate in the survey will get it at their school or district.

For those who did not respond in agreement, follow up communication will be the next course of action. The follow up promotion will happen before the next survey invitations are sent out, and it can be done via email or google meet. As previously stated, the researcher will use a short presentation to explain not just what the survey will measure and when it will be conducted, but also how the results of the survey will benefit the respondents. This message covers the survey's precise goals and uses, as well as its value to respondents, for the school or district. The researcher will outline an incentive that will be offered for completing the survey which will be a gift card. Participants replies will be kept anonymous. The next step is administering the survey. This will include a brief presentation/script providing instructions.

Identifying survey respondents, determining the survey administration timeline, promoting the survey with a coherent objective, administering the survey, and promoting high response rates are the five steps of survey administration. The paper survey replies will be anonymous; the survey will not contain any numbers or identifying markers that could be traced back to a specific person during the gathering stage. However, when analyzing of data begin, participants' responses will be numbered. This will ensure data is entered correctly. The researcher will allow time for two follow-up survey reminders, possibly a week apart.

Data Analysis

This section gives fundamental analyses to aid schools and districts in interpreting survey results. Of fact, numerous further analyses are feasible. The administrator and

instructional support versions let the respondent specify whether he or she knows whether teachers use various categories of data. Before completing several types of analysis, the responses will be deleted. A reliability study assesses the consistency with which the scale's questions measure the same variable. In this district or school, the components of the conceptual framework are measured using the mean scores from scales.

The collected data will be analyzed statistically using SPSS software. In its most basic form, descriptive analyses establish the means, standard deviations, and sample sizes for each scale for each questionnaire edition (Wayman et al., 2016). The same statistics can be generated for specific, of-special-interest questions. Such inferences are possible when the sample represents all teachers in the school or district. Various comparisons may be helpful in deriving meaning from survey results, such as comparing scale means across survey versions and between survey versions; comparing survey results among respondents with different demographic characteristics; and comparing how teachers, administrators, and support staff use data (Wayman et al., 2016). The means of scales are contrasted against one another and across survey versions. The means of scales can be compared both inside and between survey versions.

CHAPTER IV– RESULTS

In this era of accountability in education, analytics, and data-driven decision-making play a significant role in determining student progress. According to Gummer and Mandinach (2015), to effectively use data, instructors must have a wide variety of knowledge and abilities embedded in the teaching profession. This chapter contains the results of the study conducted to answer the following research questions:

Research Question 1: What are teachers' beliefs about data, data-driven decision-making, and student achievement?

Research Question 2: What are instructional support staff beliefs about data, data-driven decision-making, and student achievement?

Research Question 3: What are administrators' beliefs about data, data-driven decision-making, and student achievement?

Research Question 4: Is there a relationship between teachers, instructional support staff, and administrators' attitudes and beliefs concerning data-driven decision-making and student achievement?

This chapter includes dialogue concerning the analysis conducted and how it correlates to each research question. Additionally, this chapter includes the sample's demographic using tables to complement the summary. The analysis of the survey includes 69 participants. A description of the findings will be provided as well.

Participants

A convenience sampling method was used to identify teachers, administrators, and instructional support staff who were interested in participating in this study. The participants are all employees of a school district in western Mississippi. The district has

an enrollment of approximately 7,000 students in grades Pre-K through 12. A five-member Board of Trustees governs the district. It is comprised of three high schools (grades 9-12), three middle schools (grades seven through eight), ten elementary schools, and an alternative program. All participants completed the surveys in person in a group setting and it included *n*=52 teachers, *n*=5 building level administrators, and *n*=12 instructional support staff voluntarily completed the survey.

This study's demographic also included the number of years of experience, profession, and grade level taught. The teacher participants were a combination of special education and general education teachers. However, demographic information regarding that factor was not collected, and the total years of educational experience varied among the participants. Table 4.1 further illustrates the participants' years of experience. Participants with zero to five years of experience represented 11.6%; six to ten years of experience represented 13%; 11 to 15 years of experience represented 27.5% of the sample size. Participants with 16 to 20 years of experience represented 29%; 21 to 24 years of experience represented 13% of the sample size. Participants with over 25 years of experience represented 5.8% of the sample size.

As seen in Table 4.2, teachers accounted for 75.4%; administrators were 7.2%; and instructional support staff accounted for 17.4% of the participants within the study. There was representation from two elementary schools, one middle school, one high school, and the Central office staff (Instructional Support Staff). The following information can be found in Table 4.3. Elementary-level teachers and building-level administrators accounted for 46.4% of the participants. Middle school level teachers and administrators were 15.9%. High school teachers and administrators were 20.3% of the

study, and Instructional Support staff (District Level K-12) were 17.4% of the participants. The invitation was extended to all building-level administrators within the district. However, only five building-level administrators responded. Subsequently, the central office staff was asked to participate, which included the 12 instructional staff.

Table 4.1

Demographic Information for Educators' Years of Experience.

Demographic Information	Frequency	Percent
Years of Experience		
0-5	8	11.6%
6-10	9	13.0%
11-15	19	27.5%
16-20	20	29.0%
21-24	9	13.0%
Over 25 years	4	5.8%
Total	69	100%

Table 4.2

Demographic Information by designated Profession.

Demographic Information	Frequency	Percent
Profession		
Teacher	52	75.4%
Administrator	5	7.2%
Instructional Support	12	17.4%
Total	69	100%

Table 4.3

Demographic Information for Grade level taught.

Demographic Information	Frequency	Percent
Grade level taught		
Elementary K-6	32	46.4%
Middle school 7-8	11	15.9%
High school 9-12	14	20.3%
District wide K-12	12	17.4%
Total	69	100%

Instrument

The instrument used to conduct the study was the Teacher Data Use Survey created by Wayman et al., (2016). This survey has three versions (teacher, instructional support staff, and administrator). The Instrument had a total of 18 questions with multiple parts. Participants filled out the entire survey. Information regarding local data was used when making the comparison for student achievement.

The constructs of interest consist of the following topics: action; competence in using data; attitudes toward data; collaboration; and organizational support. *Cronbach's Alpha coefficient* was conducted on items within each conceptual framework. According to the UCLA: Statistical Consulting Group (2021), Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items is as a group.

Table 4.4 illustrates *Cronbach's alpha coefficient* for each factor or conceptual framework. The Action's framework *Cronbach's alpha coefficient* was 0.98. For Competence in using data and Attitudes toward a date, *Cronbach's alpha coefficient* for both was 0.96. Collaboration's framework was a *Cronbach's alpha coefficient* of 0.94.

Lastly, the Organizational supports framework was a *Cronbach's alpha coefficient* of 0.93.

Table 4.4

Report Cronbach's alpha coefficients for each scale.

Factor	Items	Cronbach's alpha coefficient
Action	8a-8h, 17-17j	α= .98
Competence in using data	14a-14d	α= .96
Attitudes toward data	11a-11i	α= .96
Collaboration	16a-16e	α= .94
Organizational supports	10a-10f; 12a-12f; 13a-13e	α= .93

Data Collection

The research was conducted with educators currently employed in a school district located in western Mississippi. This served as the primary source of research data. The demographic portion of the survey provided additional supporting research data. The Teacher Data Use Survey (Wayman et al., 2016) was the instrument used in the research. It has three versions with remarkably similar questions. The teachers completed the teacher's version, building-level administrators completed the administrator's version, and the instructional specialists from the special education department and curriculum specialists completed the instructional support staff version. The script was read to all participants. Participants completed a consent form.

The survey was administered and completed within the 20-minute timeframe. The surveys were collected and placed in separate folders depending on the version taken. Once data was aggregated, each participant's survey received a numerical value

for input purposes. Each version of the survey received a number. Both elementary schools' data was placed in the same folder. Instructional support staff and administrators' surveys were numbered and input into an excel document.

Data Analysis

The Teacher Data Use (Wayman et al., 2016) survey has five constructs. The first construct is action with measures, actions with data, and collaborative team actions. The second is competence in using data which includes perceptions of how well teachers use data. Attitudes toward data are the third construct. The following construct is collaboration, and the last is organizational support. Based on the five frameworks, nine-question items were used to measure each framework component. Scoring was based on the Likert scale of agreement; 1=Strongly Disagree, 2=Disagree, 3=Agree, and 4=Strongly Agree for all questions presented. A descreptive statistic will be used to answer the first three research questions. To address the last research question, a one-way ANOVA will be performed. With the ANOVA, research will be conducted to determine if a relationship exists between all three respondent groups.

Using Statistical Package for Social Sciences (SPSS) (IBM Corp., 2022), analysis was conducted on the data collected. Means are computed for various answers to each question item with numerical values ranging from one to four. The table was modified from a district data use report, which correlates directly with the teacher data use survey. Table 4.5 compares the survey scale means by teaching experience for all educators regardless of the survey taken. The table below shows that attitudes toward data are lowest for educators with zero to five years of experience (M=3.16) and highest for educators with more than 20 years of experience (M=3.50). Computer data systems'

highest score was for educators with zero to five years of experience (M=3.38), and the lowest was for educators with 21-24 years of experience (M=3.15). Data effective pedagogy's highest mean score was for educators with six to ten years of experience (M=3.44), and the lowest score was tied with zero to five years and 21-24 years of experience (M=3.20). Educators with zero to five years of experience also have a higher score of (M=3.37) regarding support for data use than educators with 21-24 years of experience, with a score of (M=3.15). Based on the scores, all participants have agreeable scores.

Table 4.5

Tabular comparison of survey scale mean, by teaching experience.

Teaching experience	Attitudes toward data	Computer data systems	Data's effectiveness for pedagogy	Support for data use
0-5 years	3.16	3.38	3.20	3.37
6-10 years	3.44	3.18	3.44	3.11
11-15 years	3.36	3.32	3.33	3.22
16-20 years	3.43	3.16	3.37	3.28
21-24 years	3.22	3.15	3.20	3.15
Over 25 years	3.50	3.25	3.35	3.48
Total	3.35	3.24	3.32	3.27

Mean scores by respondent group listed in Table 4.6 are reported based on profession. Teachers responded more positively to attitudes toward data and data's effectiveness for pedagogy (M=3.39) than they did for support for data use and computer data use (M=3.31). Administrators' higest mean scores were in the "Attitudes toward data (M=3.50) and "Data effectiveness for pedagogy (M=3.32). Instructional support

staff had more positive attitudes toward “Computer data systems” (M=3.20), followed by “Attitudes toward data” (M=3.15). Overall, teachers, instructional support staff, and administrators all had positive response regarding attiudes toward data. The scale used for scoring was; 1=Strongly Disagree; 2=Disagree; 3=Agree; and 3=Strongly agree

Table 4.6

Tabular comparison of survey scale mean, by respondent group

Respondent group	Attitudes toward data	Computer data systems	Data's effectiveness for pedagogy	Support for data use
Teachers	3.39	3.27	3.38	3.31
Instructional Support Staff	3.15	3.20	3.06	3.11
Administrators	3.50	3.20	3.32	3.20

Exploring the responses based on grade levels are listed below in Table 4.7. Elementary-level professionals have a more positive “Attitudes toward data” (M=3.38) use versus Instructional support staff (District-wide) professionals (M= 3.15). In contrast, Instructional Support staff (District-wide) professionals have a more positive attitude concerning “Computer data systems” (M=3.27) than Elementary level teachers(M=1.99). High school teachers responded positively to the category “Attitudes toward data” (M=3.47). Data’s effectiveness for pedagogy scored high for Elementary (M=3.37), Middle (M=3.36), and High school (M=3.47) professionals, but the Instructional support staff’s score in this area was lower than all the other respondents (M=3.07). Respondents based in the schools have reported a lower satisfaction rate across the board in Computer data systems.

Table 4.7

Tabular comparison of survey scale mean, by grade level taught.

Grade level respondent group	Attitudes toward data	Computer data systems	Data's effectiveness for pedagogy	Support for data use
Elem K-6	3.38	1.99	3.37	3.26
Middle School 7-8	3.36	2.30	3.38	3.39
High School 9-12	3.47	2.21	3.40	3.25
District Wide	3.15	3.27	3.07	3.05

Table 4.8 provides information comparing data use by teachers, administrators, and support staff. It compares the ranking of frequency of use for local data which outlines their response based on their profession. The top five points of action for teachers are: (1) Identify instructional content to use in class (M=2.08); (2) Develop recommendations for additional instructional support (M=2.04); (3) Tailor instruction to individual student's needs (M=2.02); (4) Form small groups of students for targeted instruction (M=2.02); (5) Discuss data with a student (M=2.02).

The top five points of action for instructional support staff are: (1) Develop recommendations for additional instructional support (M=3.67); (2) Meet with a specialist about data (M=3.58); (3) Tailor instruction to individual student needs (M=3.50); (4) Meet with a teacher about data (M=3.42); and (5) Identify instructional content to use in class (3.42). The top five points of action for administrators are as follows: (1) Identify instructional content to use in class (M=2.08); (2) Meet with teacher about data (M=4.0); (3) Form small groups of students for targeted instructor (M=4.0); (4) Develop recommendations for additional instructional support (M=3.80); and (5) Tailor instruction to individual student needs (M=3.80). Last of the list was collaborative

items. For teachers, (8) Meet with a specialist about data (M=1.83). Instructional support staff last ranked items were (8) Discuss data with a parent (M=2.67). Administrators lowest ranked item was (8) Discuss data with a parent (M=3.00).

Table 4.8

Ordered means of local data uses, by respondent group.

Rank	Teacher	Instructional support staff	Administrators
1	Identify instructional content to use in class (2.08)	Develop recommendations for additional instructional support (3.67)	Identify instructional content to use in class. (4.0)
2	Develop recommendations for additional instructional support (2.04)	Meet with a specialist about data (3.58)	Meet with teacher about data (4.0)
3	Tailor instruction to individual student needs. (2.02)	Tailor instruction to individual student needs (3.50)	Form small groups of students for targeted instruction (4.0)
4	Form small groups of students for targeted instruction (2.02)	Meet with a teacher about data (3.42)	Develop recommendations for additional instructional support (3.80)
5	Discuss data with a student (2.02)	Identify instructional content to use in class (3.42)	Tailor instruction to individual student needs (3.80)
6	Meet with another teacher about data (1.94)	Discuss data with a student (3.25)	Discuss data with a student (3.60)
7	Discuss data with a parent (1.87)	Form small groups of students for targeted instruction (2.67)	Meet with a specialist about data (3.40)
8	Meet with a specialist about data (1.83)	Discuss data with a parent (2.67)	Discuss data with a parent (3.00)

Research Question 1: What are teachers' beliefs about data, data-driven decision-making, and student achievement? A total (*n*)52 teachers participated in the survey. Table 4.9 displays items 11a-11e. This group of questions asks about perceptions of the value of data for everyday pedagogy. Responses were rated 1=Strongly disagree, 2=Disagree, 3=Agree, 4=Strongly agree. Based on the responses, Table 4.9 displays the mean score for teachers regarding this topic. The average response was (M=3.38), concluding that the response varied between agree and strongly agreed. This yields a positive response toward data and its effectiveness for pedagogy. Participants responded positively to "Data helps teachers know what concepts students are learning."

Table 4.10 also displays the responses of teachers regarding attitudes toward data. The number of participants was *n*=52. The mean score amongst this data set was (M=3.39). On the response scale, results vary between the agree and strongly agree values. The mean score determined that teachers' attitude overall was favorable regarding their opinions regarding data. Teachers responded positively regarding finding data helpful and concluded that teachers' attitudes toward data are positive.

Table 4.9

Data effectiveness for pedagogy Respondent Group Teachers

Item	Frequency	Mean
11a. Data help teachers plan instruction	52	3.40
11.b Data offer information about students that was not already known.	52	3.31
11c. Data help teachers know what concepts students are learning.	52	3.44

Table 4.10

Attitudes toward data Respondent Group Teachers

Item	Frequency	Mean
11f. I think it is important to use data to inform education practice	52	3.40
11g. I like to use data.	52	3.38
11h. I find data useful	52	3.40
11i. Using data helps me be a better [teacher/educator].	52	3.37

Research Question 2: What are instructional support staff beliefs about data, data-driven decision-making, and student achievement? There was a total of 12 Instructional Support staff to participate in the research. Responses were rated 1=Strongly disagree, 2=Disagree, 3=Agree, 4=Strongly agree. Table 4.11 will illustrate the data effectiveness pedagogy for Instructional support staff. Amongst the three groups, Instructional Support staff had the lowest mean scores with items 11a-11e. The score was (M=3.07), and 11f-11i yielded an (M=3.15). When asked about the usefulness of data, instructional support staff agreed, and in some cases strongly agreed, regarding how well data works for pedagogy and how people feel about data.

As seen in Table 4.12, Instructional support staff have positive attitudes towards data but displayed a less than agreeable response to feeling that data offers information about students that was yet to be discovered. The highest mean score in the data effectiveness for the pedagogy set was data help teachers identify learning goals for students and students benefit when data inform teachers' instruction. Thus, teachers' attitudes and perceptions about data-driven decision-making are vital in driving instruction.

Table 4.11

Data effectiveness for pedagogy Respondent Group Instructional Support Staff

Item	Frequency	Mean
11a. Data help teachers plan instruction	12	3.08
11.b Data offer information about students that was not already known.	12	2.83
11c. Data help teachers know what concepts students are learning.	12	3.08
11d. Data help teachers identify learning goals for students	12	3.17
11e. Students benefit when teacher instruction is informed by data	12	3.17

Table 4.12

Attitudes toward data Respondent Group Instructional Support Staff

Item	Frequency	Mean
11f. I think it is important to use data to inform education practice	12	3.17
11g. I like to use data.	12	3.17
11h. I find data useful	12	3.17
11i. Using data helps me be a better [teacher/educator].	12	3.08

Research Question 3: What are administrators' beliefs about data, data-driven decision-making, and student achievement? Responses were rated 1=Strongly disagree, 2=Disagree, 3=Agree, 4=Strongly agree. There was a total of (*n*)=5 administrators who participated in the study. Table 4.13 collective (M=3.32) and Table 4.14 had an (M=3.5). Out of this entire set, administrators' responses confirmed that using data helps individuals to be better educators. Among the lowest rating was data that offered information about students that was not already known. This was the lowest rating among all three groups of educators. They all placed less emphasis on data offering information about students yet to be discovered.

Table 4.13

Data effectiveness for pedagogy Respondent Group Administrators

Item	Frequency	Mean
11a. Data help teachers plan instruction	5	3.40
11.b Data offer information about students that was not already known.	5	3.20
11c. Data help teachers know what concepts students are learning.	5	3.20
11d. Data help teachers identify learning goals for students	5	3.40
11e. Students benefit when teacher instruction is informed by data	5	3.40

Table 4.14

Attitudes toward data Respondent Group Administrators

Item	Frequency	Mean
11f. I think it is important to use data to inform education practice	5	3.40
11g. I like to use data.	5	3.40
11h. I find data useful	5	3.40
11i. Using data helps me be a better [teacher/educator].	5	3.80

In the age of accountability, this work will determine if there is a relationship between teachers, instructional support staff, and administrators' attitudes and beliefs about data, data-driven decision-making, and student achievement. The research question is as follows: Research Question 4: Is there a relationship between teachers, instructional support staff, and administrators' attitudes and beliefs concerning data-driven decision-making and student achievement?

A one-way between-subjects ANOVA was conducted to compare the effects of attitudes about data in teachers, instructional support staff, and administrators affect

student achievement is found in Table 4.15. There was no statistically significant difference between groups as determined by one-way ANOVA ($F(2,66) = 1.625$, $p = .229$).

Table 4.15

ANOVA Results

Predictor		Sum of Squares	Df	Mean square	F	Sig
Schools Accountability Scores	Between groups	2.969	2	1.485	1.509	.229
	Within Groups	64.944	66	.984		
	Total	67.913	68			
Educators' Attitudes about data and data usage	Between groups	.409	2	.204	.797	.455
	Within Groups	16.924	66	.256		
	Total	17.333	68			

CHAPTER V – CONCLUSION

Conclusion

Accountability models within today's school systems pressure educators and students to make specific accountability grades. If grades are not up to par and are consistently low, then the school's rating will be less than desirable. Low scores could lead to educational state departments taking over school districts. The challenge is to ensure that each student achieves at the highest level, thus leading to a higher ranking in the accountability model. This also means that control of the school district remains local.

The emergence of data has led to the need for data-driven decision-making. This research aimed to ascertain if there is a relationship between teachers, instructional support staff, and administrators' attitudes and beliefs concerning data-driven decision-making and student achievement. This study also examined the attitudes and beliefs about data, data-driven decision-making, and student achievement for each respondent group of professionals (teachers, instructional support staff, and administrators). The purpose of seeking understanding for each group and its relationship to student achievement will assist school districts in determining what collaborative efforts are in place to drive instruction. Professional development highlighting support in this area could be beneficial and practical for student achievement. Raw data can become powerful when transformed into knowledge. The data will become information that can be used to improve student achievement. Information about the existence and nature of associations between teachers, instructional support staff, and administrators' data use practices, perspectives, and student accomplishment are urgently needed.

The dependent variables were the teachers, instructional support staff, and administrators' attitudes about data, data-driven decision-making, and student achievement. The independent variables identified were designated professional titles, years of experience, and school level taught. This study focused on the professional title and attitudes about local data and its relationship to student achievement. The accountability model has made data and data-driven decision-making a necessity in education. There is a need to determine if data is truly driving the decision-making process. The decisions will determine how teachers make informed decisions to improve student achievement.

This research supports the need to ensure educators are data literate. Data literacy should be more intertwined in the coursework of pre-service teachers. It creates a data-rich environment that not only allows teachers to make vital decisions but also allows students an opportunity to thrive. In the current context of accountability, equitable education is a must. Making data-driven decision-making is constantly requested, but teachers are not always equipped to perform. Many factors could hinder teacher performance, including negative repercussions for less-than-stellar student achievement scores. Getting back to the basics and understanding that educating the whole child is more important and creating an environment that promotes positive student learning will be in the best interest of all students.

The first aim of this study was to examine teachers'; instructional support staff; and administrators' attitudes and beliefs about data, data-driven decision-making, and student achievement. Individually all responses were favorable towards having positive attitudes about the importance of data and its usage towards increasing student

achievement. The focus should be continuously adapting instruction in the classroom and beyond to facilitate and optimize students' learning processes, considering learners' needs and individual characteristics (Mandinach & Schildkamp, 2021).

However, grasping the concept of knowing the importance of data and data usage and the implementation process differ for respondents in this research. Thus, highlighting the need for data teams and more support to ensure common goals are followed. Mandinach and Schildkamp (2021) state that adopting an equity lens may well be the most critical contribution that the data-based decision-making field can make in education; that is, the shift to understanding the whole child, with context and other variables helping to enhance the interpretation of student performance through cultural responsiveness. This research suggests that data and data usage alone have not conclusively attributed to student achievement. Other factors will need to be examined.

Ultimately, this study examined whether a relationship existed among teachers, instructional support staff, and administrators' attitudes and beliefs about data, data-driven decision-making, and student achievement. This research did not find a statistically significant difference. Results report that all respondent groups had positive attitudes toward data and data-driven decision-making. The examination of Table. 4.8 displayed precisely how much of a difference the responses were. In the action side of data use, differences in how to put data into action varied. (Hamilton et al., 2009) The existing research on using data to make the Scope of the practice guide instructional decisions does not yet provide conclusive evidence of what works to improve student achievement. This body of research could not conclude that there is an ideal avenue that will lead to an increase in student achievement. This research adds to the literature that

although educators have access to mountains of data, analyzing the data and making a connection to utilizing it in the classroom is only sometimes clear and concise.

Implications

The first implication is the need for data literacy amongst all stakeholders. Research shows that instructors battle with the utilization of information. With the expansion of information and data, teachers are swamped and must possess techniques for separating through a large amount of data (Hamilton et al., 2009). Teachers, at times, neglect to direct the right sorts of examination. They experience issues associating the information with their guidance in the classroom and interpreting the information into an activity plan (Brown, Schildkamp, & Hubers, 2017; Schildkamp & Kuiper, 2010; Schildkamp & Poortman, 2015; Schildkamp et al., 2016). The lack of data literacy could pose problems when teachers, administrators, or instructional support staff are responsible for making data-informed decisions.

The research study found that teachers, instructional support staff, and administrators feel that data helps teachers identify learning goals for students. Students benefit when data inform the teacher's instruction. Overall, all participants have favorable responses and agreeable attitudes regarding attitudes about data and their perception of the value of data for everyday pedagogy. Relevant data and up-to-date technology are the bases of data use; however, educators are still tasked with knowing how to use data to make informed decisions. (Mandinach & Gummer, 2016). Concerns remain that there is an absence of inside limit and an absence of sufficient readiness at the pre-service or in-service level for educators, starting with evaluation proficiency regarding data literacy (Mandinach & Gummer, 2013; Mandinach, Friedman, &

Gummer, 2015; Reeves & Honig, 2015; Reeves, 2017; Schafer & Lissitz, 1987; Wise, Lukin, & Roos, 1991).

The subsequent implication is the need to have the formation of data teams. This study found a lack of continuity regarding action items involving the data-driven decision-making portion. Non-statistical differences were found in the research amongst all stakeholders. Connection regarding data and data-driven decision-making are crucial components for teachers, instructional support staff, and administrators for a school or district to have the same goals regarding student achievement. Instructional support staff (District level employees) views about data effectiveness for pedagogy differed slightly from the teachers and building-level administrators. This slight difference could be due to actual time spent with students daily versus occasional interactions.

Teachers frequently do not have support from data coaches or teams, which influences the need for meaningful professional development (Jimerson et al., 2019; Lai & McNaughton, 2013; Schildkamp & Kuiper, 2010; Schildkamp & Poortman, 2015). Actions concerning data within this research discuss how often specific actions should take place and collaborative efforts regarding data. There is a disconnect between how often teachers demonstrate said actions listed in the survey versus how often administrators and Instructional support staff view specific actions taking place. This disconnect in expectations should be addressed with all parties involved. Professional development and the support of data coaches to ensure everyone is on one accord will assist in continuing the conversation surrounding how to use a large amount of data. Providing additional support adds to the argument that there is a need to formulate data

teams within a school. A conversation to align outcomes should be made to further push the narrative for cohesiveness throughout the district.

The last implication of this study is to consider that additional factors affect student achievement, not just data. Data analysis includes identifying what learners need. Learners' needs could vary simply based on the school of attendance. Schools can classify as Title I or Non-Title I. Schools that meet the criteria for Title I funding have a high percentage of their pupils qualify for free or reduced -price meals. The socioeconomic status of these students comes into play when determining environmental factors associated with student development. What resources are available to students to ensure an equitable education is possible?

Most school districts have implemented the one-to-one technology initiative. How equitable is receiving a laptop but not having internet service? Those factors play a crucial role in student achievement. Non-statistically significant findings pose an unlimited number of questions concerning what exists about evident based practices for student achievement. This implication coincides with the previous implication regarding the creation of data teams. Creating data teams to help provide support for teachers could lead to a focus filled with meaningful professional development. This type of focus has the potential to create more equitable education for all students through the use of data (Datnow & Park, 2018).

In conclusion, teachers, instructional support staff, and administrators have similar positive attitudes toward data-driven decision-making regarding student achievement. Data literacy is vital in this process. Correspondingly, implementing actions to take with data and data-driven decision-making could be more precise and concise

amongst all three stakeholders. Collaboration, buy-in from all stakeholders, and collective goals will need to be in place to push for a cohesive unit working towards ensuring student achievement.

Limitations

The purpose of this study was to examine the attitudes and beliefs of teachers, instructional support staff, and administrators concerning data, data-driven decision-making, and its relationship to student achievement individually and collectively. The first limitation of this study was the number of participants'/sample size. An email was sent to the entire school district, but only five (5) building-level administrators allowed the researcher to administer the survey. The sample size of (*N*) 69 participants is not representative of the districts' entire demographic, resources, and training. The following limitation is also associated with one school district being used in the study. The researcher conducted a convenience sampling survey because participants would be easily accessible. Increasing the number of participants within the district could provide the district with a better outlook concerning data, data-driven decision-making, and student achievement. Due to the use of one school district, the research findings cannot be generalized across multiple settings or in other school districts.

The survey requires fidelity among participants. The researcher anticipates that all survey participants answered the survey truthfully. The research analyzed local data in which participants had to self-report. Thus, the researcher cannot definitively verify that all participants' responses are truthful. Participants identity remained anonymous; however, the researcher still may have participants who respond agreeably since findings will be accessible to administrators should they request it. Correspondingly, Social

desirability bias could play a role in the information participants reported. Another limitation of the study was that the data was not separated based on individual schools. Both elementary schools' data were combined and reported. Lastly, teachers were not categorized based on general or special education teachers. The expectations of student achievement will vary based on the student's ability level.

Lastly, this study did not produce conclusive findings. On the basis of this investigation, no arbitrary conclusions regarding the nature of these associations can be drawn. This research does not assert that encouraging data use and paying attention to it in the classroom or at school leads to better student achievement. Instead, this study offers solid proof that, as particular parts of data use increase, so does student accomplishment levels. This study does not exclude the possibility that another factor contributed to the improvement in success as well as the amount or degree of data use.

Directions for Future Research

This body of research initiated a conversation within this school district about how data can drive instruction and lead to student achievement. Although the research did not find a statistically significant difference among participants, this study provided a basis to explore further the pipeline of information associated with data in its raw state and how transformative it could be based on an educator's perspective. Participant sample size will need to be increased to determine attitudes and beliefs about data, data-driven decision-making, and student achievement. For findings to be generalized across multiple settings, the researcher will have additional school districts included in future studies.

Future research with more participants will assist in further progressing the topic of data-driven decision-making. Educators will first have to begin the process by acknowledging that a common goal regarding student achievement must be the initial concern, not just the use of the data. Expounding and combining data from various sources will provide a better understanding of the needs of all the students. Examples of multiple sources include but are not limited to differences in socio-economic status, functioning levels, and academic performance levels. The formation of data teams will allow for a process of collective sense-making which will ensure all stakeholders are on one accord. Students are included as a stakeholder. Students must clearly understand the data to improve their educational journey. Further suggestions for research are gathering more demographic information on students to understand all factors that affect student achievement.

Data-driven decision-making could function as helpful or harmful depending on the intentions (Jimerson, Garry, Poortman & Schildkamp, 2021). Although increasing student achievement is a novel goal for data use, educators must also broaden the focus to ensure the whole child is fully nurtured. Researching additional data sources and ways to implement data-driven decision-making in hopes of transforming the data into useful information is another future implication for this body of research. Hence, the need to analyze supplementary data available in addition to test scores.

The next suggestion for future research is district level instructional support staff, building-level administrators, and teachers' relationships should be examined closely to ensure continuity across the district. To promote teachers', buy-in on a rich DDDM environment, further research could be done to examine the characteristics a leader

possesses who creates such environments that promote the comfortability of data and data usage amongst not only the teachers but students. For example, administrators should have a model for information use in a positive and informative measure as opposed to a negative connotation. Teachers should not have a feeling of punishment instead of an opportunity to improve student achievement. There will need to be a balance of data use and the goal should be constant improvement for student achievement.

In the future, this study could become a longitudinal study to ascertain the results on student success if the teachers were provided with the same data in the same manner to make the data-driven decision that increases student achievement. A two-way ANOVA analysis could have been beneficial in a future study of this type. Researchers could place the educators into groups based on their immediate administrators' level of understanding of data and then group them based on their administrators' years of experience. This would allow a future researcher to compare the multiple levels' effect on the two factors.

Lastly, future research on this topic involves data literacy. Research states that more exploration on how the data skills interact with content knowledge and pedagogical content knowledge is necessary (Mandinach & Gummer, 2016b). Leading to the importance of data literacy and analyzation when potential teachers are taking undergraduate courses. Data is in abundance in many aspects of education.

The Multi-Tiered System of Supports (MTSS) is a framework that helps educators provide academic and behavioral strategies for students with various needs. Data is a vital proponent of this process. Educators are required to take the data collected to make informed decisions about which tier students should be placed in. Increasing

data literacy for potential educators by adding more courses surrounded the topic will further assist in improving data literacy within the school system. Educators must recognize the importance of the merger of the culturally responsive pedagogy with data literacy (Mandinach et al., 2019) to take a whole child perspective and an equity lens while assuming an asset-based model (Datnow & Park, 2018). In conclusion, data and data-driven decision-making have vast scopes of implications that research cannot focus on a single focal point. The topic is extremely robust and additional research is crucial on the topic.

APPENDIX A – IRB APPROVAL LETTER

Office *of*
Research Integrity

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

118 COLLEGE DRIVE #5116 • HATTIESBURG, MS | 601.266.6756 | WWW.USM.EDU/ORI

NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident submission on InfoEd IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER:	22-946
PROJECT TITLE:	An examination of teachers, instructional support staff, and administrators' attitudes and beliefs concerning data driven decision making and its relationship to student achievement.
SCHOOL/PROGRAM	School of Education
RESEARCHERS:	PI: LaShandra McClure Investigators: Lee, David~McClure, LaShandra~
IRB COMMITTEE ACTION:	Approved
CATEGORY:	Expedited Category
PERIOD OF APPROVAL:	15-Sep-2022 to 14-Sep-2023

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

APPENDIX B - Teacher Data Use Survey: Teacher Version

Items used from

The following questions ask about various forms of data that you may use in your work.

1. Are the following forms of data available to you?

Form of data	Yes	No
<State data>		
<Periodic data>		
<Local data>		
<Personal data>		
Other		

If you indicated "no" to all options in question 1, skip to question 10. If you responded "yes" to any option, please proceed to question 2.

2. Teachers use all kinds of information (i.e., data) to help plan for instruction that meets student learning needs. How frequently do you use the following forms of data?

Forms of data	Do not use	Less than once a month	Once or twice a month	Weekly or almost weekly	A few times a week
<State data>					
<Periodic data>					
<Local data>					
<Personal data>					
Other					

3. If you marked the "other" option above, please specify the form of data here:

_____

_____

4. Now, how useful are the following forms of data to your practice?

Forms of data	Not useful	Somewhat useful	Useful	Very useful
<State data>				
<Periodic data>				
<Local data>				
<Personal data>				
Other				

5. If you marked the "other" option above, please specify the form of data here:

If you indicated <state data> is not available to you in question 1, OR if you indicated that you do not use <state data> in question 2, please go to question 7.

6. These questions ask about <state data>. In a typical school year, how often do you do the following?

Actions	One or two times a year	A few times a year	Monthly	Weekly
a.Use <state data> to identify instructional content to use in class				
b.Use <state data> to tailor instruction to individual students' needs				
c. Use <state data> to develop recommendations for additional instructional support				
d.Use <state data> to form small groups of students for targeted instruction				
e. Discuss <state data> with a parent or guardian.				
f.Discuss <state data> with a student				
g. Meet with a specialist (e.g. instructional coach or data coach) about <state data>,				
h. Meet with another teacher about <state data>				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use.* Unpublished Instrument				

If you indicated the <periodic data> is "not available" to you in question 1, OR if you indicated that you "do not use" <periodic data in question 2, please go to question 8.

7. These questions ask about <periodic data> used in your school or district. In a typical month, how often do you do the following?

Actions	Less than once a month	Once or twice a month	Weekly or almost weekly	A few times a week
a.Use <periodic data> to identify instructional content to use in class				

b.Use <periodic data> to tailor instruction to individual students' needs				
c. Use <periodic data> to develop recommendations for additional instructional support				
d.Use <periodic data> to form small groups of students for targeted instruction				
e. Discuss <periodic data> with a parent or guardian.				
f.Discuss <periodic data> with a student				
g. Meet with a specialist (e.g. instructional coach or data coach) about <periodic data>				
h. Meet with another teacher about <periodic data>				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use.* Unpublished Instrument				

If you indicated that <local data> is not available to you in question 1, OR if you indicated that you do not use <local data> in question 2, please go to question 9.

8. These questions ask about <local data> developed and used in your school or district. In a typical month, how often do you do the following?

Actions	Less than once a month	Once or twice a month	Weekly or almost weekly	A few times a week
a.Use <local data> to identify instructional content to use in class				
b.Use <local data> to tailor instruction to individual students' needs				
c. Use <local data> to develop recommendations for additional instructional support				
d.Use <local data> to form small groups of students for targeted instruction				
e. Discuss <local data> with a parent or guardian.				
f.Discuss <local data> with a student				

g. Meet with a specialist (e.g. instructional coach or data coach) about <local data>				
h. Meet with another teacher about <local data>				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

If you indicated that <personal data> is not available to you in question 1, OR if you indicated that you do not use <personal data> in question 2, please go to question 10.

9. These questions ask about <personal data>. In a typical month, how often do you do the following?

Actions	Less than once a month	Once or twice a month	Weekly or almost weekly	A few times a week
a.Use <personal data> to identify instructional content to use in class				
b.Use <personal data> to tailor instruction to individual students' needs				
c. Use <personal data> to develop recommendations for additional instructional support				
d.Use <personal data> to form small groups of students for targeted instruction				
e. Discuss <personal data> with a parent or guardian.				
f.Discuss <personal data> with a student				
g. Meet with a specialist (e.g. instructional coach or data coach) about <personal data>				
h. Meet with another teacher about <personal data>				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

The remainder of this survey asks general questions about the use of data to inform your education practice. For the rest of this survey, please consider only the following when you are asked about "data:

- *State achievement tests.*
- *Periodic assessments*
- *Locally developed assessments*

10. These questions ask about supports for using data. Please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.I am adequately supported in the effective use of data				
b.I am adequately prepared to use data				
c. There is someone who answers my questions about using data.				
d. There is someone who helps me change my practice (e.g., my teaching) based on data.				
e. My district provides enough professional development about data use.				
f. My district's professional development is useful for learning about data use.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

11. These questions ask about your attitudes and opinions regarding data. Please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.Data help teachers plan instruction				
b. Data offer information about students that was not already known				
c. Data help teachers know what concepts students are learning.				
d.Data help teachers identify learning goals for students.				
e. Students benefit when teacher instruction is informed by data.				
f. I think it is important to use data to inform education practice.				
g. I like to use data.				
h. I find data useful.				
i.Using data helps me be a better teacher.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

12. These questions ask how you principal and assistant principal(s) support you in using data. Principals and assistant principals will not be able to see your answers. Please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.My principal or assistant principal(s) encourages data use as a tool to support effective teaching.				
b. My principal or assistant principal(s) creates many opportunities for teachers to use data.				
c. My principal or assistant principal(s) has made sure teachers have plenty of training for data use.				
d. My principal or assistant principal(s) is a good example of an effective data user.				
e. My principal or assistant principal(s) discusses data with me.				
f. My principal or assistant principal(s) creates protected time for using data.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

13. Your school or district gives you programs, systems, and other technology to help you access and use student data. The following questions ask about these computer systems. Please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.I have the proper technology to efficiently examine data				
b.The computer system in my district provide me access to lots of data.				
c.The computer systems (for data use) in my district are easy to use.				
d. The computer syst3ems in my district allow me to examine various types of data at once (e.g. attendance, achievement, demographics).				
e. The computer systems in my district generate displays (e.g., reports, graphs, tables) that ar3e useful to me.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

14. These questions ask about your attitudes toward your own use of data. Please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.I am good at using data to diagnose student learning needs.				
b. I am good at adjusting instruction based on data.				
c. I am good at using data to plan lessons				
d.I am good at using data to set student learning goals.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

15. How often do you have scheduled meetings to work in collaborative team(s)? Check only one.)
    - o Less than once a month
    - o Once or twice a month
    - o Weekly or almost weekly
    - o A few times a week
    - o I do not have scheduled meetings to work in collaborative teams.

If you answered " I do not have scheduled meetings to work in collaborative teams" in question 15, please go to question 18.

16. As you think about your collaborative team(s). please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.Members of my team trust each other.				
b.It's ok to discuss feelings and worries with other members of my team.				
c.Members of my team respect those colleagues who are experts in their craft.				
d. Members of my team respect those colleagues who are experts in their craft.				
e. My principal or assistant principal(s) fosters a trusting environment for discussing data in teams.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

17. How often do you and your collaborative team(s) do the following?

Statement	Never	Sometimes	Often	A lot
a.We approach an issue by looking at data				
b.We discuss our preconceived beliefs about an issue.				
c. We identify questions that we will seek to answer using data				
d. We explore data by looking for patterns and trends.				
e. We draw conclusions based on data.				
f. We identify additional data to offer a clearer picture of the issue.				
g. We use data to make links between instruction and student outcomes.				
h. When we consider changes in practice, we predict possible student outcomes.				
i.We revisit prediction made in previous meetings.				
j. We identify actionable solutions based on our conclusions.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

18. What else would you like to share with us about data use?

APPENDIX C– Teacher Data Use Survey: Instructional Support Staff Version

The following questions ask about various forms of data that you may use in their work.

1. Are the following forms of data available to the teachers you support?

Form of data	Yes	No
<State data>		
<Periodic data>		
<Local data>		
<Personal data>		
Other		

If you indicated "no" to all options in question 1, skip to question 10. If you responded "yes" to any option, please proceed to question 2.

2. Teachers use all kinds of information (i.e., data) to help plan for instruction that meets student learning needs. How frequently do the teachers you support use the following forms of data?

Forms of data	Do not use	Less than once a month	Once or twice a month	Weekly or almost weekly	A few times a week
<State data>					
<Periodic data>					
<Local data>					
<Personal data>					
Other					

3. If you marked the "other" option above, please specify the form of data here:

_____

_____

4. Now, how useful are the following forms of data to teachers practice?

Forms of data	Not useful	Somewhat useful	Useful	Very useful
<State data>				
<Periodic data>				
<Local data>				
<Personal data>				
Other				

5. If you marked the "other" option above, please specify the form of data here:

_____

_____

If you indicated that <state data> is not available to your teachers in question 1, OR if you indicated that your teachers do not use <state data> in question 2, please go to question 7.

6. These questions ask about <state data>. In a typical school year, how often do the teachers you support do the following?

Actions	One or two times a year	A few times a year	Monthly	Weekly
a.Use <state data> to identify instructional content to use in class				
b.Use <state data> to tailor instruction to individual students' needs				
c. Use <state data> to develop recommendations for additional instructional support				
d.Use <state data> to form small groups of students for targeted instruction				
e. Discuss <state data> with a parent or guardian.				
f.Discuss <state data> with a student				
g. Meet with a specialist (e.g. instructional coach or data coach) about <state data>,				
h. Meet with another teacher about <state data>				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

If you indicated the <periodic data> is "not available" to your teachers in question 1, OR if you indicated that the teachers you support "do not use" <periodic data in question 2, please go to question 8.

7. These questions ask about <periodic data> used in your school or district. In a typical month, how often do the teachers you support do the following?

Actions	Less than once a month	Once or twice a month	Weekly or almost weekly	A few times a week
a.Use <periodic data> to identify instructional content to use in class				
b.Use <periodic data> to tailor instruction to individual students' needs				
c. Use <periodic data> to develop recommendations for additional instructional support				

d.Use <periodic data> to form small groups of students for targeted instruction				
e. Discuss <periodic data> with a parent or guardian.				
f.Discuss <periodic data> with a student				
g. Meet with a specialist (e.g. instructional coach or data coach) about <periodic data>				
h. Meet with another teacher about <periodic data>				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

If you indicated that <local data> is not available to your teachers in question 1, OR if you indicated that your teachers do not use <local data> in question 2, please go to question 9.

8. These questions ask about <local data> developed and used in your school or district. In a typical month, how often do the teachers you support do the following?

Actions	Less than once a month	Once or twice a month	Weekly or almost weekly	A few times a week
a.Use <local data> to identify instructional content to use in class				
b.Use <local data> to tailor instruction to individual students' needs				
c. Use <local data> to develop recommendations for additional instructional support				
d.Use <local data> to form small groups of students for targeted instruction				
e. Discuss <local data> with a parent or guardian.				
f.Discuss <local data> with a student				
g. Meet with a specialist (e.g. instructional coach or data coach) about <local data>				
h. Meet with another teacher about <local data>				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

If you indicated that <personal data> is not available to your teachers in question 1, OR if you indicated that your teachers do not use <personal data> in question 2, please go to question 10.

9. These questions ask about <personal data>. In a typical month, how often do the teachers you support do the following?

Actions	Less than once a month	Once or twice a month	Weekly or almost weekly	A few times a week
a.Use <personal data> to identify instructional content to use in class				
b.Use <personal data> to tailor instruction to individual students' needs				
c. Use <personal data> to develop recommendations for additional instructional support				
d.Use <personal data> to form small groups of students for targeted instruction				
e. Discuss <personal data> with a parent or guardian.				
f.Discuss <personal data> with a student				
g. Meet with a specialist (e.g. instructional coach or data coach) about <personal data>				
h. Meet with another teacher about <personal data>				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

The remainder of this survey asks general questions about the use of data to inform your education practice. For the rest of this survey, please consider only the following when you are asked about "data:

- *State achievement tests.*
- *Periodic assessments*
- *Locally developed assessments*

10. These questions ask about supports for using data. Please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.My teachers adequately supported in the effective use of data				
b.My teachers adequately prepared to use data				

c. There is someone who answers my teachers questions about using data.				
d. There is someone who helps my teachers change my practice (e.g., my teaching) based on data.				
e. My district provides my teachers enough professional development about data use.				
f. My district's professional development for my teachers is useful for learning about data use.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

11. These questions ask about your attitudes and opinions regarding data. Please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.Data help teachers plan instruction				
b. Data offer information about students that was not already known				
c. Data help teachers know what concepts students are learning.				
d.Data help teachers identify learning goals for students.				
e. Students benefit when teacher instruction is informed by data.				
f. I think it is important to use data to inform education practice.				
g. I like to use data.				
h. I find data useful.				
i.Using data helps me be a better educator.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

12. These questions ask how you principal and assistant principal(s) support you in using data. Principals and assistant principals will not be able to see your answers. Please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.My principal or assistant principal(s) encourages data use as a tool to support effective teaching.				
b. My principal or assistant principal(s) creates many opportunities for teachers to use data.				
c. My principal or assistant principal(s) has made sure teachers have plenty of training for data use.				

d. My principal or assistant principal(s) is a good example of an effective data user.				
e. My principal or assistant principal(s) discusses data with my teachers.				
f. My principal or assistant principal(s) creates protected time for using data.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use.* Unpublished Instrument				

13. Your school or district gives you programs, systems, and other technology to help you access and use student data. The following questions ask about these computer systems. Please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.I have the proper technology to efficiently examine data				
b.The computer system in my district provide me access to lots of data.				
c.The computer systems (for data use) in my district are easy to use.				
d. The computer syst3ems in my district allow me to examine various types of data at once (e.g. attendance, achievement, demographics).				
e. The computer systems in my district generate displays (e.g., reports, graphs, tables) that ar3e useful to me.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use.* Unpublished Instrument				

14. These questions ask about your attitudes toward my teachers use of data. Please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.My teachers good at using data to diagnose student learning needs.				
b. My teachers good at adjusting instruction based on data.				
c. My teachers good at using data to plan lessons				
d.My teachers good at using data to set student learning goals.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use.* Unpublished Instrument				

15. How often do you have scheduled meetings to work in collaborative team(s)? Check only one.)
    - o Less than once a month
    - o Once or twice a month
    - o Weekly or almost weekly
    - o A few times a week
    - o I do not have scheduled meetings to work in collaborative teams.

If you answered "I do not have scheduled meetings to work in collaborative teams" in question 15, please go to question 18.

16. As you think about your collaborative team(s). please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.Members of my team trust each other.				
b.It's ok to discuss feelings and worries with other members of my team.				
c.Members of my team respect those colleagues who are experts in their craft.				
d. Members of my team respect those colleagues who are experts in their craft.				
e. My principal or assistant principal(s) fosters a trusting environment for discussing data in teams.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

17. How often do you and your collaborative team(s) do the following?

Statement	Never	Sometimes	Often	A lot
a.We approach an issue by looking at data				
b.We discuss our preconceived beliefs about an issue.				
c. We identify questions that we will seek to answer using data				
d. We explore data by looking for patterns and trends.				
e. We draw conclusions based on data.				
f. We identify additional data to offer a clearer picture of the issue.				
g. We use data to make links between instruction and student outcomes.				
h. When we consider changes in practice, we predict possible student outcomes.				
i.We revisit prediction made in previous meetings.				

j. We identify actionable solutions based on our conclusions.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

18. What else would you like to share with us about data use?

APPENDIX D – Teacher Data Use Survey: Administrator Version

The following questions ask about various forms of data that you may use in their work.

1. Are the following forms of data available to the teachers?

Form of data	Yes	No
<State data>		
<Periodic data>		
<Local data>		
<Personal data>		
Other		

If you indicated "no" to all options in question 1, skip to question 10. If you responded "yes" to any option, please proceed to question 2.

2. Teachers use all kinds of information (i.e., data) to help plan for instruction that meets student learning needs. How frequently do your teachers use the following forms of data?

Forms of data	Do not use	Less than once a month	Once or twice a month	Weekly or almost weekly	A few times a week
<State data>					
<Periodic data>					
<Local data>					
<Personal data>					
Other					

3. If you marked the "other" option above, please specify the form of data here:

_____

_____

4. Now, how useful are the following forms of data to teachers practice?

Forms of data	Not useful	Somewhat useful	Useful	Very useful
<State data>				
<Periodic data>				
<Local data>				
<Personal data>				
Other				

5. If you marked the "other" option above, please specify the form of data here:

_____

_____

If you indicated that <state data> is not available to your teachers in question 1, OR if you indicated that your teachers do not use <state data> in question 2, please go to question 7.

6. These questions ask about <state data>. In a typical school year, how often do your teachers do the following?

Actions	One or two times a year	A few times a year	Monthly	Weekly
a.Use <state data> to identify instructional content to use in class				
b.Use <state data> to tailor instruction to individual students' needs				
c. Use <state data> to develop recommendations for additional instructional support				
d.Use <state data> to form small groups of students for targeted instruction				
e. Discuss <state data> with a parent or guardian.				
f.Discuss <state data> with a student				
g. Meet with a specialist (e.g. instructional coach or data coach) about <state data>,				
h. Meet with another teacher about <state data>				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use.* Unpublished Instrument				

If you indicated the <periodic data> is "not available" to your teachers in question 1, OR if you indicated that your teachers "do not use" <periodic data in question 2, please go to question 8.

7. These questions ask about <periodic data> used in your school or district. In a typical month, how often do your teachers do the following?

Actions	Less than once a month	Once or twice a month	Weekly or almost weekly	A few times a week
a.Use <periodic data> to identify instructional content to use in class				
b.Use <periodic data> to tailor instruction to individual students' needs				
c. Use <periodic data> to develop recommendations for additional instructional support				

d.Use <periodic data> to form small groups of students for targeted instruction				
e. Discuss <periodic data> with a parent or guardian.				
f.Discuss <periodic data> with a student				
g. Meet with a specialist (e.g. instructional coach or data coach) about <periodic data>				
h. Meet with another teacher about <periodic data>				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

If you indicated that <local data> is not available to your teachers in question 1, or if you indicated that your teachers do not use <local data> in question 2, please go to question 9.

8. These questions ask about <local data> developed and used in your school or district. In a typical month, how often do your teachers do the following?

Actions	Less than once a month	Once or twice a month	Weekly or almost weekly	A few times a week
a.Use <local data> to identify instructional content to use in class				
b.Use <local data> to tailor instruction to individual students' needs				
c. Use <local data> to develop recommendations for additional instructional support				
d.Use <local data> to form small groups of students for targeted instruction				
e. Discuss <local data> with a parent or guardian.				
f.Discuss <local data> with a student				
g. Meet with a specialist (e.g. instructional coach or data coach) about <local data>				
h. Meet with another teacher about <local data>				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

If you indicated that <personal data> is not available to your teachers in question 1, or if you indicated that your teachers do not use <personal data> in question 2, please go to question 10.

9. These questions ask about <personal data>. In a typical month, how often do your teachers do the following?

Actions	Less than once a month	Once or twice a month	Weekly or almost weekly	A few times a week
a.Use <personal data> to identify instructional content to use in class				
b.Use <personal data> to tailor instruction to individual students' needs				
c. Use <personal data> to develop recommendations for additional instructional support				
d.Use <personal data> to form small groups of students for targeted instruction				
e. Discuss <personal data> with a parent or guardian.				
f.Discuss <personal data> with a student				
g. Meet with a specialist (e.g. instructional coach or data coach) about <personal data>				
h. Meet with another teacher about <personal data>				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

The remainder of this survey asks general questions about the use of data to inform your education practice. For the rest of this survey, please consider only the following when you are asked about "data:

- *State achievement tests.*
- *Periodic assessments*
- *Locally developed assessments*

10. These questions ask about supports for using data. Please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.My teachers adequately supported in the effective use of data				
b.My teachers adequately prepared to use data				
c. There is someone who answers my teachers questions about using data.				
d. There is someone who helps my teachers change my practice (e.g., my teaching) based on data.				

e. My district provides my teachers enough professional development about data use.				
f. My district's professional development for my teachers is useful for learning about data use.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

11. These questions ask about your attitudes and opinions regarding data. Please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.Data help teachers plan instruction				
b. Data offer information about students that was not already known				
c. Data help teachers know what concepts students are learning.				
d.Data help teachers identify learning goals for students.				
e. Students benefit when teacher instruction is informed by data.				
f. I think it is important to use data to inform education practice.				
g. I like to use data.				
h. I find data useful.				
i.Using data helps me be a better educator.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

12. These questions ask about teacher supports for using data. Please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.I encourage data use as a tool to support effective teaching.				
b. I create many opportunities for teachers to use data.				
c. I have made sure teachers have plenty of training for data use.				
d. I am a good example of an effective data user.				
e. I discuss data with my teachers.				
f. I create protected time for using data.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

13. Your school or district gives you programs, systems, and other technology to help you access and use student data. The following questions ask about these computer systems. Please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.I have the proper technology to efficiently examine data				
b.The computer system in my district provide me access to lots of data.				
c.The computer systems (for data use) in my district are easy to use.				
d. The computer syst3ems in my district allow me to examine various types of data at once (e.g. attendance, achievement, demographics).				
e. The computer systems in my district generate displays (e.g., reports, graphs, tables) that ar3e useful to me.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

14. These questions ask about your attitudes toward my teachers use of data. Please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.My teachers good at using data to diagnose student learning needs.				
b. My teachers good at adjusting instruction based on data.				
c. My teachers good at using data to plan lessons				
d.My teachers good at using data to set student learning goals.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use*. Unpublished Instrument				

15. How often do you have scheduled meetings to work in collaborative team(s)? Check only one.)
    - o Less than once a month
    - o Once or twice a month
    - o Weekly or almost weekly
    - o A few times a week
    - o I do not have scheduled meetings to work in collaborative teams.

If you answered "I do not have scheduled meetings to work in collaborative teams" in question 15, please go to question 18.

16. As you think about your collaborative team(s). please indicate how much you agree or disagree with the following statements:

Statement	Strongly disagree	Disagree	Agree	Strongly agree
a.Members of my team trust each other.				
b.It's ok to discuss feelings and worries with other members of my team.				
c.Members of my team respect those colleagues who are experts in their craft.				
d. Members of my team respect those colleagues who are experts in their craft.				
e. My principal or assistant principal(s) fosters a trusting environment for discussing data in teams.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use.* Unpublished Instrument				

17. How often do you and your collaborative team(s) do the following?

Statement	Never	Sometimes	Often	A lot
a.We approach an issue by looking at data				
b.We discuss our preconceived beliefs about an issue.				
c. We identify questions that we will seek to answer using data				
d. We explore data by looking for patterns and trends.				
e. We draw conclusions based on data.				
f. We identify additional data to offer a clearer picture of the issue.				
g. We use data to make links between instruction and student outcomes.				
h. When we consider changes in practice, we predict possible student outcomes.				
i.We revisit prediction made in previous meetings.				
j. We identify actionable solutions based on our conclusions.				
Items adapted from Wayman J.C., Cho, V., & Shaw, S. (2009). *Survey of Educator Data Use.* Unpublished Instrument				

18. What else would you like to share with us about data use?

_____

_____

_____

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