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Teachers' Perspectives on Using Data for Instructional Decision Making

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This is to certify that the doctoral study by

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Walden University
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Abstract

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by

Rosemarie Schoepp

Specialist Diploma, Queens College, 1998

MS, Queens College, 1996

BA, Queens College, 1992

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Data-driven decision making (DDDM) is an important teaching practice that can positively influence student achievement by using assessment data to make instructional decisions. The problem is that teachers do not always use this practice. Teachers' perspectives of DDDM can influence their data use practices. This basic qualitative study was conducted to explore teachers' perspectives on using data for instructional decision making. The conceptual framework used was the theory of planned behavior. Participants included 11 teachers from a district in the Northeastern United States, with at least 3 years of teaching experience. Semistructured interviews were used to answer the research question about teachers' perspectives on using data for instructional decision making. Data analysis included open, axial, and selective coding using thematic analysis. Four themes were identified from the data analysis: (a) administrative support structures influence teachers' DDDM practices, (b) a variety of data and data literacy skills are necessary for DDDM, (c) teachers express negative attitudes toward schoolwide DDDM expectations and data use for teacher evaluations, and (d) teachers express confidence regarding the benefits of DDDM and in their ability to use data for instructional decision making. Recommendations for future research included the efficacy of schools' DDDM professional development, investigating the accessibility of non-academic data for teachers, and comparing teachers' confidence with their DDDM efficacy. The results of this study may contribute to positive social change by providing information that school leaders and teachers might use to improve DDDM and student academic achievement.

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Dedication

This dissertation is dedicated to my family. To my husband Neil, for his unwavering support of my dreams. He is the best cheerleader who never complained when my writing came before anything else and always made sure I was healthy and ready to write. To my daughter Molly, who always had the most inspiring words when I needed them and was happy for even the smallest progress I made. To my son Allen, who never said, “no” to a late-night run to the store for my writing snacks and always said, “I love you” upon delivery. To my mom JoAnne, who taught me perseverance and who always let me know how proud she is of my accomplishments. And, to my dad Allen, who told me that I wouldn’t have to pay back any money that I had ever borrowed from him until I was out of school, and who laughed every time I enrolled in a new degree program. Dad passed while I was finishing this, my final degree, but I promise you Dad - I will pay you when we meet again.

Finally, I dedicate this dissertation to every person who has ever felt discouraged or judged because of their ADHD. Remember, it may take us longer, we may have to work harder than others, we may have 200 folders on our computer with the same name and 300 open files at any one time, and we may have spent way too much on the highlighters and organizers that keep going missing, but this dissertation is proof that it CAN be done. NEVER give up.

Acknowledgments

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Chapter 1: Introduction to the Study

When the No Child Left Behind (NCLB) Act was passed, the U.S. government began linking schools' federal funding with a mandate to collect and report student achievement data from annual standardized tests to identify achievement gaps between disaggregated subgroups of students (Dodman et al., 2021). A critical component of the NCLB Act was the Adequate Yearly Progress component, a quantitative measure of a school's or district's performance on state-mandated assessments. In 2015, the NCLB Act was reauthorized as the Every Student Succeeds Act (ESSA), which continued the focus on quantitative student data (Dodman et al., 2021). The ESSA requires student assessment data to be collected and used to identify and respond to disparate student achievement outcomes. School leaders are required to implement annual testing in reading and mathematics, adopt standards in reading, mathematics, and science, and focus standards on college and career readiness skills (Roegman et al., 2021). Also, student assessment data are required to be collected and used for instructional decision making to improve student achievement outcomes.

Teachers in the United States are expected to use assessment data to make instructional decisions for their students (Dodman et al., 2021). Examining teachers' data-driven decision making (DDDM) practices is critical to ensuring adequate academic achievement for all students (Filderman et al., 2019; Filderman & Toste, 2018; Gesel et al., 2021). Teachers' use of data for instructional decision making can have positive effects on student achievement. This practice can be beneficial because decisions are based on the needs of individual students (Grabarek & Kallemeyn, 2020; Keuning et al.,

2019; Kippers et al., 2018). Using data to make decisions about individual student achievement goals can be effective in narrowing achievement gaps (Ginja & Chen, 2020; Grabarek & Kallemeyn, 2020). Evidence of improved student achievement may include higher proficiency and academic scores (Filderman & Toste, 2018; Gesel et al., 2021; Kippers et al., 2018). As shown, DDDM is an effective and beneficial practice that teachers can use to improve student achievement.

Students in middle school face specific challenges that may benefit from DDDM. Middle school curriculum can be difficult because students are required to read and understand complex texts to acquire new knowledge. Text becomes increasingly difficult across content areas making it difficult for some students to meet academic standards (Shelton et al., 2020). Scales et al. (2020) explained that drops in motivation, engagement, and performance are common when students transition to middle school. Middle school teachers need appropriate resources and strategies to meet the needs of students at risk of falling behind during this critical period. The use of DDDM to identify achievement may be beneficial for middle schoolers' academic success (Powell et al., 2021).

Although DDDM is an important and required practice, teachers do not always use data for decision making (Lockton et al., 2020; Miller-Bains et al., 2022; Wilcox et al., 2021). There are several reasons that teachers may not practice DDDM. Teachers may feel uncomfortable and need training to use student data for instructional decisions in the classroom (O'Brien et al., 2019). Also, without support from school leadership, teachers may use data for DDDM ineffectively (Abrams et al., 2021; Lasater et al., 2020;

Raffe & Loughland, 2021; Schildkamp et al., 2019). Teachers often benefit from schoolwide DDDM support such as data teams and a positive culture regarding data collaboration (Abrams et al., 2021; Lasater et al., 2020; Raffe & Loughland, 2021; Schildkamp et al., 2019; Young et al., 2018). This support can be beneficial, but more in-depth information about the use of data for instructional decision making is needed (Espin et al., 2021; Raffe & Loughland, 2021).

Effective DDDM is also essential to ensure that students receive high-quality instruction (Schildkamp et al., 2019). A better understanding of the reasons teachers practice instructional DDDM may benefit teachers and students. Exploring the perspectives of teachers regarding data use may provide information that could be used to increase and improve instructional DDDM. The results of this study may contribute to positive social change by providing educational leaders with information that can be used to support teachers' DDDM. The results may be used to design appropriate professional development for teachers. It may also provide information to teachers who want to improve their use of data for instructional decision making.

In this chapter, I provide background information from the research literature related to the problem of teachers' lack of data use for instructional decision making. I define the major ideas and scope of this study including the conceptual framework, nature of the study, assumptions, delimitations, and significance of this study. I conclude this chapter with a summary of key points.

Background

Classroom teachers can use assessment data to determine students' understanding of instruction. For effective DDDM, teachers should base their instructional decisions on the needs of each student (Khan & Vasu, 2018; Prenger & Schildkamp, 2018). Instruction can be differentiated in many ways based on student needs. For instance, teachers can use a variety of instructional techniques, they can group students with similar learning abilities, and they can provide various learning materials to differentiate lessons for students (Puzio et al., 2020; van Geel et al., 2019). This differentiation of instruction can be effective in narrowing achievement gaps (Ginja & Chen, 2020). Differentiated instruction is a beneficial tool that teachers can use when making instructional decisions for their students.

Although DDDM can be an effective practice, there are many reasons that teachers may not use data for instructional decision making. Using data for instructional decision making can be difficult for teachers (Andersen, 2020; Kippers et al., 2018; Schildkamp, 2019). A significant barrier to instructional DDDM is a lack of teacher data literacy (Beck et al., 2020; Chen, 2019; Goffin et al., 2022; Pitsia et al., 2021; Reynolds & Park, 2021). New and experienced teachers alike are not always prepared for the data interpretation required of contemporary educators (Dunn et al., 2020; Hamilton et al., 2022; Humphries et al., 2023). Teachers may not be familiar with all types of student assessment data or know how to access available data (Beck et al., 2020; Chen, 2019). When teachers lack data literacy skills, they may be unable to understand or consider student assessment data to make necessary instructional decisions for their students.

The practice of DDDM begins with data interpretation, but to be useful, teachers need to be able to use the resulting information. Transforming assessment data into changes for instructional decisions is a key component of the DDDM practice (Kippers et al., 2018). Teachers may find this step more challenging than interpreting student data (Lembke et al., 2018). Transformation of data should be a consistent practice (Kippers et al., 2018; Little et al., 2019). Without consistent transformation of data, teachers' DDDM practices may be less effective.

The effectiveness of DDDM may be improved when school administrators create and manage positive data use policies in each school. School administrators play a critical role in the development of beneficial schoolwide policies for DDDM (Schildkamp et al., 2019; Young et al., 2018). By fostering a positive data-focused collaboration and culture, school administrators may be able to improve teachers' use of data for instructional decision making, fostering more effective DDDM (Young et al., 2018). Although teachers are responsible for instructional decision making, school administrators can improve data use practices by providing and supporting DDDM policies throughout their schools.

One strategy used by school administrators to emphasize the importance of data use for improved instruction is the creation of data teams (Schildkamp et al., 2019). Data teams are collaborative groups of teachers and school administrators who interpret and use data for improved student achievement. These collaborative groups can foster peer support for teachers as they acquire and develop data use skills (Wardrip & Herman, 2018). Data team activities that promote interactive collaboration through group

discussions and group analysis influence positive DDDM outcomes (Schildkamp et al., 2019). The success of a DDDM program can be improved through collaborative and interactive data teams created at the school leadership level.

Teachers' perspectives and attitudes can also influence the success of DDDM (Kippers et al., 2018; O'Brien et al., 2019; Ruble et al., 2018; Van Gasse et al., 2020; Wardrip & Herman, 2018). Teachers who have a more positive perspective of DDDM are more likely to use it for classroom instructional decisions (Kippers et al., 2018). This should have positive effects on student achievement (O'Brien et al., 2019; Van Gasse et al., 2020). Thus, promoting positive perspectives on data use for instructional decision making increases data use and can improve student achievement.

Despite the known benefits of DDDM, there is a gap in practice regarding the use of data for making decisions about classroom instruction (Chen, 2019; Datnow et al., 2021). Nationally, although DDDM has been identified as an important and required practice to improve academic achievement (Grabarek & Kallemeyn, 2020), according to the National Center for Education Statistics (NCES), scores in eighth grade mathematics and reading have decreased in recent years (NCES, 2019). U. S. teachers do not always choose to practice DDDM (Lockton et al., 2020). Regionally, according to internal records from 2020 and 2021, the research district under study showed a lack of data use for instructional decision making.

District data from 2020 and 2021 showed that teachers from a district in the Northeastern United States were not meeting the district's DDDM goals. Student achievement scores from 2021 were below the state average and did not meet the

minimum standards set by the state. Although policies were in place to implement differentiated instruction based on the specific needs of the students, 2021 district reports showed that middle school student proficiency had not improved in the previous 3 years. These reports also indicated that students scored lower on their middle school proficiency assessments than on their elementary school assessments indicating lower academic achievement during the middle grades. A study to investigate the perspectives of teachers' DDDM for instructional decision making was needed to better understand the district's lack of improvement in student achievement.

Problem Statement

The problem I addressed in this study was that teachers are not using student data for DDDM. Nationally, although DDDM has been identified as an important and required practice to improve academic achievement (Grabarek & Kallemeyn, 2020), scores in eighth grade mathematics and reading have decreased in recent years (NCES, 2019). Teachers in the United States do not always choose to practice DDDM (Lockton et al., 2020). Locally, teachers from a district in the Northeastern United States were not meeting the district's goal of using data for instructional decision making. A 2018 audit of the research district revealed that student achievement scores had not shown improvement and were below the state's averages. Individual school action plans from the research district in 2018 and 2021 indicated that schools were at the emerging stage in the use of data to plan for students' individual needs and the priorities for improvement included data collection, data evaluation, and data usage. To meet the need for increased academic achievement, district leaders created a strategic framework. Strategies listed in

the district's strategic framework included the use of data for more student-centered learning.

Using data to make decisions can have a positive effect on student achievement. DDDM is beneficial in instructional decision making (Filderman & Toste, 2018; Keuning et al., 2019). Without appropriate DDDM, students do not benefit from consistent, high-quality instructional decision making based on individual student data (Schildkamp et al., 2019). Middle school students face specific academic challenges (Shelton et al., 2020) and may benefit from targeted instruction based on their individual needs (Powell et al., 2021). Also, a 2018 audit of the research district indicated that teachers did not always use the intended DDDM practices. This report also indicated that data use was not effectively implemented. I explored the gap in practice regarding the lack of DDDM practices as supported by the literature and demonstrated at the research district's level.

Purpose of the Study

The purpose of this basic qualitative study was to explore teachers' perspectives on using data for instructional decision making. Researchers identified teachers' perspectives as factors that can affect the use of data for instructional DDDM (Prenger & Schildkamp, 2018). More in-depth information about teachers' perspectives was needed regarding data for instructional decision making (Espin et al., 2021; Raffe & Loughland, 2021). I explored the perspectives of teachers to better understand the gap in practice pertaining to the use of DDDM in the research district and to add to existing research literature.

Research Question

What are teachers' perspectives on using data for instructional decision making?

Conceptual Framework

I explored the perspectives of teachers' use of data for instructional decision making using the theory of planned behavior (TPB; Ajzen, 1985). Behavior is a specific, observable response to a targeted goal in a given situation (Ajzen, 2019). A person's behavior is shaped by their beliefs. These beliefs inform the constructs of the TPB which are attitude, subjective norms, and perceived behavioral control (Ajzen, 1985, 1991). The first construct, attitude, can be influenced by two determinants: experiential attitudes and instrumental attitudes (Fishbein & Ajzen, 2011). Experiential attitudes include a person's emotions and feelings toward a particular behavior while instrumental attitudes represent the perceived utility and importance of a particular behavior and are based on the perceived cost, benefit, or consequences of performing a behavior (Ajzen, 1991; Canova & Manganelli, 2020; Fishbein & Ajzen, 2011).

The second construct, subjective norms, has two determinants: descriptive norms and injunctive norms. Descriptive norms are based on a person's perceptions of the typical behaviors of other people (Cialdini et al., 1990). Injunctive norms are based on the perceived or explicit expectations of other people (Ajzen, 2012). The third construct is perceived behavioral control. Perceived behavioral control includes two determinants: self-efficacy and controllability. Self-efficacy is the degree to which an individual believes they are capable of performing a behavior and controllability represents a

person's perceived control over their performance of a behavior (Fishbein & Ajzen, 2011).

Attitude, subjective norms, and perceived behavioral control have been used to study teachers' behaviors. Researchers have used the TPB as a framework for quantitative studies in education to examine teachers' use of data. Prenger and Schildkamp (2018) conducted a quantitative study to identify the psychological factors that contribute to teachers' data use. They found that the constructs of the TPB were related to instructional DDDM and that those factors were predictive of teachers' behaviors. Ruble et al. (2018) used the TPB in their mixed-methods study to identify factors associated with teachers' data collection behavior. They found that attitude, subjective norms, and perceived behavior control were correlated to teachers' intentions to collect data.

Qualitative research studies have included the TPB framework to investigate the beliefs and perspectives of teachers. Data collection strategies to determine teachers' DDDM practices may include focus groups and interviews. Schelling and Rubenstein (2021) used focus groups in their study. Using the TPB, they investigated teachers' attitudes, subjective norms, and perceived behavioral control regarding DDDM practices. Results indicated that teachers had limited time for data collection and interpretation, and they often relied on standardized tests and their own intuition for instructional decision making.

The TPB is useful in studying behavior using beliefs and perspectives (Ajzen, 1985, 1991). Because of its relevance to answering the research question, I used the TPB

to examine teachers' perspectives on using data for instructional decision making. For this study, I designed interview questions using the basic constructs of the TPB which are attitude, subjective norms, and perceived behavioral control, and a review of relevant literature. I also applied the constructs of the theory when identifying open codes, axial codes, and emerging themes during data analysis to answer the research question. I discuss the conceptual framework in greater detail in Chapter 2.

Nature of the Study

I used a basic qualitative research design for this study. Researchers use a qualitative research approach to generate meaning and an understanding of phenomena (Burkholder et al., 2016; Merriam & Tisdell, 2016). Qualitative researchers use descriptions to interpret experiences and understand a phenomenon (Ravitch & Carl, 2016). Qualitative researchers also use the viewpoints and descriptions of participants to gain insight into events (Babbie, 2017). In this study, I used interviews to explore teachers' perspectives on using data for instructional decision making.

According to Patton (2015), researchers use purposeful sampling to select participants with specific knowledge who can provide detailed information on a topic. For this study, I selected participants using purposeful sampling and snowball sampling. Participant selection was based on years of teaching experience. Participants for this study included 11 middle school teachers from a district in the Northeastern United States with at least 3 years of teaching experience.

Interviewing is a method of data collection used in qualitative research that provides information from participants who are knowledgeable of the phenomenon being

studied (Rubin & Rubin, 2012). Researchers use interviews because they produce detailed and individualized data about specific phenomena (Ravitch & Carl, 2016). I used semistructured interviews for this study. Participants were interviewed via Zoom, a video conferencing platform. All Zoom interviews were uploaded and transcribed using TranscribeMe. All transcriptions represented a full verbatim translation of the recordings and were saved to a Microsoft word document. To check the accuracy of the transcripts, I listened to each interview while reading the written version.

Thematic analysis was used to analyze the qualitative data collected in this study. I used Braun and Clarke's (2006) six phases of thematic analysis to examine the data. In Phase 1, I became familiar with the data by reading and listening to the transcripts several times. Phase 2 included initial coding using both deductive and inductive strategies. I analyzed data deductively by using a priori codes that I developed ahead of time based on the conceptual framework, the interview questions, and a review of relevant literature (see Saldaña, 2016). The a priori codes were *experiential attitudes, instrumental attitudes, descriptive norms, injunctive norms, self-efficacy, controllability, types of assessments, school support: mentoring, school support: data teams and meetings, school support: commitment to DDDM, school support: access to student data, school support: access to data other than academic, school support: professional development, collaboration of teachers, teachers' data literacy,* and *teachers' transformation of data*. I created a codebook to keep track of all codes, each code's description/definition, data source, and example excerpt.

Next, I began inductive analysis using open coding. I read the data line by line to identify additional codes in the data. Each new open code identified was entered into the codebook with each code's description/definition, data source, and example excerpt. After open coding was completed, I began axial coding. Axial coding is the process of creating categories by grouping similar codes (Merriam & Tisdell, 2016). I continued analyzing and combining categories.

In Phase 3, I used selective coding to identify themes. I analyzed the themes to collapse similar ones and expanded on any that needed to be separated. I also ensured that themes were supported by the data and verified that they were clear. I continued to analyze and combine categories and themes multiple times until I reached saturation. Saturation is the point at which continued data analysis does not add new themes or patterns but may reinforce analyses already made (Burkholder et al., 2016). If saturation had not been reached, additional participants would have been recruited (see Ravitch & Carl, 2016). In Phase 4, I reviewed the themes. I examined the transcripts to determine if the themes accurately reflected the data. I also created an audit trail, using an Excel spreadsheet, to ensure that there were clear pathways from codes to categories to themes.

In Phase 5, I defined and named the final themes. I evaluated the relevance of each theme in answering the research question. I also made note of any inconsistent or discrepant findings and referred to these during analysis and interpretation of data for study findings. Discrepant cases are data that may not align with study findings or be supported by emerging themes (Merriam, 2009). During the data analysis of my research, I did not find evidence that would contradict the findings, so further analysis was not

required. I also utilized member checking by emailing a two-page summary of study findings to participants to review and contact me with questions or comments. In Phase 6, I created the final report from the data obtained during data collection to answer the research question regarding teachers' perspectives on using data for instructional decision making.

Definitions

For clarity, I define several pertinent terms used in this study. The terms and their definitions are as follows:

Controllability: A determinant of the TPB construct perceived behavioral control. Controllability refers to a person's perceived control over their performance of a particular behavior (Ajzen, 2002; Fishbein & Ajzen, 2011).

Data literacy: One's ability to plan, collect, analyze, and interpret individual student assessment data (Kippers et al., 2018).

Data-driven decision making: The practice of using student assessment data to make educational decisions (Vanlommel et al., 2018).

Descriptive norms: A determinant of the TPB construct subjective norms. Descriptive norms include a person's perceptions about the ways other people perform a particular behavior, what others believe about that behavior, and the prevalence of the behavior in others' lives (Fishbein & Ajzen, 2011).

Differentiation: The altering of instructional methods to meet the learning needs of individual students. Differentiation can include grouping students with similar learning

abilities and providing a variety of learning materials for students to use while learning (Puzio et al., 2020).

Experiential attitudes: A determinant of the TPB construct attitude. Experiential attitudes include emotions and feelings toward a particular behavior (Ajzen, 1991; Canova & Manganelli, 2020; Fishbein & Ajzen, 2011).

Injunctive Norms: A determinant of the TPB construct subjective norms. Injunctive norms include a person's beliefs about the expectations of other people, perceived or explicit (Ajzen, 2002; Fishbein & Ajzen, 2011).

Instrumental attitudes: A determinant of the TPB construct attitude. Instrumental attitudes represent the perceived utility and importance of a particular behavior and are based on the perceived cost, benefit, or consequences of performing a behavior (Ajzen, 1991; Canova & Manganelli, 2020; Fishbein & Ajzen, 2011).

Perspectives: Views and beliefs regarding knowledge, ability, and skills that affect decisions about teaching (Fu & Sibert, 2017).

Self-Efficacy: A determinant of the TPB construct perceived behavioral control. Self-efficacy is the degree to which individuals believe they are capable of performing a behavior (Ajzen, 1991; Fishbein & Ajzen, 2011).

Assumptions

A researcher should be able to recognize both the obvious and hidden assumptions regarding data collection and analysis (Armstrong & Kepler, 2018). Consideration of assumptions is necessary for the study's validity, trustworthiness, and accuracy of research conclusions (Ravitch & Carl, 2016). For this study assumptions

were made that could have affected the transferability of the findings. I assumed that all participants answered the interview questions truthfully and honestly. I assumed that teachers were familiar with the DDDM policies and requirements of their school. I assumed that participants understood the interview questions. If they did not understand the interview questions, I assumed participants would ask for clarity during the interview process. These assumptions were necessary to ensure the authenticity and accuracy of the research findings (see Rubin & Rubin, 2012).

Scope and Delimitations

Through the study, I explored teachers' perspectives on using data for instructional DDDM. Participants for this study included 11 middle school teachers with at least 3 years of teaching experience. I chose to focus on middle school teachers because they had demonstrated the most difficulty in implementing DDDM in the research district and because researchers noted the benefits of DDDM for the unique learning challenges that middle schoolers may face (see Powell et al., 2021). I excluded teachers with less than 3 years of experience since they may not have had a thorough understanding of DDDM policies used in the school system.

I examined the teachers' perspectives on using data for instructional DDDM using the TPB framework. I considered exploring teachers' perspectives on instructional DDDM using the sensemaking theory. Sensemaking theory can help explain how and why educators construct meaning and implement school policies (Weick, 1988). Researchers use sensemaking theory to identify the way teachers construct meaning of their work and experiences (Chen et al., 2021). However, I chose not to use sensemaking

theory because teachers do not always report their DDDM practices accurately (see Lockton et al., 2020; Vanlommel & Schildkamp, 2019). Instead of using sensemaking theory, I used the TPB framework which is centered on the constructs known to contribute to the performance of a behavior.

Transferability in qualitative research can be challenging because the scope of findings is specific to the participants and environment in the study (Shenton, 2004). Studies that include data rich with thorough descriptions and abundant contextual information may be useful to the reader in determining if findings are representative of their own context. To improve the transferability of findings from this study to other geographic areas, I aimed to provide detailed information. This included a description of the sample of participants, sample size, the inclusion criteria, sampling strategy, interview procedures, and detailed data.

Limitations

Limitations of this study included researcher bias which can affect data analysis (see Ravitch & Carl, 2016). I kept notes regarding my feelings and thoughts throughout the data collection process to mitigate the limitation of researcher bias. I also consistently acknowledged my feelings, opinions, and prejudices when recording and analyzing data and kept a reflective journal. I provided a level of confidentiality for this study by using pseudonyms, removing all identifying data, and using codes throughout the transcription and coding processes to address limitations regarding privacy. I continued to interview participants until saturation was reached to minimize limitations that may have occurred as a result of the small sample size in this study.

Since the beginning of the Covid-19 pandemic, many school districts changed the rules regarding visitors to their buildings. I conducted interviews using a virtual meeting platform called Zoom for this study. Researchers have explained that the use of the Zoom platform can be disruptive in interviewing subjects because of distractions affecting the flow of conversation due to connectivity lapses (Oliffe et al., 2021). This could have been a limitation of this study. However, Gray et al. (2020) found that the benefits of Zoom included convenience, ease of use, ease of accessibility, and reduced travel requirements to participate in research studies. Researchers can collect rich conversations necessary for qualitative research while reducing travel limitations by using the Zoom platform.

Significance

There is a gap in practice regarding the use of data for instructional decision making (Chen, 2019; Datnow et al., 2021). DDDM is the practice of using assessment data to make instructional decisions in a way that meets the needs of individual students (Prenger & Schildkamp, 2018) and to determine students' academic understanding (Khan & Vasu, 2018). The use of DDDM can help improve student achievement (Filderman & Toste, 2018; Gesel et al., 2021; Keuning et al., 2019; Kippers et al., 2018). This study is significant because it adds to the existing knowledge regarding the perspectives of teachers to use DDDM.

Teachers' perspectives may provide information about how attitude, social pressures, and control considerations influence teachers' use of data for decision making (Ajzen, 1991). School administrators can use this information to support classroom teachers in using DDDM to meet students' learning needs. This information may be

useful to the teachers and school leaders in the research district and other districts with similar challenges. A deeper understanding of teachers' perspectives regarding DDDM may also address the lack of literature regarding DDDM practices (Datnow & Park, 2018; Jimerson et al., 2021).

As educational leaders and policymakers continue to require the use of DDDM, understanding teachers' perspectives on using data for instructional decision making is important in supporting teachers. Teachers may use the findings from this study to help make decisions regarding DDDM practices that will meet the needs of their students and increase student achievement. Study findings may also be used to inform the development of DDDM training for teachers.

Summary

In Chapter 1, I identified the problem of teachers from a district in the Northeastern United States who were not meeting the district's goal of using data for instructional decision making. I highlighted the effectiveness of DDDM and the significance of teachers' perspectives. I provided background information from the research literature related to the problem of teachers' lack of DDDM. I explained the purpose of this study and I defined the major ideas and scope of this study including the conceptual framework, nature of the study, assumptions, delimitations, and significance.

In Chapter 2, I describe the search strategies used for the literature review. I explain the TPB framework with the relevant constructs and research that demonstrate support for this study. I also provide a literature review of relevant and current studies on

DDDM including factors that affect teachers' instructional decision making practices and their perspectives on using data for instructional decision making.

Chapter 2: Literature Review

The problem I addressed in this study was that teachers were not using student data for DDDM. DDDM is beneficial in instructional decision making (Filderman & Toste, 2018; Gesel et al., 2021; Keuning et al., 2019). Without appropriate DDDM, students do not benefit from consistent, high-quality instruction based on individual student assessment data (Raffe & Loughland, 2021). Teachers' perspectives influence their ability to use data for instructional decision making (Prenger & Schildkamp, 2018; Schelling & Rubenstein, 2021). However, more in-depth information was needed from teachers about their perspectives on using data for instructional decision making (Raffe & Loughland, 2021). The purpose of this basic qualitative study was to explore teachers' perspectives on using data for instructional decision making.

Chapter 2 includes a review of the literature regarding DDDM. First, I describe the search strategies used to conduct the literature review, and then I explain the TPB framework used for this study. I identify research related to the constructs of the TPB and analyze current studies within the past 5 years that have used the TPB as a framework for educational research. Next, I discuss current research regarding factors that influence the use of DDDM, including school administrators and culture, teachers' understanding and interpretive skills pertaining to data, differentiated instruction, and teachers' perspectives. I end this chapter with a summary and conclusion section.

Literature Search Strategy

I used the Walden University Library to access the Education Resources Information Center (ERIC), Google Scholar, Education Source, ProQuest Central, SAGE

Journal, and Taylor and Francis Online Sources. For this literature review, I began the search for scholarly, peer-reviewed research using general terms such as *data-driven decision making* and *data-based decision making* in the Google Scholar database. I focused on current literature, within the past 5 years, to identify trends in DDDM research. As I discovered more specific terms within the DDDM topic such as *data-based instructional practices, educational leadership and support, teacher training, teachers' perspectives,* and *differentiated instruction*, I began using the Education Source, ProQuest Central, SAGE Journal, and Taylor and Francis Online Sources search engines. I also searched these for relevant conceptual theories and seminal works related to those frameworks. Search terms specific to the TPB included the *theory of planned behavior, attitude, subjective norm, perceived behavioral control, behavioral beliefs, normative beliefs, control beliefs, experiential attitude, instrumental attitude, descriptive norms, injunctive norms, self-efficacy, and controllability.* I used the databases in the Walden University Library to further my literature search until I reached a point of saturation. After examining multiple theories, I determined that my study would be best supported by using the TPB to explore teachers' perspectives on the use of instructional DDDM.

Conceptual Framework

I used the TPB as the conceptual framework for this study of teachers' perspectives on their use of data for instructional decision making. In the following section, I explain the origins of the theory, the constructs, and how the theory supports the study.

Theory of Planned Behavior

The TPB is a conceptual framework for understanding factors that influence a subject's intention to perform a specific behavior. The TPB helps understand the link between belief and behavior (Ajzen, 1991; Lee et al., 2010). According to the TPB (Ajzen, 1991), an individual's behavior may best be predicted by their intention to perform the behavior. Intention is determined by three constructs: attitude toward the behavior, subjective norm, and perceived behavioral control (Ajzen, 1991). These constructs are informed by beliefs, which were defined by Ajzen (1991) as "salient information relevant to a behavior" (p. 189). These beliefs include behavioral beliefs, which determine attitudes toward the behavior; normative beliefs, which lead to subjective norms; and control beliefs, which determine perceived behavioral control (Ajzen, 1991).

The first construct in the TPB is attitude. Attitude can be determined using an individual's beliefs or their personal preferences about performing an action (Ajzen, 1991). Investigating attitudes should include both experiential attitudes and instrumental attitudes (Ajzen, 1991; Canova & Manganelli, 2020; Fishbein & Ajzen, 2011). Experiential attitudes are based on emotions and feelings toward a particular behavior (Ajzen, 1991). Both positive and negative feelings can be influential on a person's beliefs and resulting behavior (Ajzen, 2019). Instrumental attitudes represent the perceived utility and importance of a particular behavior and are based on the perceived cost, benefit, or consequences of performing a behavior (Ajzen, 1991; Canova & Manganelli, 2020; Fishbein & Ajzen, 2011). In education studies, teachers' attitudes were found to

influence their use of data for DDDM (Prenger & Schildkamp, 2018). Teachers' actions are related to their attitudes (Sharma et al., 2018).

The second construct of the TPB is subjective norms. Subjective norms represent one's normative beliefs about what is typical regarding a behavior and include the expectations, approval, and typical practices of respected others (Ajzen, 1985). Subjective norms can be perceived as social pressure and may influence an individual's actions (Ajzen, 1991). When an individual is motivated to align with a person or group of people, they may be more likely to conform to subjective norms regarding a behavior. Subjective norms may include one's perceptions regarding other people's behaviors or nonbehaviors as well as perceptions about other people's thoughts and expectations.

Subjective norms are based on two determinants: descriptive norms and injunctive norms (Fishbein & Ajzen, 2011). Descriptive norms include a person's perceptions about the ways other people perform a particular behavior, what others believe about that behavior, and the prevalence of the behavior in others' lives (Fishbein & Ajzen, 2011). Beliefs and actions of other people can influence a person's behavior (Ajzen & Fishbein, 1975). Injunctive norms include the expectations of other people. A person's beliefs about the expectations of other people, perceived or explicit, can influence that person's behavior (Ajzen, 2002; Fishbein & Ajzen, 2011). Teachers' DDDM behavior may be influenced by their peers' and school administrators' expectations (Schelling & Rubenstein, 2021). Therefore, teachers' DDDM practices may be influenced by their peers' practices and the perceived expectations of school administrators.

The third construct, perceived behavioral control, reflects an individual's beliefs about their ability to influence or perform a behavior (Ajzen, 1991). These control beliefs account for an individual's thoughts about resources and obstacles that affect their behavioral performance and the likelihood of successful behavioral performance (Ajzen, 1991). Perceived behavioral control includes two determinants: self-efficacy and controllability (Ajzen, 2002). Self-efficacy is the degree to which individuals believe they can perform a behavior (Ajzen, 1991; Fishbein & Ajzen, 2011). Controllability refers to a person's perceived control over their performance of a particular behavior (Ajzen, 2002; Fishbein & Ajzen, 2011). Teachers who perceive they can use data for decision making and are in control of their DDDM practices are more likely to practice DDDM (Dunn et al., 2020).

The TPB may be useful in studying behavior using a person's beliefs (Ajzen, 1985, 1991; Fishbein & Ajzen, 2011). Ajzen (1985) described a behavior as a goal that relies on many factors for achievement. Ajzen (2019) revised the definition to represent the specific, observable response to a targeted goal in each situation. Behavior is driven by an individual's intentions (Ajzen, 1991). Behavioral intention is like a plan of action to perform a behavior (Ajzen, 1985) and is an indication of an individual's readiness to perform (Ajzen, 2019). Behavioral intentions are the immediate antecedents of behavior. According to the TPB, teachers' behavior and their intention to perform a behavior are based on their beliefs regarding attitude, subjective norms, and perceived behavioral control. The constructs of the TPB were found to be related to instructional DDDM and were factors predictive of teachers' behavior (Prenger & Schildkamp, 2018).

TPB in Education Research

The TPB can provide a multidimensional context of teachers' decision making using the three determinants that influence that decision making: attitude, subjective norms, and perceived behavioral control. Research studies including the use of the TPB have been used to gain a better understanding of teachers' decision making (Farrugia & Trakulphadetkrai, 2020; Hellmich et al., 2019; Li & Cheung, 2021; Spektor-Levy & Yifrach, 2019; Voet & De Wever, 2020). Decisions about instruction may be affected by a teacher's beliefs (Farrugia & Trakulphadetkrai, 2020; Hellmich et al., 2019; Li & Cheung, 2021). Teachers' decision-making perspectives may be examined using the TPB (Voet & De Wever, 2020). When teachers hold positive beliefs about DDDM, they are more likely to use data in their decision making.

Education researchers have also used the TPB to predict teachers' behaviors and practices. The TPB can be used as a predictor of behavior (Knauder & Koschmieder, 2019; Opoku et al., 2021). Teachers' beliefs, then, may predict their future practice. Teachers who have positive beliefs about specific instructional strategies have a better outcome compared to those who have negative beliefs (Bonner et al., 2018) Therefore, the TPB can be used to predict teachers' practices (Alkhayat et al., 2020; Hugh et al., 2022; Opoku et al., 2021; Sadaf & Gezer, 2020; York & Hite, 2021). The TPB may be a useful tool for the study of teachers' beliefs in predicting their future practices.

TPB in DDDM Research

Investigators have used the TPB as a research framework to examine teachers' DDDM behavior. Ruble et al. (2018) used the TPB to investigate the data collection

intentions and behaviors of 44 teachers. Using a mixed-methods approach, they concluded that attitude, subjective norms, and perceived behavioral control were all factors that influenced teachers' intentions and data-collection practices. However, in their study, the authors did not disaggregate the constructs of the TPB so that experiential attitude, instrumental attitude, descriptive norms, and injunctive norms were examined independently. Researchers that investigate the constructs of the TPB independently may provide insight into specific areas that influence teachers' DDDM intentions and data collections practices.

Prenger and Schildkamp (2018) conducted a study of 300 primary school teachers using the TPB to determine the factors that influenced the use of data for instructional decision making. Using surveys, the researchers found attitudes and controllability to be significant predictors of teachers' use of DDDM. However, self-efficacy and subjective norms were not significant factors. The authors suggested that future research include qualitative investigations to potentially provide more details regarding the TPB constructs and teachers' DDDM practices. My study used a qualitative approach to add to existing literature and to better understand the factors that may influence teachers' DDDM practices.

According to the TPB, attitude, subjective norms, and perceived behavioral control help to explain one's behavior (Ajzen, 1991). The TPB related to my study because it helped to explain the link between teachers' perspectives and teachers' use of data for instructional decision making (see Ajzen, 1991). The research question

pertaining to teachers' perspectives on using data for instructional decision making was supported by the TPB.

Literature Review Related to Key Concepts and Variables

History of DDDM

When the NCLB Act was passed, the U.S. government began linking schools' federal funding with a mandate to collect and report on student achievement data from annual standardized tests to identify achievement gaps between disaggregated subgroups of students (Dodman et al., 2021). A critical component of the NCLB Act was the Adequate Yearly Progress component, a quantitative measure of a school's or district's performance on state-mandated assessments. Aggregated and disaggregated student yearly progress data must be reported based on demographic characteristics, such as race/ethnicity and socioeconomic status. In 2015, the NCLB Act was reauthorized as the ESSA, which continued the focus on quantitative student data (Dodman et al., 2021). The ESSA requires student assessment data to be collected and used to identify and respond to disparate student achievement outcomes. School leaders are also required to implement annual testing in reading and mathematics, adopt standards in reading, mathematics, and science, and focus standards on college and career readiness skills (Roegman et al., 2021).

As a result of the NCLB Act and ESSA, teachers in the United States are expected to use assessment data to make instructional decisions for their students (Dodman et al., 2021). Examining teachers' DDDM practices is critical to ensuring adequate academic achievement for all students (Filderman et al., 2019; Filderman & Toste, 2018; Gesel et

al., 2021). Focusing research on teachers' use of data to inform instructional decisions is a critical element for improved student achievement (Espin et al., 2021). This may also help to ensure that student achievement continues to improve.

DDDM Improves Student Achievement

DDDM has been found to positively affect student achievement in literacy, writing, and mathematics skills (Bruhn et al., 2020; McMaster et al., 2020; Parker et al., 2018; Regan et al., 2022; van der Scheer & Visscher, 2018). Using student data to make instructional decisions was shown to reinforce skills deficits for typical students (Parker et al., 2018; Regan et al., 2022) and for students who did not respond to typical instructional methods (Jung et al., 2018; van der Scheer & Visscher, 2018). The use of assessment data to tailor instruction is beneficial for students in need of differentiated instruction (Karst et al., 2022). Students of all abilities, and in varied subjects, may benefit from the use of data for instructional decision making.

Factors That Affect DDDM

There are many factors that may affect teachers' use of data for instructional decision making. These include administrative support, teacher collaboration, data teams, professional development, and data literacy. These factors may influence the effectiveness of teachers' DDDM practices and affect student achievement. Current research highlights the importance of the factors that affect teachers' DDDM practices.

Administrative Support

Effectiveness of teachers' instructional decision making improves when school administrators establish DDDM policies and practices (Abrams et al., 2021; Bruhn et al.,

2020; Schildkamp et al., 2019). Effective DDDM was shown to improve with supportive school-wide policies (Botvin et al., 2023; Lasater et al., 2020; Raffe & Loughland, 2021). School administrators play a critical role in the development of a beneficial DDDM school culture (Young et al., 2018). This culture should be based on the use of data for instructional decision making and avoid using student data for teacher accountability because a heavy focus on data use for teacher evaluation negatively affects instruction and student achievement (Lasater et al., 2020; Lockton et al., 2020; Schelling & Mason, 2021; Schildkamp et al., 2019). Supportive strategies for effective DDDM include high expectations, capacity building (Abrams et al., 2021), and data-focused collaboration (Schildkamp et al., 2019; Van Gasse et al., 2020). School wide DDDM culture may influence teachers' DDDM practices. School leaders can create a positive DDDM culture to support schoolwide DDDM practices.

Collaboration

Collaboration that includes teacher interaction, discussions, and group analyses of data is a key factor that positively influences teachers' instructional decision making (Schildkamp et al., 2019; Van Gasse et al., 2020). It is important for school administrators to ensure that teachers' DDDM collaborative efforts are based on school policies (Abrams et al., 2021; Lasater et al., 2020; Raffe & Loughland, 2021; Schildkamp et al., 2019). If collaborative discussions regarding DDDM are not based on appropriate and successful policies and practices, teachers' instructional decisions may be less effective in improving student achievement.

One strategy used by school administrators is to emphasize the importance of collaborative data use for improved instruction is the creation of data teams. Data teams are collaborative groups of teachers and school leaders who meet to interpret and use data for improved student achievement (Schildkamp et al., 2019). Data teams discuss and interpret data to identify the distinction between student ability and student achievement (Datnow & Park, 2018), which has been shown to improve instruction and student outcomes (Schelling & Mason, 2021; Wardrip & Herman, 2018). Collaboration may assist inexperienced teachers. Collaboration with experienced data team members was shown to positively support less experienced teachers who were acquiring and developing effective data use skills (Wardrip & Herman, 2018) and helped to improve DDDM practices and academic achievement scores (Schelling & Mason, 2021). Data teams may have a positive effect on teachers' DDDM practices.

Data team interactions have been found to provide beneficial opportunities for teachers to discuss DDDM strategies (Frank et al., 2020; Schildkamp et al., 2019; Wherfel et al., 2022). Teachers were shown to be more comfortable using data for instructional decision making when they had the opportunity to discuss DDDM with other teachers (Frank et al., 2020; Schildkamp et al., 2019; Wherfel et al., 2022). Both new teachers and teachers with varied experiences benefited from DDDM discussions (Frank et al., 2020; Wherfel et al., 2022). To be effective, data team interactions should be continuous throughout teachers' data skills learning (Schildkamp et al., 2019; Wardrip & Herman, 2018). Providing opportunities for teachers to collaborate and discuss data

can be beneficial for new and experienced teachers. Administrative support can include practices like data teams so that teachers may collaborate and assist each other in DDDM.

Training and Professional Development

Professional development has also been shown to improve teachers' use of data for instructional decision making (Beck et al., 2020; Jiang et al., 2020; Mages, 2018; McMaster et al., 2020; O'Brien et al., 2019; Oslund et al., 2021; van den Bosch et al., 2019). DDDM may be difficult for teachers. O'Brien et al. (2019) found that teachers trained in DDDM felt more comfortable using student data for instructional decisions than those without training. Teachers who participated in professional learning activities found it easier to interpret and use data for improved student achievement (Jiang et al., 2020; McMaster et al., 2020; Oslund et al., 2021). Teachers may benefit from professional development opportunities regarding the use of data for instructional decision making.

Understanding Data

Using data for instructional decision making can also be challenging for teachers. Lack of teacher data literacy was found to be a significant barrier to DDDM (Beck et al., 2020; Goffin et al., 2022; Pitsia et al., 2021; Reynolds & Park, 2021; Schildkamp, 2019). New and preservice teachers are often not prepared to interpret data for instructional decisions (Hamilton et al., 2022; Reynolds & Park, 2021). Experienced teachers were found to have inconsistent data analysis skills which are needed to read and analyze data (Beck et al., 2020; Humphries et al., 2023). Chen (2019) found that even with training in

DDDM, teachers misunderstood the importance of using data to improve student achievement.

A variety of data sources is needed for effective instructional decision making (Datnow & Park, 2018; Mandinach & Schildkamp, 2021; Schelling & Mason, 2021; Wilcox et al., 2021). This can be time-consuming. When teachers do not have adequate time, they often limit their data sources to standardized testing scores (Schelling & Mason, 2021). When school administrators place great emphasis on time consuming standardized test scores, the results may negatively affect teachers' DDDM practices (Datnow & Park, 2018; Schelling & Mason, 2021). Researchers found that teachers often prioritized student deficits and remediation instruction when they focused on limited assessment data (Datnow & Park, 2018; Mandinach & Schildkamp, 2021; Wilcox et al., 2021). This may have a negative impact on instructional practices.

Student data available for teachers can come from a variety of resources, each of which requires different knowledge and methods of interpretation. Common sources of student data come from summative and formative assessments. Summative assessments are measurements that demonstrate the sum of a child's knowledge in a particular area (Singh et al., 2022) and are often used for end-of-year grades, promotions, and to evaluate student learning after an instructional program (Chandio et al., 2021; Kamara & Dadhabai, 2022). State-level tests are one type of summative assessment. Researchers have cautioned against the overuse of state-level assessments and found that when teachers focused on high-stakes assessment data, they often labeled students using assessment-specific labels (i.e., struggling, proficient, and advanced) instead of using

these data to understand student learning and achievement (Datnow & Park, 2018; Dodman et al., 2019). Formative assessments provide evidence of learning and that are collected and used as feedback regarding academic progress (Chandio et al., 2021; Gezer et al., 2021; Lee et al., 2020; Offerdahl et al., 2018; Shepard et al., 2018; Visscher, 2021; Widiastuti et al., 2020). This type of feedback was found to positively affect DDDM practices and student achievement (Lee et al., 2020). Though data from formative assessments may not be formal or measured against state standards they are considered important because they are used within the learning process and are useful in instructional decision making (Widiastuti et al., 2020), especially for low-performing students (Gezer et al., 2021). However, formative assessments are often overlooked in overall descriptions of DDDM (Visscher, 2021).

It is important for teachers to combine assessment data with a variety of alternative student information. For example, cultural data may be considered to avoid inequitable uses of data (Andersen, 2020; Mandinach et al., 2019; Vanlommel & Schildkamp, 2019). This equity-based approach to DDDM was found to assist teachers in avoiding biased thinking in decision making (Bertrand & Marsh, 2021; Gummer, 2021). Other useful data included students' educational backgrounds, neighborhoods, and family culture (Beck & Nunnaley, 2021). Researchers found that regardless of data types, emphasizing student strengths rather than deficits had a positive effect on instructional DDDM (Park, 2018).

Transformation of Data

Once teachers locate and understand student data, it is necessary to transform these data for use in instructional decision making. Transforming assessment data into changes for instructional decisions was found to be a key component of the DDDM process (Lembke et al., 2018; Wilcox et al., 2021). This was found to be a difficult practice (Lembke et al., 2018; Wilcox et al., 2021). Many teachers struggled to transform data into usable information for instructional decision making (Lembke et al., 2018). Transformation was found to be more difficult than understanding student data (Chen, 2019). Preservice teachers were shown to have less knowledge and experience in using data for instructional DDDM (Hamilton et al., 2022). Experience and consistent practice were shown to positively affect teachers' data transform DDDM (Kippers et al., 2018; Little et al., 2019).

There are several factors that may influence the ways that teachers use data for instructional decision making. These factors included administrative support, teacher collaboration, data teams, training, professional development, and data literacy. These factors may influence the effectiveness of teachers' DDDM practices and affect student achievement.

DDDM Used to Differentiate Instruction

Differentiated instruction was used to align student assessment data with instructional decision making to create learning activities designed to address the diverse needs of students (Karst et al., 2022). It is a teaching method used to adapt instruction to meet students' needs such as differing learning readiness skills and educational

preferences (Chua et al., 2021; Khan & Vasu, 2018; Rajeh Alsalhi et al., 2021; Smale-Jacobse et al., 2019; Smets & Struyven, 2018). The elements needed for effective differentiated instruction were found to include previous assessment data, instructional decision making, and the implementation of instructional plans based on needed strategies for each student (Herner-Patnode & Lee, 2021). Goddard and Kim (2018) suggested that to make informed instructional decisions, teachers should use assessments to gather information about student knowledge and determine the next steps to assure progress for each student. Karst et al. (2022) found that teachers should adapt instructional strategies and learning environments to meet the needs of all learners within a single classroom.

Student assessment data can be used in many ways to make instructional decisions (Puzio et al., 2020; Regan et al., 2022). The most important part of differentiated instruction is that teachers' instructional modifications were found to be based on the specific, identified needs of individual students (Smets, 2019; van Geel et al., 2019). Differentiation strategies were shown to include changing instructional methods, grouping students with similar learning abilities, and providing a variety of learning materials for students to use while learning (Puzio et al., 2020). Researchers also emphasized the importance of student evaluation after differentiated instruction to assess students' progress toward their goals (Regan et al., 2022; Smale-Jacobse et al., 2019). This provided additional data to use in a feedback loop for decision making (Wilcox et al., 2021).

Teachers were found to have difficulty implementing differentiated instruction (Faber et al., 2018; Ginja & Chen, 2020; Magableh & Abdullah, 2020; Melese, 2019). However, differentiated instruction is an effective teaching strategy that was shown to improve student outcomes and narrow achievement gaps (Chua et al., 2021; Ginja & Chen, 2020; Smets & Struyven, 2018). When teachers use data to differentiate instruction effectively, they are providing an effective teaching strategy for their students.

Teachers' DDDM Perspectives

Positive attitudes toward DDDM were shown to have a positive effect on student achievement (De Simone, 2020). However, teachers do not always have positive perspectives on DDDM. Teachers reported that DDDM is time-consuming and overwhelming and was shown to decrease their use of data for instructional decision making (Lockton et al., 2020; O'Brien et al., 2019; Reeves & Chiang, 2019; Walker et al., 2018).

Teachers who had positive perspectives were shown to be more likely to practice DDDM (Kippers et al., 2018; Ruble et al., 2018). However, researchers found that teachers used intuition about students' abilities more often than assessments to determine instructional needs (Andersen, 2020; Smets & Struyven, 2020; Vanlommel et al., 2018). When there is a discrepancy between teachers' intuition and student assessment data, teachers often follow their own instincts to make instructional decisions (Vanlommel et al., 2018, 2021; Wardrip & Herman, 2018). Although teachers' intuitions may influence their instructional decision making, it does not guarantee that teachers' intuition is an accurate measure of student ability. Intuition was shown to be ineffective in predicting

student abilities (Kippers et al., 2018; Sneyers et al., 2020). Teachers' use of intuitive data was found to be based on nonacademic measures of ability such as student participation and engagement levels (Vanlommel & Schildkamp, 2019).

Teachers' perspectives were identified as factors that may affect the use of data for instructional decision making (Prenger & Schildkamp, 2018). Perspectives toward data and their resulting relevance to instruction also affect effective data use for instructional decision making (Kippers et al., 2018; O'Brien et al., 2019; Ruble et al., 2018; Van Gasse et al., 2020; Wardrip & Herman, 2018). Teachers do not always use data for instructional decision making (Chen, 2019; Datnow et al., 2021; Lockton et al., 2020). More in-depth information about teachers' perspectives is needed regarding data for instructional decision making (Espin et al., 2021; Raffe & Loughland, 2021). This study investigated the perspectives of teachers on using data for instructional decision making.

Summary and Conclusions

According to the TPB, human action is guided by one's beliefs regarding attitude, subjective norms, and perceived behavioral control (Ajzen, 1985, 1991). The constructs of the TPB include attitude, subjective norms, and perceived behavioral control. Attitude represents beliefs about likely consequences of a behavior. Attitude has two determinants: experiential attitude and instrumental attitude. Subjective norms represent beliefs about the expectations of respected others regarding a behavior. The two determinants of subjective norms are descriptive norms and injunctive norms. Perceived behavioral control represents beliefs about one's ability to influence a behavior or

outcome. Perceived behavioral control consists of self-efficacy and controllability. The constructs of the TPB, attitudes, subjective norms, and perceived behavioral control, have been shown to influence one's intention to act and are predictive of behavior (Ajzen, 1985, 1991). The TPB relates to this study because it helped to explain the way teachers' attitudes, subjective norms, and perceived behavior control, regarding data use for instructional decision making, influenced their DDDM behaviors (see Ajzen, 1991).

Instructional DDDM is an effective practice, (Filderman & Toste, 2018; Keuning et al., 2019; Kippers et al., 2018). Effective DDDM practice includes teachers' use of assessment data to align their instructional decisions in a way that meets the needs of each student (Prenger & Schildkamp, 2018) and the determination of students' understanding of instruction (Khan & Vasu, 2018). Decisions may then result in differentiated instruction which can be effective in narrowing achievement gaps (Ginja & Chen, 2020). Assessment data can be used in many ways to differentiate instruction (Puzio et al., 2020; van Geel et al., 2019).

A significant barrier to instructional decision making is a lack of teacher data literacy (Beck et al., 2020; Chen, 2019; Goffin et al., 2022; Pitsia et al., 2021; Reynolds & Park, 2021). Using data for instructional decision making may be difficult for teachers (Andersen, 2020; Beck et al., 2020; Chen, 2019; Kippers et al., 2018; Reynolds & Park, 2021). Transforming assessment data into changes for instructional decisions is a key component of the DDDM process (Chen, 2019) and is a challenge for teachers (Kippers et al., 2018; Lembke et al., 2018; Little et al., 2019).

School leadership may affect instructional decision making (Schildkamp et al., 2019; Young et al., 2018). One strategy used by school administrators to emphasize the importance of data use for improved instruction is the creation of data teams (Schildkamp et al., 2019; Wardrip & Herman, 2018). Supportive school-wide policies also affect DDDM (Abrams et al., 2021; Lasater et al., 2020; Lockton et al., 2020; Raffe & Loughland, 2021; Schelling & Mason, 2021; Schildkamp et al., 2019; Young et al., 2018). Collaboration may play a significant role in DDDM effectiveness (Frank et al., 2020; Schildkamp et al., 2019; Van Gasse et al., 2020; Wherfel et al., 2022). Another method to increase DDDM effectiveness is through professional development (Jiang et al., 2020; McMaster et al., 2020; O'Brien et al., 2019). Teachers do not always use data effectively (Lockton et al., 2020; Wilcox et al., 2021). The reasons listed in the literature regarding teachers' lack of effective data use for instructional decision making included a lack of the skills needed to interpret and use data (Beck et al., 2020; Chen, 2019; De Simone, 2020; Reynolds & Park, 2021; Schildkamp, 2019).

Perspectives toward data also affect the effectiveness of DDDM (Kippers et al., 2018; O'Brien et al., 2019; Ruble et al., 2018; Van Gasse et al., 2020; Wardrip & Herman, 2018). Teachers from a district in the Northeastern United States were not meeting their district's goal of using data for instructional decision making according to 2020 data. Student achievement scores from 2021 were below the state average and had not shown improvement. The purpose of this basic qualitative study was to address the gap in practice by investigating the perspectives of teachers on using data for instructional decision making.

In Chapter 2, I explained the TPB framework and the constructs of the theory. I identified research related to the constructs of the TPB and analyzed current studies that used the TPB as a framework for DDDM research. I provided a review of the current literature regarding the use of data for instructional DDDM. I discussed research regarding factors that influence the use of data for DDDM including school administrators and culture, teachers' understanding and interpretive skills pertaining to data, and teachers' perspectives.

In Chapter 3, I will describe the methodology and research design used in this study. I will include the study design choice, the role of the researcher, study participants, instrumentation, and the data collection plan including analysis and coding procedures. I also describe considerations of research trustworthiness and ethics concerns.

Chapter 3: Research Method

The purpose of this basic qualitative study was to explore teachers' perspectives on using data for instructional decision making. Many factors affect teachers' DDDM. Teachers' perspectives about data use may influence the ways that their instructional decisions are made (Prenger & Schildkamp, 2018). There is a gap in practice involving teachers' use of data for instructional decision making in a district in the Northeastern United States. I explored the perspectives of teachers to better understand the use of DDDM in the research district and add to the existing literature.

In Chapter 3, I explain the reasons for my research design choice and why other designs were not chosen. I describe my role as the researcher, participant selection procedures, instrumentation, recruitment processes, participation procedures, data collection, and analysis methods. I also explain the ways trustworthiness and ethical procedures were managed for this study. I conclude this chapter with a summary.

Research Design and Rationale

The research question for this study was *What are teachers' perspectives on using data for instructional decision making?* Researchers identified teachers' perspectives as factors that can affect the use of data for instructional DDDM (Prenger & Schildkamp, 2018). More in-depth information about teachers' perspectives was needed regarding data for instructional decision making (Espin et al., 2021; Raffe & Loughland, 2021). I explored the perspectives of teachers to better understand the gap in practice pertaining to the use of DDDM in the research district and to add to existing research literature.

Researchers use qualitative designs to interpret experiences, generate meaning, and better understand phenomena (Burkholder et al., 2016; Merriam & Tisdell, 2016; Ravitch & Carl, 2016). Qualitative researchers use the perspectives, viewpoints, and descriptions of participants to gain these insights (Babbie, 2017). I used a basic qualitative approach for this study. I used this method to obtain participants' perspectives, viewpoints, and descriptions to generate a better understanding of teachers' use of data for instructional decision making.

I considered using a quantitative research design for this study. However, quantitative designs are used to quantify data or calculate relationships among variables. (see Creswell, 2012) Because I chose to explore and interpret participants' experiences, a qualitative approach was a more appropriate choice. I considered a qualitative design using a phenomenological approach. However, this approach is typically used to explore the lived experiences of a specific phenomenon (see Creswell, 2012). Since I was not investigating the lived experiences of study participants, the phenomenological approach was not chosen. I also considered using a case study approach. Case studies are appropriate for studying individual cases or a few similar cases (Kruth, 2015). Since participants were recruited from different middle schools in the district, their experiences may not have been similar. Case studies also explore and collect multiple sources of data (Kruth, 2015). Since this study did not investigate a single case and only participant interviews were collected as data, I did not choose the case study approach.

Role of the Researcher

The role of the researcher is a central consideration in qualitative research (Ravitch & Carl, 2016). Positionality refers to the researcher's role, social location, identity, and relationship to the context and setting of the research (Ravitch & Carl, 2016). Researchers need to be reflexive, or open and transparent, about the potential for bias that may exist because of their background (Burkholder et al., 2016). My role as the researcher of this study was to collect, organize, and analyze data. As the researcher, I recognized that my experiences may have biased the study results. I have been an elementary school classroom teacher for fourth and sixth graders as well as a physical education teacher for kindergarten through sixth grade. I have also served as a preschool teacher, director, and owner of an early childhood education center. I do not have teaching or director experience in the research school district. I did not have any personal, professional, or supervisory relationships with staff in the research district. To minimize my own biases, I kept notes regarding my feelings and thoughts throughout the data collection process and referred to them during the coding and analysis process. I consistently acknowledged my feelings, opinions, and prejudices and transcribed participants' words verbatim. I also prepared before each interview to be open to data and evidence that I may not have agreed with or expected to discover.

This study took place in a school district in a northeastern state. I did not have teaching or supervisory experience in this school district. I did not have any personal or professional relationships with staff in this district. Teachers did not receive incentives to participate in this study.

Methodology

Participant Selection

Participants for this study included 11 middle school teachers from the Northeastern United States with at least 3 years of teaching experience. I selected participants using purposeful sampling and snowball sampling. I used a purposeful sampling strategy to invite teachers to participate and discuss their experiences regarding the use of data for instructional decision making. Purposeful sampling includes participant selection based on specific criteria or purpose (Patton, 2015). The criteria for participant selection in this study included teaching in a middle school in a district in the Northeastern United States and having at least 3 years of teaching experience. I also used the snowball sampling method, which involves asking participants to recommend additional teachers who meet the study criteria.

The number of participants in qualitative research is frequently small because the goal is to develop an in-depth understanding of participants' perspectives using a collection of rich, detailed data (Merriam & Tisdell, 2016). What is important in qualitative research is to reach the point of saturation which is the point at which continued data analysis does not add new themes or patterns and may become redundant (Burkholder et al., 2016). I continued interviewing until saturation was reached. I interviewed 11 teachers using a semistructured interview format to collect rich, detailed data to reach saturation.

I sent a letter to the superintendent of the study district to obtain permission to conduct this study. Once approval was granted, I contacted the relevant school principals

from the research district to obtain the email addresses of teachers that met the study criteria so I could recruit potential participants. I emailed an invitation to potential participants. For snowball sampling, I asked participants to share the invitation with teachers from the research district that also met the study criteria.

Once participants responded to the invitation with consent to participate, I emailed them an interview confirmation form. The interview confirmation form included a list of available interview appointment options for participants to select the most convenient date and time for them.

Instrumentation

For this basic qualitative study, I conducted semistructured interviews through the Zoom platform using the interview protocol guide (see Appendix A) to collect data. I conducted a semistructured interview with each participant to explore their perspectives on using data for instructional decision making. The primary data were collected through audio recordings of each participant's interview responses. Recording interviews can enhance the accuracy of responses (see Rubin & Rubin, 2012).

A semistructured interview includes open-ended questions that allow participants to respond and explain their experiences (Merriam & Tisdell, 2016). I designed the semistructured interview questions (see Appendix B) to encourage detailed and thorough responses. I developed the interview questions using the literature review and the constructs of the TBP. Interview Questions 1, 2, 3, 4, 5, 6, 8, 9, 10, and 11 were developed to align with the constructs of the TBP framework. Questions 7, 9, and 11 were based on the information gleaned from the literature review (see Table 1).

Table 1

Alignment of Interview Questions with Research Question and Conceptual Framework

Interview question	Alignment
1-What feeling(s) do you associate with DDDM?	TPB construct: Attitude/ experiential attitude
2-Describe the importance of using data for instructional decision making	TPB construct: Attitude/ instrumental attitude
3-What are the benefits and drawbacks of DDDM?	TPB construct: Attitude/ instrumental attitude
4-How would you characterize the beliefs of other teachers in the school regarding DDDM?	TPB construct: Subjective norms/ descriptive norm
5-How do other teachers in the school use data for instructional decision making? Please give examples.	TPB construct: Subjective norms/ descriptive norm
6-Describe the expectations of school leadership regarding your DDDM practices.	TPB construct: Subjective norms/ injunctive norm
7-In what ways are you supported by school leadership to use data for instructional decision making?	Literature review
8-How would you describe your ability to use data to make instructional decisions?	TPB construct: Perceived behavioral control/self-efficacy
9-How do you choose the data that you will use for DDDM?	TPB construct: Perceived behavioral control/controllability and literature review
10-Is there flexibility in the school's DDDM policy so that you can use data for instructional decision making in ways that may differ from your peers? Please give examples of this.	TPB construct: Perceived behavioral control/controllability
11-What do you believe you need in order to improve your use of data for instructional decision making?	TPB construct: Perceived behavioral control/controllability and literature review

To address content validity, two nonparticipating middle school teachers reviewed the interview questions for clarity and to ensure that the questions could be answered using rich, thick details that described perspectives. Content validity was also addressed by using rich data to describe findings (see Creswell, 2012). I asked the interview questions in the same order for each participant to ensure consistency. I asked follow-up questions where necessary to prompt more thorough responses and to keep the conversations flowing.

Procedures for Recruitment, Participation, and Data Collection

I recruited potential participants from the middle schools in the study district. After approval from the Walden University Institutional Review Board (IRB), I sent a letter to the superintendent of the study district to obtain permission to conduct this research study. Once approval was granted, I obtained the email addresses of teachers who met the study criteria from the middle schools' principals and emailed each an invitation to participate. The invitation to participate described the focus of the study for teachers to review before deciding to participate. I gave the potential participants five days to decide whether they would participate in the study before sending out a follow-up email. I sent all teachers who consented a confirmation form that included a list of available interview appointments. Any conflicts or overlapping time requests were addressed at least 2 days in advance of an interview.

Data collection for this basic qualitative study was conducted using semistructured interviews. Interviews were conducted at a mutually agreed-upon time. I sent a confirmation email to all participants 2 days before their scheduled interview. On

the day of the interview, I tested all audio recording devices before meeting with each participant virtually from my private office. Before recording, I thanked all participants and reminded them that I would be recording the audio of the interview via the Zoom platform. I also reminded each participant that transcription of all interviews would be produced via the TranscribeMe service. I discussed confidentiality, the participant's right not to answer any interview questions, and the option to withdraw from the study at any time without repercussions. I answered any questions participants had and announced when the recording was to begin. I conducted the interviews as scheduled using specific questions from the participant interview questions form (see Appendix B). Each participant was interviewed for approximately 30 to 45 minutes. After the interview, I let each participant know that the interview was complete, and I reminded them about confidentiality policies and procedures. I reminded the participants that a two-page summary of study findings would be emailed to them after the data analysis, and that they would have 48 hours to review it and contact me with questions or comments. Finally, I thanked them for participating.

Data Analysis Plan

I recorded all interviews using the Zoom platform and uploaded each to my personal computer. I sent each recording to TranscribeMe for transcription. All transcriptions represented a full verbatim translation of each interview including the interviewer and interviewee. Once an audio recording was transcribed, I saved it to a Microsoft word document on my personal, password-protected computer.

I used Braun and Clarke's (2006) six-phase framework for the analysis of data: familiarizing oneself with the data, generating initial codes, searching for themes, reviewing the themes, defining, and naming the themes, and writing the report. There were no unexpected conditions encountered during the data analysis process. For the first phase of the analysis process, I prepared and organized the data. I compared the written transcripts with the audio recordings to ensure accuracy. The organized data was copied into a new Excel spreadsheet. I listened to the transcripts several times to ensure accuracy and become familiar with the data.

In Phase 2, I began the process of generating initial codes. The coding process included both deductive and inductive strategies. Bingham and Witkowsky (2021) suggested that integrating deductive and inductive strategies can help a researcher analyze data while maintaining a focus on the research questions, allowing themes to be identified, and a connection to be made with the conceptual framework. This approach may also strengthen the trustworthiness of a study (Bingham & Witkowsky, 2021).

In Phase 3, I used selective coding to identify themes. I reviewed the themes and groups several times to ensure that each category belonged in the group and that the theme name was an accurate reflection of the categories. I also ensured that themes were supported by the data and verified that they were clear. I continued to analyze and combine categories and themes multiple times until I reached saturation. Saturation is the point at which continued data analysis does not add new themes or patterns but may

reinforce analyses already made (Burkholder et al., 2016). If saturation had not been reached, additional participants would have been recruited (see Ravitch & Carl, 2016).

In Phase 4, I reviewed the themes to ensure alignment with the codes and categories. I continued to review the transcripts to ensure the themes were aligned with the data. I reviewed the pathways of codes to categories to themes. I then considered and concluded that the themes answered the research question. I sent the results of my data analysis to a peer debriefer for feedback. I chose to work with a peer debriefer to assist in a complete analysis of my data and help determine if my interpretations and findings were reasonable. The peer debriefer was a professor of statistics and familiar with research data analyses, but unconnected to me or this study. Using a peer debriefer can also enhance the reliability and validity of this study (see Ravitch & Carl, 2021). Through reflective dialogue, the peer debriefer assisted in the clarification and alignment of the study's themes and determined the findings to be logical and grounded in the study data.

In Phase 5, I defined and named the final themes. I evaluated the relevance of each theme in answering the research question. During the data analysis of my research, there were no discrepant findings. I did not find evidence that would contradict the findings, so further analysis was not required. In Phase 6, I created the final report from the data obtained during data collection to answer the research question regarding teachers' perspectives on using data for instructional decision making.

Trustworthiness

As described by Ravitch and Carl (2016), the field of qualitative research and the methods for defining validity in the field are relatively new. They further suggested that

(a) credibility, (b) transferability, (c) dependability, and (d) confirmability should be considered when attempting to enhance the trustworthiness of qualitative research. Credibility represents the measure of confidence in research findings based on believable and appropriate collected data (Merriam & Tisdell, 2016). To address credibility, I developed a rapport with study participants to enhance the flow of rich, complete, and accurate descriptions. To establish rapport, I created a comfortable and responsive atmosphere by being calm, professional, pleasant, and forthcoming when answering participant questions during the process. I used a semistructured interview format, with follow-up questions as necessary to reach data saturation (see Burkholder et al., 2016; Ravitch & Carl, 2016; Shenton, 2004).

Transferability refers to the extent that study findings can be applied to broader contexts (Merriam & Tisdell, 2016). Thorough descriptions of contextual information and research boundaries may assist the reader in deciding if the findings are similar to their own context (Shenton, 2004). To establish transferability, I used comprehensive and detailed descriptions of the participant's experiences and quotes from interview transcripts so that readers could judge the transferability of findings (see Ravitch & Carl, 2016).

Dependability of a study represents the stability and trustworthiness of research findings (Burkholder et al., 2016). Dependability is reliant on accurate data (Creswell, 2012). I used an interview protocol guide to increase consistency in questioning. I used data saturation, analysis of discrepant findings, peer debriefing, and member checking to confirm data accuracy. There were no comments or questions from participants, so no

clarifications were needed. During the data analysis of my research, I did not find evidence that would contradict the findings, so further analysis was not required.

Once all interviews were transcribed and the data analyzed, I sent the results of my data analysis to a peer debriefer for feedback. I chose to work with a peer debriefer to assist in a complete analysis of my data and help determine if my interpretations and findings were reasonable. Using a peer debriefer can also enhance the reliability and validity of this study (see Ravitch & Carl, 2021). The peer debriefer was a professor of statistics and familiar with research data analysis, but unconnected to me or this study. Through reflective dialogue, the peer debriefer assisted in the clarification and alignment of the study's themes and determined the findings to be logical and grounded in the study data. After final data analysis, I emailed a two-page summary of study findings to participants to review and contact me within 48 hours with questions or comments. There were no questions or comments, so no further explanation or clarification was needed.

Confirmability is the extent to which other researchers can confirm research results. Researcher bias may negatively affect confirmability (Ravitch & Carl, 2016). Confirmability may be enhanced through reflexivity (Merriam & Tisdell, 2016). To achieve confirmability for this study, I kept an audit trail and a journal to record notes regarding my feelings, thoughts, and opinions during the entire study. I also transcribed participants' words verbatim to ensure that there was no bias in transcription.

Ethical Procedures

Researchers are obligated to ensure that they do not cause harm and have the well-being of participants in mind throughout their research (Ravitch & Carl, 2016). Several methods were used to address ethical concerns during this study. I obtained the approval of the Walden University IRB before any research began. Once approval from the IRB was granted, I obtained permission to conduct the study from the school district. Then, I emailed the invitations to participate which included the purpose of the study, procedures for data collection, confidentiality procedures, and time requirements for the interview. I gave the potential participants five days to reply before sending out a follow-up email.

To minimize risk to the participants, before each interview, I reviewed the participants' rights and confidentiality procedures. I reminded each participant that they may stop at any time during the interview process, they may take breaks when needed, and they may drop out of the study at any time without any consequences or penalties. Before each interview, I reminded participants of the purpose of the study.

Confidentiality is also an ethical concern. According to Ravitch and Carl (2016), the most effective form of confidentiality is anonymity which is achieved when the identity of research participants is not able to be obtained. To protect the privacy of participants in this study, I used pseudonyms for all data, I left out or removed any identifying data from collected information, and I assigned codes that did not reflect any identifying indicators (Ravitch & Carl, 2016). I stored all collected data on my personal, password-protected computer. No one had access to the data other than me. All files and

data related to this research will be removed and destroyed after five years from the completion of the study.

Summary

In Chapter 3, I outlined the research methods that were used for this study. I provided an introduction describing the purpose of the study to explore teachers' perspectives on using data for instructional decision making. I explained the reasons for choosing a basic qualitative design. I described my role as the researcher which included collecting, organizing, and analyzing data related to the research question. The methodology section provided the selection criteria and sampling procedures for purposeful and snowball sampling as well as study instrumentation, recruitment processes, participation procedures, and data collection and analysis methods. I also explained the ways trustworthiness and ethical procedures were managed for this study. In Chapter 4, I provide an overview of data collection including setting, data collection and analysis methods, evidence of trustworthiness, results, and a chapter summary.

Chapter 4: Results

The purpose of this basic qualitative study was to explore teachers' perspectives on using data for instructional decision making. I recruited potential participants from the middle schools in the study district. Once approval for the study was granted by the superintendent, I obtained the email addresses of teachers who met the study criteria from the middle school principals, and I emailed each teacher an invitation to participate. I sent a confirmation form to all teachers who consented, which included a list of available interview appointments. Each interview was conducted via the Zoom platform and recordings were transcribed via TranscribeMe. I applied a priori, open, axial, and selective codes to the transcribed data to identify themes to answer the research question. In Chapter 4, I present the study results. The chapter also includes discussion of the study's setting, participant demographics, data collection and analysis methods, and evidence of trustworthiness for this basic qualitative study. The chapter concludes with a summary of key points.

Setting

I used the Zoom platform to conduct one-on-one, semistructured interviews from my private work office. Participants for this study were 11 middle school teachers from the research district with 3 or more years of experience. I assigned an alphanumeric code to each participant: P1 through P11. There were no personal or organizational conditions that affected the gathering of data or the analysis of the data. All 11 interviews were conducted using the Zoom platform and audio recordings of the interviews were transcribed via TranscribeMe.

Demographics

I conducted this study with 11 middle school teachers from the research district. All 11 participants were responsible for using data for instructional decision making for their students in English, math, science, and learning support. Participants' years of teaching experience ranged from 3 to 22 years. There were nine female teachers and two male teachers. I assigned each participant an alphanumeric code, P1 through P11.

Data Collection

I recruited potential participants from the middle schools in the study district. After obtaining approval from the Walden University IRB (approval no. 10-10-22-647864), I sent a letter to the superintendent of the study district to obtain permission to conduct this research study. Once approval was granted, I obtained the email addresses of teachers who met the study criteria from the middle school principals, and I emailed each teacher an invitation to participate. The invitation described the focus of the study for teachers to review before deciding to participate. I sent all teachers who consented a confirmation form that included a list of available interview appointments.

To collect data for this basic qualitative study I conducted semistructured interviews with all 11 participants. Interviews were conducted at a mutually agreed-upon time. On the day of the interview, I tested all audio recording devices before meeting with each participant virtually from my private office. At the beginning of each interview, I thanked the participants and reminded them that I would be recording the audio of the interview via the Zoom platform. I also reminded each participant that a transcription of the interview would be produced via the TranscribeMe service. I

discussed confidentiality, the participant's right not to answer any interview questions, and the option to withdraw from the study at any time without repercussions. I conducted the interviews as scheduled using the interview protocol guide (see Appendix A) and the specific questions from the participant interview questions form (see Appendix B). Each participant was interviewed for approximately 30 to 45 minutes. After the interviews, I reminded the participants that a two-page summary of study findings would be emailed to them and that they would have 48 hours to review it and contact me with questions or comments.

I did not deviate from the planned data collection process described in Chapter 3, and there were no unusual circumstances during the data collection process. All collected data is stored on my personal, password-protected computer. No one has access to the data other than me. All files and data related to this research will be removed and destroyed after 5 years from the completion of the study.

Data Analysis

Interview Analysis

I used Braun and Clarke's (2006) six-phase framework to analyze the data collected in this study. These phases include familiarizing oneself with the data, generating initial codes, searching for themes, reviewing the themes, defining and naming the themes, and writing the report. There were no unexpected conditions encountered during the data analysis process.

Phase 1: Familiarizing Myself with the Data

For Phase 1 of the analysis process, I prepared and organized the data. I compared the written transcripts with the audio recordings to ensure accuracy. I organized the transcripts based on the date of each interview and copied each transcript into a separate Excel spreadsheet so that each interview question and participant's answer were in a single column. I changed the interview questions to a red font to help distinguish them from participant responses. After each interview, I listened to the recordings several times and noted thoughts and feelings in my reflective journal. I listened to the recordings again while reading the transcribed data to make sure the transcriptions were accurate. I then read the transcripts twice to become familiar with the data.

Phase 2: Generating Codes

Data analysis for this study consisted of both deductive and inductive reasoning strategies. Bingham and Witkowsky (2021) suggested that integrating deductive and inductive strategies can help a researcher analyze data while maintaining a focus on the research questions, allowing themes to be identified, and a connection to be made with the conceptual framework. This approach may also strengthen the trustworthiness of a study (Bingham & Witkowsky, 2021).

I analyzed the data deductively using a priori codes that I developed ahead of time based on the conceptual framework, the interview questions, and literature review (see Saldaña, 2016). The a priori codes were experiential attitudes, instrumental attitudes, descriptive norms, injunctive norms, self-efficacy, controllability, types of assessments, school support: mentoring, school support: data teams and meetings, school support:

commitment to DDDM, school support: access to student data, school support: access to data other than academic, school support: professional development, collaboration of teachers, teachers' data literacy, and teachers' transformation of data.

To analyze the data, I read each transcript and selected excerpts that represented each a priori code. These excerpts were manually copied into a new, adjacent column in the spreadsheet. I continued this process until I had read all the interview transcripts. I then reviewed the transcripts a second time to ensure that no excerpts were missed and that each selected excerpt represented the chosen a priori code. An excerpt for each a priori code was also copied into the codebook. I created the codebook in a new Excel spreadsheet. Each a priori code was listed in a separate cell, one beneath the other. As an excerpt was identified for each a priori code, it was copied into the corresponding adjacent cell. The description of each a priori code and its data source were copied into adjacent cells in the same row. Examples of excerpts representing a priori codes are in Table 2.

Table 2

Examples of A Priori Codes

Code	Participant	Excerpt
Descriptive norms	P2	"I just know as a teacher and in talking with fellow colleagues, as soon as we hear the word data, you get the, 'Oh, no, not again' feeling."
	P7	"It's hit or miss. Some teachers like it, and they're like, 'Okay, this is what we're going to work on,' and they really focus on those skills and will drive it down. Others are just like, 'No. Okay, here's where they are now. Let's just make sure they show some growth by the end of the year.' It's hit or miss."
Data literacy	P8	"If they could tell me, 'Do this,' It'll be better than, 'Here, here's your data.' Show me what it is because I can't."
	P6	"Again, I'm into the statistics part, and part of the issue with us is if we make sure that we have to have enough points of data."
Experiential attitude	P4	"I'd say my overall opinion is data-driven instruction is great. It's a positive thing."
	P10	"We need to kind of look at that and maybe re-evaluate what to do with it with the data, especially maybe at different levels or for our students."
Self-efficacy	P5	"In the experience that I've had of how many years I've been teaching, by now I feel like I can look at data. I can see, a lot of times, 'Is it matching up what I'm seeing students produce in all their work, their classes.'"
	P7	"I'm not going to say I'm going to lead a professional development, but I give myself proficient."
School support: Data meetings/Teams	P2	"Well, I feel every faculty meeting, every team meeting, every academic meeting, it is all about, 'We need to make data-driven decisions.'"
	P9	"We have a meeting twice a week with our colleagues in similar discipline courses, and we compare our data to each other."
Instrumental attitudes	P4	"Benefits, you can adjust your teaching, your methods, or techniques or get improvement from up above, from administration or the feedback they get from data to see what you could be doing differently in the classroom."
	P5	"It just gives you that information that's like, '"Are they getting it or are they not?"' And if they're not, you either need to go back and reteach or find a different way or go over it again. And, if they're getting it, then you know, '"Okay. I can move on to the next thing."'
Controllability	P3	"And because that teacher is with them more than leadership and an instructional coach, they're trusting, like you are the professional. They're trusting that you do what you need to do for the best interests of the students."
	P5	"You can organize it however you want. Use the information however you want. So, I feel like there's a lot of flexibility."

Next, I began inductive analysis using open coding. I read the transcripts line by line to identify additional codes in the data. All identified statements or phrases that represented an open code were manually copied to a new column adjacent to the interview text in the spreadsheet. I typed the corresponding open code in another new, adjacent column.

As each new open code was identified, I entered it into the codebook with the code's description/definition, data source, and example excerpt. Throughout the coding process, I documented and organized the codes in the codebook. Once all transcripts were coded, I reviewed the open code list to ensure there were no identical codes. For example, I combined "data used for teacher reflection" and "data for teacher reflection." There were 100 open codes. Examples of open codes are shown in Table 3.

Table 3

Examples of Open Codes

Code	Participant	Excerpt
Data gives decision making confidence	P11	“The benefits are that it's in your face. It's there. The data that you have and you making that decision, you sort of get that confidence”
	P9	“Numbers don't lie. They offer an empirical lens for you to interpret what's going on in your classroom.”
Not enough time to analyze data	P2	“I think one of the drawbacks to looking into data is, first of all, there's never enough time and it almost seems like there's almost never a good time for teachers to really dig deep into data.”
	P4	“I think sometimes it's lack of time.”
Teacher feels supported	P10	“Meetings more often than my prior administrator. I think the support is there or the guidance is there a little bit more."
	P2	“So, I find this school is very supportive.”
Data transformation	P4	It's just sharing out the information and implementing with it and actually doing something with it.”
	P6	“Our interpretations for the data doesn't necessarily mean what the data actually says.”
Administrative expectations are unrealistic	P6	“You're always playing on this stupid hamster wheel of trying to sit here and catch up to a non-existent, non-realistic goal.”
	P11	“However, sometimes it's a little bit unrealistic or difficult to accomplish the way they want us to.”
Differentiation	P4	“Okay, instead of teaching decimals right now, we're going to move around the curriculum and teach this skill, you know what I'm saying? Level it to see what they need, what their strengths are, and what their weaknesses are and move it around that way.”
	P9	“You have to kind of also, I think, be able to modify things and do what you need to whether it's for a higher student or even a lower special ed student.”
Varied data types	P4	“We look at different data, a variety of data. So, we make the-- okay, what are we going to look at test and vocabulary, their cumulative portfolio work, which would be for me, an interactive notebook, oral presentations on something, some project they created, and then verbally expressing it to the class, and then maybe through English language challenge throughout the year they present work they've presented to other kids in the school.”
	P8	“There are so many different ways to collect it. You can't just have it collected via one assessment type.”
Data are helpful	P3	“So, it gives you a clearer picture of whether or not the students understand.”
	P8	“Currently, I think the data that I use in my classroom is very important. And it's very helpful to my practice of education.”

Next, I used axial coding to create categories from the codes in the codebook. I did this by creating another Excel spreadsheet and entering all 16 a priori codes and 100 open codes on separate lines. Each of the 116 codes was printed and cut into individual slips of paper. These were then taped to a wall and rearranged into categories. I reviewed the codes and categories several times to ensure that each code belonged in the chosen category and that each category represented all codes assigned. From this process, I identified 15 categories. I then arranged the 116 codes on the spreadsheet so that each category was listed with the corresponding codes beneath it. Examples of the codes and categories are in Table 4.

Table 4

Examples of Codes and Categories

Category	Code	Participant	Excerpt
Data informs instructional decisions	Data used for small groups	P3	"You can also have other groups or kids that need to be stretched or enrichment. And then one group you can have that is a direct instruction."
	Differentiation	P9	"You have to kind of also, I think, be able to modify things and do what you need to whether it's for a higher student or even a lower special ed student."
Necessary DDDM skills	Data literacy	P1	"I knew how to collect it but didn't know how to use it."
	Data interpretation	P6	"Our interpretations for the data doesn't necessarily mean what the data actually says."
Administrative support for DDDM	Professional development is helpful	P2	"I always find professional development to be helpful just because that's where I feel like we're allowed to discuss things and talk about issues that we're having or how to do certain things."
	Support is provided	P5	"And they're always there to answer questions or talk about things and to help us problem solve. So, I think in that way they're really supportive."
Data teams for DDDM practices	Mentoring for less experienced teachers	P2	"We have, like, 30 new teachers. So, I feel the new teachers need to be taken under the wings of the veteran teachers."
	Data team meetings are available	P9	"We have a meeting twice a week with our colleagues in similar discipline courses, and we compare our data to each other."
Time for DDDM	Need more time for DDDM	P2	"I wish I had the time to look at my student's data and break it down and then follow it with lesson planning right afterwards so I can put that data decisions right into practice."
	Not enough time	P4	"It's a positive thing, but people just need more time to analyze data and implement it."
DDDM is helpful for student growth	Benefits	P7	"With whatever you're teaching them, are they showing growth? So that is, to me, the biggest benefit."
	Data are helpful	P8	"We do also use a lot of testing, and this is very helpful in making our decisions and in showing student growth."
Administrative expectations	Administrative expectations-Outcomes	P10	"I just think it drives too much of our instruction that we are expected to get these kids to a certain point and we can't always get them there."
	Administrative expectations are unrealistic	P11	"However, sometimes it's a little bit unrealistic or difficult to accomplish the way they want us to."

Phase 3: Searching for Themes

After completing Phase 2, I examined the categories to identify themes. I manually printed the categories on separate slips of paper and moved them by hand on a table. I moved the categories to create groups that contained similar meanings or characteristics and gave each list a theme name. I reviewed the themes and groups several times to ensure that each category belonged in the group and that the name assigned was an accurate reflection of the categories. From this analysis, I identified four themes: (a) administrative support structures influence teachers' DDDM practices, (b) a variety of data and data literacy skills are necessary for DDDM, (c) teachers express negative attitudes toward schoolwide DDDM expectations and data use for teacher evaluations, and (d) teachers express confidence regarding the benefits of DDDM and in their ability to use data for instructional decision making. Finally, I considered and concluded that the themes answered the research question.

Phase 4: Reviewing the Themes

In Phase 4, I reviewed the codes and categories to ensure they aligned with the themes. I did this using a new Excel spreadsheet to create an audit trail, making sure there were clear pathways from codes to categories to themes. I reread transcripts, codes, and categories several times to ensure clarity and ensure that there was enough data to support each decision and each theme.

I continued to review the transcripts to see if the themes were aligned with the data. I reviewed the pathways of codes to categories to themes. I then considered and concluded that the themes answered the research question. I sent the results of my data

analysis to a peer debriefer for feedback. I chose to work with a peer debriefer to assist in a complete analysis of my data and help determine if my interpretations and findings were reasonable. The peer debriefer was a professor of statistics and familiar with research data analyses, but unconnected to me or this study. Using a peer debriefer can also enhance the reliability and validity of the study (see Ravitch & Carl, 2021). Through reflective dialogue, the peer debriefer assisted in the clarification and alignment of the study's themes and determined the findings to be logical and grounded in the study data.

Phase 5: Defining and Labeling Themes

In Phase 5, I defined and named the final themes. I evaluated the relevance of each theme in answering the research question and reviewed the categories to ensure that the themes were accurate representations of the categories. During the data analysis of my research, I did not find any discrepant cases or evidence that would contradict the findings, so further analysis was not required. Discrepant cases are data that may not align with study findings or be supported by identified themes (Merriam, 2009).

The RQ for this study was *What are teachers' perspectives on using data for instructional decision making?* The themes identified to answer the RQ were (a) administrative support structures influence teachers' DDDM practices, (b) a variety of data and data literacy skills are necessary for DDDM, (c) teachers express negative attitudes toward schoolwide DDDM expectations and data use for teacher evaluations, and (d) teachers express confidence regarding the benefits of DDDM and in their ability to use data for instructional decision making. Categories and themes can be found in Table 5.

Table 5

Categories and Themes

Categories	Theme
Supports needed for teachers Administrative support for DDDM Data teams for DDDM practices Data accessibility Time for DDDM	Administrative support structures influence teachers' DDDM practices
Importance of varied data Data may be skewed Necessary DDDM skills	A variety of data and data literacy skills are necessary for DDDM
Emotions and feelings toward DDDM Administrative expectations DDDM for teacher evaluation	Teachers express negative attitudes toward schoolwide DDDM expectations and data use for teacher evaluations
DDDM is beneficial DDDM is helpful for student growth Data inform instructional decision making Feelings of confidence in DDDM ability	Teachers express confidence regarding the benefits of DDDM and in their ability to use data for instructional decision making

Phase 6: Producing the Report

The last phase was to complete a summary analysis of the themes and write about the results. Braun and Clarke (2012) emphasized that writing the report is not just about reporting results but should use the data analysis to provide a story about the data. After I completed the data analysis, I determined that the four themes identified answered the research question. I then used the four themes as the structure to write about the study data.

Results

I explored teachers' perspectives on using data for instructional decision making using a basic qualitative study with semistructured interviews. For each interview, I asked 11 interview questions (see Appendix B). The interview questions were developed using the TPB framework and literature review. Questions 1, 2, 3, 4, 5, 6, 8, 9, 10, and 11 were developed to align with the constructs of the TBP framework. Questions 7, 9, and 11 were based on the information gleaned from the literature review.

Theme 1: Administrative Support Structures Influence Teachers' DDDM Practices

The participants in this study expressed the importance of the DDDM support provided by school administrators. Participants described the support they received as positive. Opportunities to collaborate, such as in data team meetings, and a focus on training opportunities were described as positive and beneficial supports. However, participants noted that while time and access to data were important support strategies, they believed these needed to be increased. Overall, participants expressed that their DDDM practices were influenced by the administrative support provided to them in their schools. They explained that school administrators were helpful to the teachers' DDDM practices.

Support

When asked about DDDM, all participants spoke about the administrative support provided in their schools. P5 explained the support provided by administrators, "They're always there to answer questions or talk about things and to help us problem solve. So, I think in that way they're really supportive." P2 asserted, "So, I find this school is very

supportive. You can make any academic or instructional decision that if you can support it with the data, they're on board 100%." P2 continued:

> And if you're looking at data differently from other teachers and you're doing things differently than other teachers because of this, as long as you have the data and you can show it to the principal or the administrators and go, 'Hey, look, I'm doing this because of this', they're on board with it.

P10 shared:

> I just had a change of school within my district. And I would say that this administrator that I'm working for now is much more supportive. She holds meetings more often than my prior administrator. I think the support is there or the guidance is there a little bit more than before . . . They also have administrators that are strictly for Math and then strictly for ELA. And they work with us. We look at the data, as I mentioned, that are ready. They bring in people to help work with us, with making our language arts program a little bit better so I think there's just a little bit more support.

P6 explained, "They participate in every part of it, and they appreciate our feedback. They use it. When there is additional guidance given to them, they give it to us and then we implement it." P9 said, "So our leadership is very much present and very much available." Participants expressed that administration was involved and supportive of teachers' DDDM practices.

Collaborative Data Teams

Ten participants described the importance of the support provided by planned data team meetings. P8 reflected:

> They give us numerous in-services as well as numerous outside-of-class time, where we are able to work and collaborate with other teachers in our grade level, as well as the grade levels below us and the grade levels above us.

P10 reported, “Every grade level, they have teams, and every team has a planning period together and that's their opportunity to get together and look over stuff.” P6 described data team meetings:

> There's another English teacher on my team and her and I will meet twice a week to go review data. And then twice a month, we will meet with our literacy coach or the supervisor of instruction, or even the assistant principal, who will guide us through the process.

P4 explained:

> I think sometimes like an individual teacher, maybe they're overwhelmed by other things that they don't have the time to do it (DDDM). But I think as our staff, we do look at that as a group, and we try to come to solutions as a group. And I think that's easier . . . When you're on your own, you have to have that knowledge and skills, and motivation to use that data to gain something from it. If not, you're just pedaling away, just going through everyday actions. But when you have a group of people coming together, looking at the data, your individual data, or an

> individual student, and grow from that and think okay, what do we see from this? What do we need to do more? How can we help the students?

P8 indicated:

> The collaboration with my coeducators, it's phenomenal, and it's truly time that we can't work without. And I don't know if I could go back to teaching any other way just because I use all of this information to truly connect and be able to help my students succeed.

P1 shared, “We have team meetings 3 days a week and content 2 days a week before school starts.” P2 explained, “Every team meeting, every academic meeting, it is all about, ‘We need to make data-driven decisions.’” P7 shared:

> So, you'll meet as all the grade level ELA, grade level math, grade level whatever. And then you'll look at all the data and say, ‘This is where our group is.’ Because the classes are not- you'll have some higher-level teams, you'll have some lower-level teams. So, you'll discuss it there.

P11 suggested:

> It helps that I have a good team, a good sixth-grade math team because if I make a decision based off of data and I propose that to her, she might have a different opinion, then we kind of talk it through in our PLC like, ‘Okay, well, why did you think that was better?’ because, like I said, we can look at the numbers and we can make an easy decision based off of that. But these are children. They're whole humans. So, we like to kind of have those conversations.

Participants expressed that collaborative data teams were beneficial and helped to support their DDDM practices.

Professional Development

Nine out of 11 participants discussed professional development support. P7 stated, “They do have different professional development days.” P11 shared, “We get training. I mean we have in-service days in the beginning of the year.” P4 said, “We have professional developments probably almost every month.”

Some participants described the need for additional professional development opportunities. P2 said, “In-service days or professional development days are so infrequent, and they don't always line up to when we have our best data.” P2 continued, “Once in a great while, we will get data-driven decision-making. It's a topic that's often brought up in smaller meetings, not on professional development days.” P4 stated, “I would say professional developments could be better and more applicable.” P10 suggested the need for, “A little bit more PD to kind of just guide us exactly where they want us to go with it.”

Some participants explained that professional development was provided through coaches and facilitators. P2 explained that the instructional coaches, “Go in and do nonevaluative walk-throughs and provide feedback on best instructional practices. And also provide teachers with like, morning, like half an hour PDs on the trends.” P9 said:

> Then twice a month, we will meet with our literacy coach or the supervisor of instruction, or even the assistant principal, who will guide us through the process of making sure that our data is that we know how to use it.

P8 said, “Actually, they give us facilitators to help us understand what performance measures or anything like that.” Although participants expressed that professional development was beneficial for their DDDM practices, they also noted that more frequent and applicable training was needed.

Accessibility to Data

Accessibility of data for DDDM was a support discussed by participants. Some participants described adequate access. P4 stated, “I feel like in my school, because we are smaller, we have better access to it.” P9 explained, “There are multiple data sources that teachers have access to.” P11 said, “Our leadership does provide us the results of our data of our benchmarks and of our tests.” P6 explained that assessment data is provided to teachers.

Some participants explained that they were not supported with access to data. P6 said, “If you don't have the right tools to access academic, behavior, and so forth, you cannot help that student out, which you need to do.” P4 shared, “Not all teachers have that. So, there is, depending on your level, what data is accessible.” P2 described data access as limited. P2 stated, “We don't actually get to see that data on our own unless administration gives it to us.” P5 stated, “More or less, it's just kind of what we're given to use.” P5 also stated, “So it's pretty much just like what we're given. It's not like we have a lot of options.” Participants shared that accessibility to data was a crucial part of their DDDM practices. However, while some noted that access was adequate, some expressed the need for improved access to student data.

Time for Data Use

Participants identified time as a necessary support for DDDM practices. P8 said, “To obtain this data, our administration gives us extra prep time. Our administration gives us time to truly understand what the numbers mean once we get the data.” P5 reported, “They do give us a lot of time to work with the data that we're given and giving us that time to plan, plan for groups or plan, organize, look at the data.” P7 shared, “We use our platform quarterly four times a year. So, they say, ‘Okay, here's your baseline.’ And then after we do this next one, we'll probably have after the new year a day where we can pull the data.”

Lack of time to properly use data for instructional decisions was discussed by many of the participants. P2 explained that the time allocated to teachers was not sufficient for DDDM practices. P2 also expressed, “I think it's the one thing all of us teachers need, and it really is just the time to look at data.” P2 also said, “I just really wish I had the time to look at my students’ data and break it down and then follow it with lesson planning right afterwards so I can put that data decisions right into practice.” P2 then explained, “If you get the time to really break down and look at that kids’ data, you then see, ‘Oh, wait. They're six in listening, and they're a 4 in speaking.’” P6 stated, “What we need is more time.” P4 shared, “I think sometimes it's lack of time.”

Participants in this study shared that in order to implement effective DDDM practices, school leaders needed to provide appropriate support strategies. Some of these practices such as coaching, professional development, and collaborative teams were

described as positive. However, participants expressed the need for more time and increased access to data for effective DDDM.

Theme 2: A Variety of Data and Data Literacy Skills Are Necessary for DDDM

Participants in this study expressed their perspectives regarding data and data literacy. They explained that to adequately use data for DDDM, teachers needed relevant data and data literacy skills. Participants discussed the need for a variety of student data. They shared two reasons for this. First, participants shared that they did not always trust the validity of the data they received. They stated that they desired to have multiple resources that evaluated student abilities. Second, participants noted that academic data were not the only data that could be valuable in making instructional decisions. To interpret all the necessary data for DDDM, participants also explained the need for teachers to have data literacy skills. These skills included the ability to transform data into instructional decisions for their students.

Variety of Data

All participants in this study discussed the importance of collecting and using a variety of student data. Many participants explained that this was necessary because individual data points may not be an accurate representation of student ability. For example, P1 shared, "I get very frustrated because a lot of the data shows students are way lower than the grade level they're in." P2 shared, "I think a lot of teachers would agree with me that this data just paints a picture of one moment on one day." P9 stated, "The drawback on data is that data can also be skewed." P9 continued stating, "Because

the data is not an accurate reflection of their ability." Participants noted the need for multiple data sources to increase their understanding of student abilities.

Participants also explained the need for a variety of assessments because each assessment may provide different information. P2 shared:

> I chose to look at their WIDA data because the WIDA specifically measures their language development. I didn't look at their PSSA state test scores because all of them just registered below basic. Well, it doesn't tell me if they're below basic because they don't understand the concept or if it's a language problem. The WIDA test tells me, 'Oh, it's a language problem, and here's the four domains of language they could be struggling in.' So that's why I chose WIDA to form these two groups because again, it tells me the data I need to know about these kids. I have to be particular about what data I choose.

P3 stated that each assessment, "Has to fit because you can have data, but if it's not good data and it doesn't support what you want to do, then it really is meaningless." Participants explained that since different assessments measured different student abilities, varied assessment would be beneficial for their DDDM practices.

All participants shared the varieties of data they used for DDDM. Assessment data discussed included those collected at the school and district levels. P9 said, "Oh, we have a multitude of different platforms that we use to collect data. My particular district has many different tests that we do per quarter, that we do twice a month." P7 stated, "There's a whole bunch of different reports that we use in our platform." P10 said, "We

use an assessment which is the children get assessed three times a year, fall, winter, and spring." P2 shared, "WIDA, PSSA, all the benchmarks we give."

Some participants shared the types of academic assessments they used when collecting a variety of data at the classroom level. P4 mentioned, "Test and quiz scores." P4 also shared, "Even through games as well, like Cahoot and Quizlet." P4 continued:

> We are going to look at tests and vocabulary, their cumulative portfolio work, which would be for me, an interactive notebook, oral presentations on something, some project they created, and then verbally expressing it to the class, and then maybe through English language challenge throughout the year they present work they've presented to other kids in the school.

P5 explained, "Using any type of data-- it could be something simple, just an exit ticket." P9 shared, "I use my own personal test scores that are not state-related. I'm a huge advocate of pre- and post-tests." P9 also remarked, "There's also things like observational behavior that's also quite paramount to your experience of being a teacher." P9 continued, "You have to be able to sense, whether empathetically or through observation or by knowing your student, what their needs are in that particular frame of time." P8 remarked, "There are so many different ways to collect it."

Participants also shared that the variety of data used for DDDM should include data beyond academics. P2 explained that the behavioral data collected by the school is valuable to the classroom teachers. P2 shared the need to, "Know what's going on outside of our own classrooms when it comes to behavior." P6 shared, "I'm looking at the behavior of that student as well. We have data-driven goals for that student behaviorally

as well as academically." P6 also discussed the need for discipline and social/emotional data. P4 shared, "Demographic data can tell you a lot, too, of where these kids are coming from and actually being able to understand maybe why they didn't stay or do their homework." P3 said, "A lot of my students come from poverty and understanding where they're coming from and their home lives and knowing that they don't have those supports and stuff." P2 shared:

> It really helps us to put into perspective our own classrooms of the face of the students we're teaching, okay? It really is important to know, oh, all of our kids are poor. Oh, everybody has to get a free lunch. Yeah. It helps put into perspective the culture of the school sometimes.

Participants shared the need for a variety of data sources and types in order to make appropriate instructional decisions for their students.

Data Literacy Skills

Ten participants expressed the importance of data literacy skills. P1 shared her experience with understanding data, "I didn't know how to use it. I knew how to collect it but didn't know how to use it." P1 continued, "If they could tell me, 'Do this,' It'll be better than, 'Here, here's your data.' Show me what it is, because I can't." P8 explained that literacy skills are needed to, "Truly understand what the numbers mean once we get the data." P2 explained the need for data literacy. P3 postulated the importance of recognizing, "What is good data, what is bad data." P3 also emphasized the need to, "Know how to analyze it." P10 explained the importance of data literacy, "Just us analyzing it and looking it over and seeing what we need to do." P6 explained the

teachers' responsibility regarding data, "To have it appropriately addressed and assessed and then to analyze it." Data literacy includes the transformation of student data into instructional decisions. Some participants discussed the importance of transformation. P4 said:

> I think because I've been teaching for so long and gone to school so many times for different advancements, certifications, degrees, and through my training, that it does make it easier to understand why we're doing it and what we can gain from it than actually implementing it.

P2 explained the way data literacy is connected to data transformation. P2 shared the need, "To look at my student's data and break it down and then follow it with lesson planning right afterwards so I can put that data decisions right into practice."

Participants in this study explained the need for key skills needed to read, analyze, and transform varied types of data. They also shared that they did not always believe that data accurately represented their students' abilities. Participants expressed the need for additional and varied data.

Theme 3: Teachers Express Negative Attitudes Toward Schoolwide DDDM Expectations and Data Use for Teacher Evaluations

Participants expressed negative perspectives of DDDM policies. They shared that administrative DDDM expectations and teacher evaluations based on students' data caused them to express a negative attitude toward DDDM. Feelings of anxiety, frustrations, and pressure were noted. Participants explained that schoolwide expectations were difficult and unrealistic. Participants also shared that the practice of using student data to evaluate their teaching practices was unfair.

Schoolwide DDDM Expectations

When asked about DDDM, eight out of 11 participants expressed feelings of anxiety, frustration, or pressure as a result of schoolwide DDDM expectations. P1 stated, "It frustrates me. As a special ed teacher, I get very frustrated." P5 expressed the pressures of DDDM, "I want to say, I guess, anxiety a little bit and just pressure." P5 also shared, "From a personal perspective, I think it just kind of adds pressure." P2 shared, "I just know as a teacher and in talking with fellow colleagues, as soon as we hear the word data, you get the, 'Oh, no, not again feeling.'" P1 described:

> Supervisor of instruction, is like, 'What is your data? Show me your data. Let's move the data. Move the data.' And the math coach, too, is all about data. And it's almost like it's a four-letter word because we've been successful, we survived COVID. We're bringing these kids up to grade, trying anyway, and there's so many other obstacles.

P6 described data use responsibilities, “The reality is the pressure of being just a teacher nowadays.” P10 stated:

> I just get frustrated with the expectation that every kid should be able to do all these things and that we need to kind of look at that and maybe re-evaluate what to do with it with the data.

Participants expressed frustration as a result of administrative expectations.

Several participants expressed their opinions regarding the intensity of administrative expectations. P5 mentioned:

> I feel like they expect all of our numbers to be good and that every kid makes improvement on each test and each time we collect data, which I guess it can happen, but it's a lot. So, it's a heavy expectation, I feel like.

P1 stated, “They're always pushing us to be, ‘Push them up, push them up.’” P11 explained expectations, “Leadership thinks, ‘Look at that standard. Hit on that standard. Boom, done.’”

Many participants described schoolwide DDDM expectations as unrealistic. P2 said, “It's just not always realistic.” P6 described, “You're always playing on this stupid hamster wheel of trying to sit here and catch up to a non-existent, non-realistic goal.” P11 stated, “Leadership sometimes is a little bit far removed from the classroom in terms of not understanding.” P11 continued, “However, sometimes it's a little bit unrealistic or difficult to accomplish the way they want us to.” Schoolwide expectations were described in a negative way by participants in this study. Expectations were explained to cause frustration, anxiety or pressure for teachers.

Data Used by Administration for Teacher Evaluation

Out of 11 participants, seven mentioned student data for teacher evaluation. P9 shared, “That also informs our administration about how effective we were.” P9 continued to explain that there are, “A myriad of different venues that our administration uses to gauge our execution and the sufficiency of the data.”

Participants expressed negative attitudes toward the use of student data to evaluate teachers. P10 described DDDM, “An evaluation of how I'm teaching.” P10 explained, “A lot of this is what needs to be done, and then we try to do it, and then, ‘No, you're not doing it right.’” P10 also shared, “Sometimes you're just like a hamster on a wheel like you just can't it doesn't matter what you do, you're just running in circles.” P6 explained:

> Then the next thing you know, you're told that you're not on pace. You're not where you're supposed to be. You're supposed to be further along this, or we need to add this into the curriculum. Or we need to add that. And teachers get pulled in so many different directions, we feel like taffy.

Participants in this study expressed feelings of anxiety, frustration, or pressure. They explained that DDDM expectations were high and that they were not sure these expectations could be met. Participants also explained that schoolwide DDDM policies that use student data for teacher evaluations may cause teachers to experience negative feelings.

Theme 4: Teachers Express Confidence in the Benefits of DDDM and in Their Ability to Use Data for Instructional Decision Making

Participants expressed positive perspectives regarding the benefits of DDDM. They noted the benefits of having concrete data to make decisions that helped their students learn. They also noted that DDDM assisted them in providing differentiated instruction so that students received the specific instruction they needed. Participants explained that they perceived their abilities to use data for instructional practice was positive. Some noted that their experience helped them to grow in practice. Others shared that they were helping their colleagues to learn DDDM practices.

Benefits of DDDM

Many participants explained the benefits of using data. P7 shared, “With whatever you're teaching them, are they showing growth? So that is, to me, the biggest benefit.” P4 said, “Benefits, you can adjust your teaching, your methods, or techniques.” P9 expressed, “The importance of data-driven instruction. I mean, again, numbers don't lie.” P8 also explained, “You are able to measure what equals what, this data is collected from this test, and this is what it's for, and this is how we measure you. So, I think using it in that way is helpful.” P10 stated, “So, I think it's important because it does help to find levels for our students.” P10 continued, “So, then we can also help them grow and develop from those areas.” P7 suggested, “The benefits are when children needed additional support, the data can support that.” P8 said, “We do also use a lot of testing, and this is very helpful in making our decisions and in showing student growth.” P3 shared the use of data, “Kids need the extra help and for us to provide an intervention.”

P5 explained, “It does have a place.” P5 continued, “Using data from that helps drive what you need to be teaching, what students need to work on, even just in lessons.” P5 also said:

> It just gives you that information that's like, are they getting it or are they not? And if they're not, you either need to go back and reteach. And, if they're getting it, then you know, okay. I can move on to the next thing.

The benefits of DDDM were described in a positive way by the participants in this study. Many participants explained the beneficial role that data play in differentiated instruction. P4, explained, “You can adjust your teaching, your methods, or techniques.” P1 explained about her co-teacher, “She'll come and say, ‘Hey, this kid needs this help. And then I reteach the material.’” P5 explained that teachers may, “Find a different way or go over it again.” P6 emphasized creating, “More individualized instruction for the students.” An example of this was explained by P7:

> Well, we always want to adapt the teaching style, but maybe, okay, instead of teaching decimals right now, we're going to move around the curriculum and teach this skill, you know what I'm saying? Level it to see what they need, what their strengths are, and what their weaknesses are and move it around that way.

P9 explained:

> Then you tweak the system a little bit and you introduce other aspects to meet the multiple intelligences that are in that room making sure that we're appealing to all the audio learners, the visual learners, the kinesthetic learners, the interpersonal

> learners, the intrapersonal learners. Maybe having multiple activities or stations that they can revisit.

P11 shared, “We'll differentiate the homework based off of that.” P3 said, “Maybe I need to reteach, maybe I need to pull the kids into small groups.” Participants explained that data are beneficial for providing concrete data to make instructional decisions. They noted that DDDM assisted them in providing differentiated instruction for their students.

Ability to Use Data for Instructional Decision Making

When asked about their ability to use data for instructional decision making, most participants reported confidence and comfortability. P2 explained:

> I've been teaching for 20 years, so data-driven decision-making is not new to me. I feel pretty confident, actually, in looking at data. I feel I know what I'm looking for. I know what trends I'm looking for, and I feel comfortable using data to make decisions in my own classroom.

P3 stated, “I think I'm pretty good and then I'm comfortable with it. I'm not afraid and I'm not afraid, even if I have outliers.” P4 explained:

> I think because I've been teaching for so long and gone to school so many times for different advancements, certifications, degrees, and through my training, that it does make it easier to understand why we're doing it and what we can gain from it than actually implementing it.

P6 stated, “I'm pretty data-driven on that part there.” P7 mentioned, “I'm not going to say I'm going to lead a professional development, but I give myself a ‘proficient.’”

Participants in this study considered DDDM to be useful. They explained that DDDM is important in differentiating student instruction. Participants also considered themselves to be competent in their ability to use data for instructional decision making.

Evidence of Trustworthiness

Ravitch and Carl (2016) suggested that to enhance the trustworthiness of qualitative research, researchers should consider (a) credibility, (b) transferability (c) dependability, and (d) confirmability. Credibility is the measure of confidence in research findings that are based on believable and plausible collected data (Merriam & Tisdell, 2016). To address credibility for this study, I used a semistructured interview format, with follow-up questions as necessary to reach data saturation (see Burkholder et al., 2016; Ravitch & Carl, 2016). I developed a rapport with study participants to enhance the flow of complete and accurate descriptions. To establish rapport, I remained calm, pleasant, and professional during all participant interactions. I continued to interview participants until saturation was reached to minimize limitations that may have occurred as a result of the small sample size in this study. Once interviews were complete, I reminded the participants that a two-page summary of study findings would be emailed to them after the data analysis, and that they would have 48 hours to review it and contact me with questions or comments. Member checking is an additional measure of credibility and helps to ensure that the findings reflect participants' perspectives and experiences. I did not receive any comments or questions from member checking so no further action was needed.

Transferability refers to the extent that study findings can be applied to broader contexts (Merriam & Tisdell, 2016). Transferability in qualitative research can be challenging because the scope of findings is specific to the participants and environments in the study (Shenton, 2004). Thorough descriptions of interviewing methods and contextual information may assist the reader in deciding if the findings are similar to their own experiences. To address transferability, I provided detailed information using comprehensive descriptions of the study's recruiting and interviewing procedures, participants' experiences, and quotes from interview transcripts so that readers may judge the applicability and transferability of the research findings.

Dependability of a study represents the stability, trustworthiness, and repeatability of research findings (Burkholder et al., 2020). To address dependability, I used an interview protocol guide to increase consistency in questioning. I used data saturation, analysis of discrepant findings, peer debriefing, and member checking to confirm data accuracy. There were no comments or questions from participants, so no clarifications were needed. Data saturation was reached when continued data analysis did not add any new codes, categories, or themes. Discrepant case analysis and member checking were used to enhance validity. During the data analysis of my research, I did not find evidence that would contradict the findings, so further analysis was not required.

The extent to which other researchers may verify research results is called confirmability. Researcher bias may negatively affect confirmability (Ravitch & Carl, 2016). Reflexivity is a strategy used to remove bias by journaling (Merriam & Tisdell, 2016). To achieve confirmability for this study, I kept a journal to record notes regarding

my feelings, thoughts, and opinions during the entire study and maintained an audit trail. An audit trail provides a detailed pathway of data and analyses where notes and memos describe the researcher's decision making throughout theme identification (Burkholder et al., 2020). I also acknowledged and journaled my personal biases which can influence study findings.

Summary

In Chapter 4, I reviewed the data analysis of this study. This study was designed based on the research question to explore teachers' perspectives on using data for instructional decision making. I described the setting and data collection for this basic qualitative study which was conducted using semistructured interviews for all 11 participants. I described the data analysis procedure I used for qualitative data analysis.

The first theme was: administrative support structures influence teachers' DDDM practices. All participants described the administrative support that was provided in their schools. Ten participants described the importance of the planned data team meetings that were provided for teachers' collaboration. Many participants discussed professional development support. While some participants described professional development as helpful, other participants emphasized the need for additional professional development opportunities. Accessibility of data for DDDM was a support discussed by participants. Some participants described adequate access and other participants explained that they were not supported with access to data. Participants also identified time as a necessary support for DDDM practices.

The second theme was: a variety of data and data literacy skills are necessary for DDDM. All participants in this study discussed the importance of collecting and using a variety of student data. Many participants explained that individual data points may be skewed. Participants also explained the need for a variety of assessments because each assessment may provide different information. All participants shared the varieties of data they used for DDDM. Assessment data discussed included those collected at the school and district levels and those collected at the classroom level. Participants also shared that the variety of data used for DDDM needed to include data beyond academics. To use data for DDDM, participants explained the importance of data literacy skills.

The third theme was: teachers express negative attitudes toward schoolwide DDDM expectations and data use for teacher evaluations. When asked about DDDM, eight out of 11 participants expressed feelings of anxiety, frustration, or pressure as a result of schoolwide DDDM expectations. Several participants expressed their opinions regarding the intensity of administrative expectations, and some described schoolwide DDDM expectations as unrealistic. Participants also expressed negative attitudes toward data use of student data to evaluate teachers.

The fourth and final theme was: teachers express confidence in the benefits of DDDM and in their ability to use data for instructional decision making. Many participants explained the benefits of using data and described the ways that data are helpful for instructional decision making. Participants also explained the beneficial role that data play in differentiated instruction. When asked about their ability to use data for instructional decision making, most participants reported confidence and comfortability.

In the chapter, I explained the processes of addressing the trustworthiness of this study. I described credibility, transferability, dependability, and confirmability through member checking, development of a rapport with participants, journaling, maintaining an audit trail, peer debriefing, analysis of discrepant cases, data saturation, and using quotes from interviews to establish trustworthiness. During the data analysis of my research, I did not find evidence that would contradict the findings, so further analysis was not required.

In Chapter 5, I interpret the findings and describe the limitations, recommendations, and implications of this study. An analysis of the results for each theme is given with an explanation of how it is aligned with the research question and the peer reviewed literature included in Chapter 2. I include a description of limitations and recommendations for addressing the limitations in detail. I also explain topics for further research, opportunities for social change, study implications, and provide a conclusion for this study.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this basic qualitative study was to explore teachers' perspectives on using data for instructional decision making. I gathered data using semistructured interviews conducted via the Zoom platform. The 11 participants were middle school teachers from the research district with at least 3 years of teaching experience. I identified four themes from the data analysis: (a) administrative support structures influence teachers' DDDM practices, (b) a variety of data and data literacy skills are necessary for DDDM, (c) teachers express negative attitudes toward schoolwide DDDM expectations and use of data for teacher evaluations, and (d) teachers express confidence regarding the benefits of DDDM and in their ability to use data for instructional decision making. In Chapter 5, I explain the findings of this study and provide an understanding of teachers' perspectives on using data for instructional decision making. I use the TPB to frame the research findings and compare conclusions with current literature. The implications, limitations, and recommendations for future research are provided. I conclude the chapter with my reflection on this study.

Interpretation of the Findings-Current Literature

I began data collection after acquiring approval from Walden University's IRB. I used purposeful and snowball sampling strategies to obtain 11 participants for semistructured, one-on-one interviews. I used Braun and Clarke's (2006) six-phase framework for the analysis of data.

I identified four themes through data analysis. These themes are directly connected to the TPB framework. According to the TPB, participants' perspectives, or

their attitudes, subjective norms, and perceived behavioral control beliefs help to explain behavior (Ajzen, 1991). To examine the DDDM behavior in the research district, the TPB was used as the conceptual framework to better understand teachers' perspectives.

Theme 1: Administrative Support Structures Influence Teachers' DDDM Practices

Creating a positive and supportive DDDM culture is important because people are influenced by the beliefs and actions of others (Ajzen & Fishbein, 1975; Fishbein & Ajzen, 2011; Raffe & Loughland, 2021; Ruble et al., 2018; Schelling & Rubenstein, 2021). Supportive school policies and culture improve teachers' DDDM effectiveness (Botvin et al., 2023; Lasater et al., 2020; Raffe & Loughland, 2021). School leadership plays a critical role in the development of a beneficial DDDM school culture (Young et al., 2018). When asked about the schoolwide DDDM culture in their schools, participants in this study described a supportive environment. Many participants noted a positive and supportive school culture where administrators were available to answer data-related questions and assist in problem solving. These findings are consistent with research that emphasized supportive DDDM school cultures (e.g., Abrams et al., 2021; Botvin et al., 2023; Bruhn et al., 2020; Raffe & Loughland, 2021; Ruble et al., 2018; Schildkamp et al., 2019). Participants in this study expressed that they needed administrative support to use DDDM effectively. They shared the ways that administrators were frequently available to teachers in need of assistance. Some participants also described that the school culture has improved from previous years.

School leadership can facilitate teachers' conversations and interactions about DDDM through collaborative data teams (Abrams et al., 2021). Team collaboration can

strengthen data use practices and improve the data culture in schools (Goffin et al., 2022; Jimerson et al., 2021; Schelling & Rubenstein, 2023; Schildkamp et al., 2019). The findings of my study support these assertions. Participants described the importance of the planned data team meetings that were provided for teachers' collaboration. They shared that these team meetings were scheduled by the school administration for teachers and their grade-level peers.

Professional development can improve teachers' use of data for instructional decision making (Beck et al., 2020; Jiang et al., 2020; McMaster et al., 2020; Oslund et al., 2021; Pitsia et al., 2021; Reeves & Chiang, 2018). According to Schelling and Rubenstein (2023), professional development is helpful when it is applicable to teachers' specific DDDM responsibilities. Similarly, participants in my study indicated that professional development was most useful when related to their DDDM practices. Participants expressed that professional development was helpful and provided the opportunity for teachers to ask questions and solve problems.

Many participants described the need for additional professional development opportunities. Participants noted that professional development days were infrequent, not always applicable, and were not available when significant data results, such as from state testing, became available to teachers. This aligns with current research that showed teachers desired additional professional development (see Jiang et al., 2020; McMaster et al., 2020; Oslund et al., 2021; Pitsia et al., 2021; Schelling & Rubenstein, 2023). Participants expressed the need to learn more about the DDDM practices they were

required to use. They explained that while they had access to professional development, they believed that they needed additional training.

Access to data is a necessary element for adequate DDDM (Albiladi et al., 2020; Beck et al., 2020; Chen, 2019; Dodman et al., 2019; Jafari & Ahmadi Safa, 2022; Mandinach & Schildkamp, 2021; Reeves et al., 2022). Mandinach and Schildkamp (2021) reported that lack of access to data is a concern for adequate DDDM practices. This is consistent with the finding of this study. Lack of data accessibility for instructional decision making was also noted by participants in this study. Participants explained that they do not always have access to all data pertaining to their students. They shared their need to know about, and have access to, all student data to make the most appropriate instructional decisions.

A persistent barrier to DDDM is lack of time (Albiladi et al., 2020; Donaldson & Firestone, 2021). Teachers often find DDDM very time consuming (Lockton et al., 2020; O'Brien et al., 2019; Reeves & Chiang, 2019; Roegman et al., 2021; Walker et al., 2018). This is consistent with the findings of my study. Participants reported the need for adequate time to effectively use data for instructional decision making. These findings support other research that showed teachers were frustrated with their level of time allotted for DDDM practices. When teachers do not have adequate time, they often limit their data sources to standardized testing scores (Schelling & Mason, 2021). When school leaders place great emphasis on time-consuming standardized test scores, the results may negatively affect teachers' DDDM practices (Datnow & Park, 2018; Schelling & Mason, 2021). For effective DDDM, teachers need adequate time.

Participants in my study highlighted the DDDM support that incorporated professional development, data facilitators and coaches, and collaborative data teams. Participants discussed challenges regarding a lack of access to data and time to properly use data for instructional decisions. For teachers to implement effective DDDM practices, school leaders need to provide appropriate support strategies.

Theme 2: A Variety of Data and Data Literacy Skills Are Necessary for DDDM

To be effective, teachers should use a variety of data sources when making instructional decisions for students (Mandinach & Schildkamp, 2021; Reeves et al., 2022; Schelling & Mason, 2021; Wilcox et al., 2021). Researchers reported that although teachers receive academic student data, they also expressed the desire to access a wide range of data including social-emotional and family-related data to improve their instructional decision making (Beck & Nunnaley, 2021; Botvin et al., 2023; Reeves et al., 2022). Data beyond academics is important for educational achievement (Park, 2018; Reeves et al., 2022). Similarly, participants in this study discussed the importance of collecting and using a variety of student data beyond academics. They noted the usefulness of demographic and behavioral data. Participants expressed that multiple kinds of data are necessary to provide relevant instruction for students. They stated that academic data alone is not enough to understand the whole child.

Another reason for multiple sources of data is lack of teacher confidence in the accuracy of data (Albiladi et al., 2020; Little et al., 2019). According to Little et al. (2019) teachers reported a lack of confidence in the accuracy of student data. Albiladi et al. (2020) found that teachers expressed a lack of trust in the accuracy of student

assessments. This is consistent with the findings of my study. When asked about the data used for instructional decision making, many participants discussed their lack of confidence in assessment data. For example, P1 shared that children may perform differently on different tests, “One test might be, oh, the child's at a fourth-grade level, and the other test was given on a different day and it comes in at a first-grade level.” Participants explained that multiple sources of student data were necessary because some data points may not be an accurate representation of student abilities. Participants also explained that student data can be skewed for many reasons. They noted that data should be collected using multiple types of assessments so a more accurate measure of the student can be obtained.

Several skills are needed to effectively use data for instructional decision making. A significant skill needed for DDDM is data literacy (Beck et al., 2020; Chen, 2019; Goffin et al., 2022; Pitsia et al., 2021; Reynolds & Park, 2021). Teachers are not always prepared for the data literacy required of contemporary educators (Dunn et al., 2020; Hamilton et al., 2022; Humphries et al., 2023; Schelling & Rubenstein, 2023). Study findings support this assertion. Participants explained that teachers needed to be able to read and understand student data to make appropriate, data-based decisions. Some participants explained that they were not always able to understand student data or that other teachers had difficulty with data literacy. Other participants noted that without the ability to understand data, they would not be able to make adequate, data-based decisions.

Educators need to thoroughly analyze assessment data to obtain instructional insight (Dunn et al., 2020; Humphries et al., 2023; Mandinach & Schildkamp, 2021;

Miller-Bains et al., 2022). This is in line with the findings of my study where participants expressed data analysis as a necessary skill for DDDM. Participants explained that reading the data was not enough to make adequate data-based decisions. They stated that teachers needed to interpret the data. For example, P2 explained, “We really need to look at this in data and to make sure that we're actually getting to the root cause of the student's needs and not just doing generalizations based on the range they fell into.” Participants explained that DDDM necessitated the ability to analyze student data.

Another key skill for DDDM is transforming data into usable instructional decisions (Goffin et al., 2022; Lembke et al., 2018; Schelling & Rubenstein, 2023; Wilcox et al., 2021). Schelling and Rubenstein (2023) highlighted the significance of transformation skills. This is consistent with my findings. Participants explained that the most important step in DDDM is having the ability to transform data into decisions regarding instruction. They explained that using key skills to read, analyze, and transform varied types of data were necessary for teachers’ use of data for instructional decision making.

Theme 3: Teachers Express Negative Attitudes Toward Schoolwide DDDM Expectations and Data Use for Teacher Evaluations

The expectations for data use in the classroom have increased in recent years (Dodman et al., 2021; Miller-Bains et al., 2022). Teachers engage in DDDM practices more frequently when they have a concrete understanding of what is expected of them (Abrams et al., 2021; Goffin et al., 2022). Yet teachers often find expectations from school leaders to be stressful (Lockton et al., 2020; Roegman et al., 2021; Schelling &

Rubenstein, 2021). The findings of this study support this view. Several participants spoke about the difficulty and intensity of administrative expectations. Participants also explained the frustration and pressure they felt when the expectations of administrators seemed unattainable. They expressed that they practiced DDDM to the best of their abilities. They also noted that some DDDM expectations were unrealistic.

Administrators may use student assessment data to evaluate teachers' instructional abilities. DDDM may be hindered by teacher evaluations based on student data. School administrators should avoid using student data for teacher accountability because a heavy focus on data use for teacher evaluation may negatively affect teacher attitudes and student achievement (Lasater et al., 2020; Lockton et al., 2020; Prenger & Schildkamp, 2018; Schelling & Mason, 2021; Schelling & Rubenstein, 2021; Schildkamp et al., 2019). Lockton et al. (2020) explained that when student assessment data were used for teacher evaluations, teachers expressed negative attitudes. This is consistent with the findings of this study where participants expressed negative attitudes toward the use of student data for teacher evaluations. P5 expressed, "I don't think that that should really tie into teacher effectiveness as it does, because I just don't really think that that's fair." Participants noted that student assessment scores should be used for DDDM and not teacher evaluations. Many participants expressed feelings of frustration and pressure as a result of DDDM expectations and teacher evaluations.

Theme 4: Teachers Express Confidence in the Benefits of DDDM and in Their Ability to Use Data for Instructional Decision Making

Researchers have concluded that a person's behavior is influenced by their own beliefs about the benefit of that behavior (Ajzen, 1991; Canova & Manganelli, 2020; Fishbein & Ajzen, 2011). Teachers were found to consider DDDM useful (Dunn et al., 2020; Goffin et al., 2022; Schelling & Rubenstein, 2021, 2023). This is consistent with the findings of the current study. Participants described their confidence in the benefits of data use. P11 explained:

> The data that you have and you making that decision, you sort of get that confidence. You have that confidence knowing okay, even for good things. So, if the whole class gets the 90 or 100 on a short lesson check, I have that confidence knowing, okay, I'm making this decision based off of this data that they're ready to move on. So, I can have confidence in that.

Participants also described their beliefs about the utility of data for instructional decision making. They explained that data were useful for providing concrete information about students. P9 expressed that data can offer "An empirical lens for you to interpret what's going on in your classroom." Participants shared that they perceived DDDM as useful and beneficial for teaching.

DDDM is beneficial because decisions are based on improving student achievement (Grabarek & Kallemeyn, 2020; Keuning et al., 2019; Kippers et al., 2018; Schelling & Rubenstein, 2023). The participants in my study expressed similar beliefs. When asked about their perspectives regarding DDDM, participants named several

benefits of DDDM for their students. They explained that data provided a baseline of each student's abilities and the ability to track individual growth. They shared various ways that they used data to inform and adapt their teaching practices to meet the needs of each of their students.

Differentiated instruction is based on the alignment of student assessment data with instructional decision making to create learning activities designed to address the diverse needs of students (Chua et al., 2021; Karst et al., 2022; Khan & Vasu, 2018; Rajeh Alsalhi et al., 2021; Smale-Jacobse et al., 2019; Smets, 2019; Smets & Struyven, 2018; van Geel et al., 2019). The ways that teachers use student assessment data in the classroom are vast (Puzio et al., 2020; Regan et al., 2022). Albiladi et al. (2020) concluded that among other purposes, teachers used data for differentiated instruction and grouping of students. The current study findings support this conclusion. All participants in this study referenced the ways that they used data to differentiate instruction. P5 explained:

> If I'm doing major reading groups, I'm going to look at the STAR data and that gives me targets for what I think they need to work on. But if we took, I don't know, a vocab test or something, and I did, I looked at that grade, I'd be like, 'Oh, they didn't do well. They really don't understand these words. Let me go back and reteach it.'

Participants shared various ways that data were used for differentiated instruction. They shared examples of differentiated teaching methods, differentiated homework, alternative teaching materials, and the use of small groups.

Many teachers use small groups as a differentiated instructional strategy (Puzio et al., 2020; van Geel et al., 2019). Participants mentioned the use of small groups as a differentiated instructional practice. Participants explained that many teachers used small groups as a differentiated instructional practice in their schools. They also noted that the use of small groups was a common practice in classrooms throughout their schools.

When asked about their ability to use data for instructional decision making, most participants reported confidence and comfortability. Many participants classified their abilities as proficient. P6 stated, “I'm going to say a nine out of 10.” These findings are consistent with current research regarding data use comfortability (Schelling & Rubenstein, 2021; Sebestyén, 2021). Participants shared that they believed their ability to use data for instructional decision making was positive. Some participants noted that they assisted peers with DDDM.

Participants in this study expressed the need for appropriate DDDM support strategies provided by school leaders. They also explained the need for a variety of available student data and described data literacy, analysis, and transformation as key skills needed for DDDM practices. Participants noted that DDDM policies that focus on high expectations, and use student data for teacher evaluations, resulted in feelings of anxiety, frustration, or pressure. Participants in my study considered DDDM to be useful and considered themselves to be competent in their ability to use data for instructional decision making. Participants also reported that data was important for DDDM because it provided teachers with the confidence to make decisions based on concrete student data.

They noted many ways that data were used for differentiated instruction. Participants also reported confidence and comfortability in performing DDDM practices.

Interpretation of the Findings and Their Relationship with the Conceptual Framework

The TPB consists of three constructs: attitudes, subjective norms, and perceived behavioral control beliefs. The first construct is attitudes which are based on one's behavioral beliefs and can be determined using an individual's beliefs about performing an action (Ajzen, 1991). Attitudes include both experiential attitudes and instrumental attitudes (Ajzen, 1991; Canova & Manganelli, 2020; Fishbein & Ajzen, 2011). Experiential attitudes are based on emotions and feelings toward a particular behavior (Ajzen, 1991) and may influence how teachers use data (Prenger & Schildkamp, 2018). Participants in this study expressed mixed feelings and emotions toward DDDM. P2 said, "Well, I feel data-driven decision-making is important. I just know as a teacher and in talking with fellow colleagues, as soon as we hear the word data, you get the, 'Oh, no, not again' feeling."

Instrumental attitudes represent the perceived utility and benefit of a particular behavior (Ajzen, 1991; Canova & Manganelli, 2020; Fishbein & Ajzen, 2011) and were found to influence teachers' use of data for DDDM (Prenger & Schildkamp, 2018). Participants in this study shared their perspectives on the utility of data and DDDM. Some participants found data useful because assessment scores are concrete. P9 said, "Numbers don't lie." Other participants explained that DDDM was beneficial because the

data provided them with the evidence that they believed they needed to make appropriate instructional decisions.

The second construct of the TPB is subjective norms which represent one's perceptions of typical behavior (Ajzen, 1991). Subjective norms regarding DDDM were found to be positively related to teachers' data use (Goffin et al., 2022; Prenger & Schildkamp, 2018). Subjective norms are based on two determinants: descriptive norms and injunctive norms. Descriptive norms include a person's perceptions regarding what others believe about a behavior and the primacy of that behavior in others' lives (Fishbein & Ajzen, 2011). The beliefs and actions of other people can influence a person's behavior (Ajzen & Fishbein, 1975). Participants in this study recognized the importance placed on DDDM practices through the support provided by their administrators. They noted that administrators were available for assistance and engaged in conversations about DDDM with teachers.

Injunctive norms include the expectations of other people. A person's beliefs about the expectations of other people may influence that person's behavior (Ajzen, 2002; Fishbein & Ajzen, 2011). Teachers' DDDM behavior may be influenced by their school leaders' expectations (Schelling & Rubenstein, 2021). Participants described their perspectives of school leaders' expectations as difficult and intense. P10 indicated, "The negative is that I just think it drives too much of our instruction that we are expected to get these kids to a certain point, and we can't always get them there."

The third construct of the TPB is perceived behavioral control and includes two determinants: self-efficacy and controllability. Self-efficacy is the degree to which

individuals believe they are capable of performing a behavior (Ajzen, 1991; Fishbein & Ajzen, 2011). Participants in this study described high self-efficacy beliefs regarding their ability to make instructional decisions based on data. However, some defined their controllability as lacking. Controllability refers to a person's perceived control over their performance of a behavior (Ajzen, 2002; Fishbein & Ajzen, 2011). Teachers who perceive they are in control of their DDDM practices are more likely to practice DDDM (Dunn et al., 2020). Control beliefs expressed by the participants in this study included a lack of control over the time allotted for DDDM practices and lack of accessibility to the data they believed were needed for effective DDDM.

The TPB has been used by researchers to better understand teachers' decision making (Farrugia & Trakulphadetkrai, 2020; Hellmich et al., 2019; Li & Cheung, 2021; Spektor-Levy & Yifrach, 2019; Voet & De Wever, 2020). Decisions about instruction were found to be affected by teacher's beliefs (Farrugia & Trakulphadetkrai, 2020; Hellmich et al., 2019; Li & Cheung, 2021) and their decision-making practices (Voet & De Wever, 2020). Investigators have used the TPB as a research framework to examine teachers' DDDM behavior (Prenger & Schildkamp, 2018; Ruble et al., 2018). The findings of this study support the use of the TPB in examining teacher perspectives regarding their use of data for instructional decision making.

Limitations of the Study

There were a few limitations to this study. These included researcher bias, issues of privacy, small sample size, and the Covid-19 pandemic. To address the limitation of researcher bias, which can affect data analysis (see Ravitch & Carl, 2016), I kept notes

regarding my feelings and thoughts throughout the data collection process. I consistently acknowledged my feelings, opinions, and prejudices when recording and analyzing data and I kept a reflective journal. I used member checking to ensure that the findings reflected participants' perspectives and experiences. I also used data saturation, analysis of discrepant findings, and discussed findings with a peer debriefer to confirm data accuracy. No discrepant data were found.

To address limitations regarding privacy, I provided a level of confidentiality for participants by using pseudonyms, removing all identifying data, and using codes throughout the transcription and coding processes. All transcriptions were saved to my password protected computer. No one has access to the data other than me. Possible limitations of this study also included the sample size. This study was limited to middle school teachers in the research district with 3 years of teaching experience. The sample size for this study was small with only 11 participants. To mitigate the limitations of small sample size, I provided rich, detailed information regarding participants' interview dialogue. I also continued interviewing until saturation was reached.

Since the beginning of the Covid-19 pandemic, many school districts changed the rules regarding visitors to their buildings which can limit accessibility to conduct one-on-one interviews. I conducted interviews using a virtual meeting platform called Zoom to obtain data. This can limit the flow of conversation due to connectivity lapses (Oliffe et al., 2021). However, Gray et al. (2020) found that the benefits of Zoom included convenience, ease of use and accessibility, and reduced travel requirements to participate in research studies so researchers can collect rich conversations necessary for qualitative

research while reducing travel limitations. To address this limitation, I conducted interviews via Zoom.

Recommendations

Results from this study may add to the research regarding teachers' use of data for instructional decision making. Future research may build on the findings of this study. The first recommendation for future research is to study the efficacy of school DDDM professional development training. Professional development can improve teachers' use of data for instructional decision making (Beck et al., 2020; Jiang et al., 2020; McMaster et al., 2020; Oslund et al., 2021; Pitsia et al., 2021; Reeves & Chiang, 2018). Schelling and Rubenstein (2023) explained the importance of professional development in improving DDDM practices. Participants in this study described the importance of professional development training, but suggested they needed additional professional development that was more applicable to their DDDM practices. Studies exploring a better understanding of training efficacy may help to ensure that DDDM professional development opportunities are helping teachers improve their practices.

The second recommendation is to explore the benefits and challenges for administrators to provide teachers with access to a variety of student data. To be effective, teachers should use a variety of data sources when making instructional decisions for students (Mandinach & Schildkamp, 2021; Reeves et al., 2022; Schelling & Mason, 2021; Wilcox et al., 2021). Participants in this study reported that data was important for DDDM, but they also expressed concern with the availability of various

types of data including non-academic data. Research to explore ways to provide additional student data may increase the variety of data accessible to teachers.

A third recommendation for future research includes studies to explore teachers' perspectives on uses for varied data types. Teachers may express a lack of confidence in data accuracy (Albiladi et al., 2020; Little et al., 2019). Participants in this study discussed their concerns about the accuracy of some assessment data. Providing access to varied types of data may assist teachers in creating a clearer picture of their students and may alleviate their concerns regarding data not accurately representing student abilities. A better understanding of teachers' perspectives may help explain what data is being sought and how the data will be used for DDDM.

The final recommendation is that further research be conducted comparing teachers' confidence with teachers' use of data for instructional decision making. Teachers often consider themselves to be competent in their ability to use data for instructional decision making (Schelling & Rubenstein, 2021; Sebestyén, 2021). Most study participants reported confidence and comfortability in their DDDM practices, yet they struggled with leadership's expectations for using data for instructional decision making. A study comparing teacher confidence with teacher practice may provide insight into ensuring that teachers' confidence is not misplaced on ineffective practices.

Implications

This study may contribute to positive social change by providing teachers and educational stakeholders with information regarding the perspectives of teachers on their DDDM practices. Study findings may provide information to teachers who want to

improve their use of data for instructional decision making. The implications of this study may be used by school administrators to support teachers' DDDM practices. When school leaders have a better understanding of teachers' perspectives, providing appropriate support may be improved. School administrators may also use these findings to provide more effective coaching and professional development.

Implications for this study may also provide information on the importance of additional and alternative data for classroom teachers. School leaders may consider providing access to these data including behavioral, demographic, and additional academics. Providing access to these data types may assist teachers and alleviate concerns about limited or inaccurate data. This may also create positive social change through improved DDDM practices.

Study findings indicated that participants expressed the importance of administrative support yet described administrative expectations as difficult and intense. The implications of this study may encourage administrators to build on the success of support methods that were found to be positive. For example, since collaborative data teams were considered by participants to be positive, school leaders may use this format to discuss and explain DDDM expectations. Positive social change may occur if school administrators continue to build on the positive support systems already created, which may reduce frustration and pressure for teachers.

Conclusion

The purpose of this basic qualitative study was to explore teachers' perspectives on using data for instructional decision making. Research exists on DDDM, but a study to

investigate the perspectives of teachers' DDDM for instructional decision making was needed. The results of this study demonstrated participants' confidence and comfortability in their DDDM practices. Participants explained the importance of DDDM and continued administrative support. Study findings also demonstrated concern with the availability of various types of data, feelings of frustration and pressure as a result of DDDM, a lack of confidence in assessment data, and a lack of time to properly implement DDDM. Participants described administrative expectations as difficult and intense. The results of my study helped to explain the gap in practice.

The No Child Left Behind (NCLB) Act was passed in 2001 and reauthorized as the ESSA in 2015. The ESSA requires student assessment data to be collected and used to identify and respond to disparate student achievement outcomes. Despite this requirement and the known benefits of DDDM, teachers do not always use data for decision making (Lockton et al., 2020; Miller-Bains et al., 2022; Wilcox et al., 2021). Numerous studies have been conducted across the world to investigate teacher practices and ways to improve the DDDM. It is my hope that this study will lead to a deeper understanding of teachers' perspectives on DDDM and inspire further research to increase and improve the practice. DDDM is not just required, it is also a crucial element in providing students with the instruction they need to be successful.

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Appendix A: Interview Protocol Guide

School: _____

Participant: _____

Interviewer: _____

Other Topics Discussed: _____

_____

Post Interview Comments or Leads:

_____

Introductory Protocol

Thank you for agreeing to participate in this study.
As a reminder, I will be audio recording our conversation today. I am the only person who will have access to the recording, which will be destroyed after it is transcribed. I will not record or reveal any identifying information about you and a pseudonym will be used during all transcriptions, notes, and data analyses.
Remember, your participation in this study is optional. You may stop or take a break at any time if you feel uncomfortable.
I have planned this interview to last 30 - 45 minutes. During this time, I will ask you several research questions.

Introduction

You have volunteered to speak with me today. You have been identified as someone who has a great deal to share about using data for instructional decision making. My research study pertains to teachers' perspectives on using data for instructional decision making. My study does not aim to evaluate your teaching practices, decisions, or experiences. Rather, I am trying to learn more about instructional decision making that is based on student data. It is my hope that the knowledge gained from this study may be beneficial to teachers who use student data to make instructional decisions and to school leaders who support those teachers.

A. Interview Questions

1-What feelings do you associate with DDDM?

2- Describe the importance of using data for instructional decision making

3-What are the benefits and drawbacks of DDDM?

4-How would you characterize the beliefs of other teachers in the school regarding DDDM?

5-How do other teachers in the school use data for instructional decision making? Please give examples of this.

6-Describe the expectations of school leadership regarding your DDDM practices.

7-In what ways are you supported by school leadership to use data for instructional decision making?

8-How would you describe your ability to use data to make instructional decisions?

9-How do you choose the data that you will use for DDDM?

10-Is there flexibility in the school's DDDM policy so that you can use data for instructional decision making in ways that may differ from your peers?

11-What do you believe you need in order to improve your use of data for instructional decision making?

B. Possible follow-up questions to keep the interview flowing:

1- What did you mean by…?
2- Tell me more about….
3- You mentioned…. tell me more about that.
4- Please give me an example of….

Conclusion

The interview is now complete.
As a reminder, I am the only person with access to data recordings, which will be destroyed after they are transcribed. Reports from this study will not share the identities of participants, identifying details such as the location of the study, will not be shared. Pseudonyms will be used as identifiers for all participants to protect their identities. I will not use your personal information for any purpose outside of this research project and all data will be destroyed 5 years from the completion of this study.
Once the data analysis for this study is complete you will receive a two-page summary of the findings. Please review the summary and contact me within 48 hours with any comments or questions.
Thank you so much for your participation in this study.

Appendix B: Teacher Interview Questions

A. Interview Questions

1-What feelings do you associate with DDDM?

2- Describe the importance of using data for instructional decision making

3-What are the benefits and drawbacks of DDDM?

4-How would you characterize the beliefs of other teachers in the school regarding DDDM?

5-How do other teachers in the school use data for instructional decision making? Please give examples of this.

6-Describe the expectations of school leadership regarding your DDDM practices.

7-In what ways are you supported by school leadership to use data for instructional decision making?

8-How would you describe your ability to use data to make instructional decisions?

9-How do you choose the data that you will use for DDDM?

10-Is there flexibility in the school's DDDM policy so that you can use data for instructional decision making in ways that may differ from your peers?

11-What do you believe you need in order to improve your use of data for instructional decision making?

B. Possible follow-up questions to keep the interview flowing:

1-What did you mean by…?
2-Tell me more about….
3-You mentioned…. tell me more about that.
4-Please give me an example of ….