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Teachers' Motivations to Use Data in Making Instructional Decisions

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Walden University
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Abstract

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Project Study Submitted in Partial Fulfillment

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Abstract

Student achievement levels on state standardized tests consistently declined at a high school in the Midwestern United States even after the district established the expectation that teachers use data-driven decision making to guide instruction. The school administration wanted to understand why teachers use data-driven decision making to guide instruction. The purpose of this qualitative study was to understand the reasons and motivations behind teachers' use of data driven decision making (DDDM) to inform instruction in accordance with district expectations. This study was guided by self-determination theory which focuses on the intrinsic and extrinsic motivations of individuals and the internal and external factors that can affect these motivations. Three research questions guided this study. Semi-structured interviews were conducted with 11 participants, analyzed, and coded to identify themes concerning teachers' motivation to use data-driven decision making and internal and external factors affecting teachers' motivations. The results of this study revealed that teachers possessed a low sense of self-efficacy in using DDDM to guide instruction. The findings resulted in the development of a professional development program for the teachers to increase their efficacy in using DDDM to guide instruction. This professional development program may lead to a positive social change by increasing teachers' motivation and efficacy using data-driven decision making, resulting in greater student achievement and increased graduation rates.

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Dedication

I want to dedicate this project study to my family and friends for their understanding, patience, and time to allow me to work on this project without interruption. This process was long and time consuming and required sacrifice away from my time with them. I am thankful for their support.

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To my father Dr. Thomas Murray, I want to thank you for always being there to keep my spirits up when times were tough. You were a big inspiration in my decision to begin this journey to obtain a doctoral degree and I could not have done it without your support. To Dawn, "mama bear," I want to thank you for being supportive in everything I do. To Thomas, my brother, thank you for being there for me during this journey, during the good times and bad. To all of you, my family, you are my heart.

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Table of Contents

List of Tables v

Section 1: The Problem 1

The Local Problem 1

Rationale 3

Definition of Terms 10

Significance of the Study 12

Research Questions 13

Review of the Literature 14

Conceptual Framework 14

Review of the Broader Literature 16

Implications 26

Summary 27

Section 2: The Methodology 30

Qualitative Research Design and Approach 30

Description of the Basic Qualitative Design 32

Justification for the Research Design 32

Participants 34

Criteria for Selecting Participants 35

Justification for Number of Participants 36

Procedures for Gaining Access to Participants 38

Researcher-Participant Working Relationship 39

Protecting Participant Rights 40
Data Collection 43
Description and Justification of Data Collected 43
Data Collection Instruments and Sources 45
Sufficiency of Data Collection Instrument. 45
Process for How and When Data Were Generated and Recorded 46
Tracking Data from Instruments and Emerging Understandings 48
Gaining Access to the Participants 48
Role of the Researcher 49
Data Analysis 51
How and When the Data Was Analyzed 51
Coding Procedures 52
Evidence of Quality of Procedures. 53
Limitations 54
Data Analysis Results 55
Research Question 1 57
Theme 1: Identify Areas of Weakness 57
Research Question 2 58
Theme 2: Instructional and Teacher Efficacy. 59
Theme 3: Dehumanizing and Lacking Legitimacy. 60
Research Question 3 62
Theme 4: Lack of Administrative Leadership and Support 63

Theme 5: Lack of Dedicated Time 66

Theme 6: Lack of Training 67

Theme 7: Low Teacher Self-Efficacy 69

Evidence of Quality 70

Summary 70

Section 3: The Project 74

Introduction 74

Project Description and Goals 76

Rationale 77

Review of the Literature 77

Project Description 84

Project Evaluation Plan 84

Project Implications 85

Summary 86

Section 4: Reflections and Conclusions 87

Introduction 87

Project Strengths and Limitations 87

Recommendations for Alternative Approaches 88

Scholarship 89

Project Development and Evaluation, and Leadership and Change 90

Reflection on Importance of the Work 91

Implications, Applications, and Directions for Future Research 91

Conclusion 93

References 94

Appendix A: The Project 119

Appendix B: Department Meeting Notes 141

Appendix C: Administrator Evaluation 144

Appendix D: Teacher Interview Protocol 146

Appendix E: The National Institute of Health (NIH) Office of Extramural Research Web-based training 148

List of Tables

Table 1 *Student Pass Rate on State End-of-Instruction English I and II Tests* 5

Table 2. *Student Pass Rate on State ELA Test*.....6

Table 3. *Student Pass Rate on State End-of-Instruction Algebra I, Geometry, and Algebra II Tests*.....6

Table 4. *Student Pass Rate on State Math Test* 7

Table 5. *Student Pass Rate on State End-of-Instruction U.S. History Tests*.....7

Table 6. *Student Pass Rate on State End-of-Instruction Biology I Tests*.....8

Table 7. *Student Pass Rate on State Science Test*.....8

Table 8. *Student Pass Rate Percenatge Towards School Accountability* 9

Table 9. *Student Average ACT Score of High School Graduates (Based on Highest Score)*.....9

Table 10. *Research Questions, Themes, and Codes* 56

Note. Participants' teaching discipline and years of experience.....71

Section 1: The Problem

The Local Problem

In 2011, the state of Oklahoma implemented a new system to assess school performance measuring college and career readiness of students (Oklahoma State Department of Education, 2019c). The report cards provided data for each school within a district with the intent to provide concise information to allow parents and the community to clearly understand the performance levels of schools (Oklahoma State Department of Education, 2019c). School districts, and individual schools within the district earned a grade ranging from "A" to "F," with "A" being the highest score a district and school could receive while "F" represented the lowest score. Student achievement accounted for 50% of a school and districts report card grade (Oklahoma State Department of Education, 2019b). Additionally, the state department provided data to each school district with test performance data specific to content area standards (Oklahoma State Department of Education, 2019b). Following the passage of the Every Student Succeeds Act in 2015, the Oklahoma State Board of Education determined to implement a new assessment system to provide a multimeasure approach to accountability while providing better information to allow schools to remediate and provide intervention for students achieving below the required level.

Since the implementation of the Oklahoma State Department of Education accountability system in 2011, Midwest City High School (MCHS, a pseudonym) used the performance data provided by Oklahoma State Department of Education in accordance with newly adopted district policy to promote the use of data-driven decision

making (DDDM). Department meeting notes also reinforce that teachers were using data to drive instructional decisions; however, it could not be determined with what consistency teachers were using DDDM (Appendix B). Additionally, administrators were also evaluated based on the expectation for teachers to use DDDM to guide instruction (Mr. David Humboldt, superintendent, personal communication, June 27, 2019; see Appendix C). With the adoption of DDDM to drive instructional decisions, teachers required training to understand how to effectively use data to drive instruction as the misuse or misunderstanding of data could mitigate any potential academic performance increases by students (Datnow, Greene, & Gannon-Slater, 2017). In 2014, teachers at MCHS were provided training in the use of DDDM in the context of OSDE provided data to understand how to use the data to inform instructional decisions (Hughes, Superintendent, October 8, 2019). Data coaches modeled to the teachers how to analyze data to recognize inadequate student levels. Teachers were then required to examine instructional practices that addressed that specific context standard and engage in critical discussion and make instructional changes (Hughes, superintendent, October 8, 2019).

Initially, MCHS experience academic performance growth as reported on the Oklahoma State Department of Education report card, peaking in 2012 with a grade of an "A" according to the Office of Educational Equality and Accountability. However, a problem arose as MCHS experienced a gradual decline in student performance on state standardized tests. As a result of the decline in performance levels, the MCHS Oklahoma State Department of Education report card grade dropped to a "C" in 2016. While the OSDE changed the criteria for assessing schools, MCHS maintained a grade of a "C" in

the 2017-2018 school year as well. The superintendent began to wonder if teachers were effectively using data provided by the state and were consistent in their use of DDDM to drive instructional practice because if they were, using DDDM to drive instruction did not produce the expected results of increasing and maintaining student achievement as supported by the literature (Abrams et al., 2016; Datnow & Hubbard, 2016; Niemeyer et al., 2016; Neuman, 2016; Schildkamp, Smit, & Blossing, 2019; Schildkamp, Poortman, Ebbeler, & Pieters, 2019; Grabarek & Kallemeyn, 2020; Romero & Ventura, 2020; Schildkamp & Datnow, 2020). Based on the data provided by the state, and department meeting notes, the district administration, and MCHS principal were beginning to wonder if there was a gap in practice in the use of DDDM to drive instructional practices and sought to determine the motivations of teachers to use DDDM to drive instructional decisions (Superintendent, Midwest City School District, personal communication, June 27, 2019; and MCHS principal, personal communication, August 5, 2019).

Rationale

DDDM is an important policy initiative and instructional approach used by educational organizations (Datnow & Hubbard, 2015). The pressure on schools to improve test scores at the state and national levels also increased motivation for using DDDM as research reveals that DDDM positively influences student learning and achievement (Abrams et al., 2016; Datnow & Hubbard, 2016; Niemeyer et al., 2016; Neuman, 2016; Schildkamp, Smit et al., 2019; Schildkamp, Poortman et al., 2019; Grabarek & Kallemeyn, 2020; Romero & Ventura, 2020; Schildkamp & Datnow, 2020). Additionally, school districts receiving federal funding must participate in the National

Assessment of Educational Progress reading and mathematics assessments bi-yearly (Oklahoma State Department of Education, 2019a).

Despite existing literature supporting the use of DDDM to drive instruction, there exists a gap in research. Abrams et al., (2016) and Schelling and Rubenstein (2021) indicated further research was necessary to examine the instructional responses to formative and summative assessments to clarify how closely aligned state content standards and assessments are with instruction. Datnow and Hubbard's (2016) argued that further research should focus on understanding how change in teacher capacity unfolds to understand how capacity develops within a DDDM initiative. Vanlommel, et al. (2016) and Dunn et al. (2019) also cited the need for future research to examine potential preconditions necessary to stimulate interest among teachers for working with data and whether persuasive training in DDDM changes teacher behavior. Lemons and Toste (2019) also cited the need for future studies to focus on factors that impact teachers' implementation of DDDM to guide instructional decisions.

Mandinach and Jimerson (2016) and Grabarek and Kallemeyn (2020) provided a synthesis of research on teachers' use of data and concluded that there is abundant research on the importance of using data to drive instruction. However, there was little research specifically on factors other than assessment data, including teacher motivation, self-efficacy, and attitudes concerning DDDM to drive instructional decisions. Thus, there exists a need for this qualitative study.

With the implementation of DDDM to drive instructional decisions, the student achievement on State end-of-instruction tests increased at MCHS at the end of the first

year of implementation, but then began to decrease consistently over the next 5 years. The drop in student achievement on State end-of-instruction tests caused concern among the administration and staff (Superintendent, Midwest City School District, personal communication, June 27, 2019). Table 1, Table 2, Table 3, and Table 4 illustrate student achievement scores on State end-of-instruction tests for each content area for the 2010-2011 school year, prior to implementation of new accountability standards by the State and of DDDM by the school, and the following 9 years after teacher application of DDDM to drive instruction at MCHS. No data was available for the 2019-2020 school year as due to a state testing waiver because of the pandemic (Oklahoma State Department of Education, n.d.)

Table 1

Student Pass Rate on State End-of-Instruction English I and II Tests

School year	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
English II	93%	91%	96%	92%	90%	85%
English III	97%	96%	96%	97%	94%	92%

Source: Oklahoma Department of Education (n.d.)

Table 1 represents English II and English III course end-of-instruction student pass rate. While the data presented in the table revealed a high achievement rate, performance levels began to decrease after implementation of DDDM to drive instructional decisions during the 5 years during implementation.

Table 2

Student Pass Rate on State ELA Test

School year	2016-2017	2017-2018	2018-2019
English	25	31	29

Source: Oklahoma Department of Education (n.d.)

During the 2016-2017 school year the state transitioned to a singular English test for sophomores. From 2017 to present a state English test is only given to 11th Grade students. (Oklahoma State Department of Education, 2019).

Table 3

Student Pass Rate on State End-of-Instruction Algebra I, Geometry, and Algebra II Tests

School year	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Algebra I	82%	88%	98%	73%	77%	81%
Geometry	96%	96%	93%	90%	86%	86%
Algebra II	86%	90%	80%	84%	77%	92%

Source: Oklahoma Department of Education (n.d.)

Table 3 shows an initial increase in student pass rate in Algebra I from 2010-2011 to 2012-2013 increasing a total of 16 percentage points over those 3 years following the implementation of DDDM to drive instruction. However, in the subsequent 3 years there was a double-digit decrease in student pass rate in Algebra I, dropping from 98% pass rate to 73% pass rate. Similar trends were present in Algebra II as scores continued to fluctuate positively and negatively by large margins each year following the 2013-2014 school year. Student pass rate in Geometry consistently decreased every year from the 2010-2011 school year through the 2015-2016 school year.

Table 4

Student Pass Rate on State Math Test

School year	2016-2017	2017-2018	2018-2019
Math	25	31	29

Source: Oklahoma Department of Education (n.d.)

During the 2016-2017 school year the state transitioned to a singular Math test for sophomores. From 2017 to present a State English test was only given to 11th Grade students. (Oklahoma State Department of Education, 2019a). Table 3 shows low performance in the first year of implementation during the 2016-2017 school year. The subsequent years revealed consistently low performance levels with some fluctuation over the next 2 years.

Table 5

Student Pass Rate on State End-of-Instruction U.S. History Test

School year	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
US History	87%	86%	88%	94%	81%	76%	55%

Source: Oklahoma Department of Education (n.d.)

U. S. History end-of-instruction data also reveals an initial increase in student pass rate on the state end-of-instruction tests following the implementation of DDDM in 2011-2012. After an initial decline in the first year, student pass rates increased the next 2 years peaking at 94% student pass rate on the state end-of-instruction test. However, the subsequent 3 years revealed a consistent decrease in student pass rates. The state did not collect data on United States History during the 2017-2018 school year through the 2019-2020 school year.

Table 6

Student Pass Rate on State End-of-Instruction Biology I Test

School year	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Biology I	92	88	61	64	56	57
Science	N/A	N/A	N/A	N/A	N/A	N/A

Source: Oklahoma Department of Education (n.d.)

Unlike the previous data, Biology end-of-instruction data revealed a consistent drop in scores following the implementation of DDDM at MCHS. Student pass rates on the Biology I end-of-instruction test dropped 27 percentage points from the 2011-2012 to 2012-2013 school years.

Table 7

Student Pass Rate on State Science Test

School year	2016-2017	2017-2018	2018-2019
Science	14	N/A	23

Source: Oklahoma Department of Education (n.d.)

The state test changed from a Biology test to a Science test assessing students' mastery of both Life and Physical sciences for the 2016-2017 school year. No data was available for the 2017-2018 year as well as the state rewrote the Science test during that year.

Following the 2015-2016 school year, Oklahoma began tracking English and Math as the only academic indicators factoring into the new accountability system. (Oklahoma State Department of Education, 2019a). Science was added as an academic indicator again during the 2018-2019 school year (Office of Educational Quality and Accountability, n.d.). The new accountability system revealed similar data trends in both English and Math. Table 8 reveals a continued trend of decline in all subject areas.

English declined 6.1 points and Math declined 7.2 points. While science did not have data during the 2017-2018 school year, the school earned a markedly low score during the 2018-2019 year.

Table 8

Student Pass Rate Percentage Towards School Accountability Calculation

School year	2017-2018	2018-2019
English	58.2	52.1
Math	58.6	51.4
Science	n/a	45.6
Composite	61.4	47.7

Source: Oklahoma Department of Education (2019b)

Over the same period, student average ACT scores also declined at MCHS. Table 6 reveals an initial increase in ACT average composite scores for students attending MCHS. While the increase was negligible, the increase in composite scores appear to parallel the increase in student achievement in Math, English, and U.S. History on State end-of-instruction student pass rates, peaking with an average score of 21.2 during the 2014-2015 school year. Additionally, Table 9 reveals that students' average ACT composite scores at MCHS also began to steadily decline over the next 4 years falling to an average ACT composite score of 18.7.

Table 9

Student Average ACT Score of High School Graduates (Based on Highest Score)

School year	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019
ACT Score	21	21.1	21	20.6	21.2	20.4	19.1	19.9	18.7

Source: Oklahoma Department of Education (n.d.)

The purpose of this qualitative study was to understand the reasons and motivations behind why teachers use DDDM to inform instruction. Understanding why teachers use data to drive instruction helped identify teachers' motivations behind their use of data to drive instruction, as well as the internal and external factors affecting teachers' motivations to ensure they were meeting the district expectation of consistently using DDDM to drive instruction. This information was obtained through individual teachers from MCHS. The information obtained from this study might help teachers at MCHS identify teachers' motivations for not consistently implementing DDDM to drive instruction and allow school administration to address the internal and external factors that were affecting teachers' motivation for implementing DDDM to drive instruction. This information could then be used by the district at other school site to ensure that teachers adhere to district expectations of using DDDM to drive instruction.

Definition of Terms

Data coach: Individuals whose focus is to help teachers use and make sense of student data in any content area (Reeves, 2017; Snodgrass Rangel, et al., 2016).

Data driven decision-making: The process in which individuals effectively use data to drive instructional changes that lead to improved student performance (Datnow & Hubbard, 2015; Mandinach & Jimerson, 2016). Data driven decision-making was a phenomenon of interest.

Elementary and Secondary Education Act of 1965: Federal program created to provide adequate funding and scholarships for low-income school districts and college students respectively.

Every Student Succeeds Act of 2015: A reauthorization of the Elementary and Secondary Education Act of 1965, which also provided states with flexibility regarding certain No Child Left Behind requirements. In exchange for this flexibility, states would develop rigorous and broad plans focused on closing achievement gaps, increasing equity, improving instructional quality, and improving student outcomes.

Formative assessment: An ongoing decision-making process based on data collection and observations used by educators to modify instructional methods to improve student learning (Dixson & Worrell, 2016; Thompson et al., 2016).

Motivation: Being moved by something to act towards an end; a person's intention to engage in any behavior (Prenger & Schildkamp, 2018; Ryan & Deci, 2000). Motivation was a phenomenon of interest in this study.

Intrinsic motivation: Engaging in any action because of enjoyment or fascination (Ryan & Deci, 2000). Intrinsic motivation was a phenomenon of interest in this study.

Extrinsic motivation: Engaging in any action because it leads to a distinguishable outcome (Ryan & Deci, 2000). Extrinsic motivation was a phenomenon of interest.

No Child Left Behind Act of 2001: A reauthorization of the Elementary and Secondary Education Act of 1965, which included a focus on increased accountability and flexibility for the use of Federal funds for states, school districts, and schools, increased choice for parents with students attending schools identified as low-performing, and an emphasis on reading.

Summative assessment: Using student data to determine the effectiveness of instruction using data to determine how much a student learned and remember following the completion of a learning unit (Dixson & Worrell, 2016; Thompson et al., 2016).

Significance of the Study

This study provided an original contribution to the field of education, specifically in curriculum, instruction, and assessment, by providing an understanding of why teachers' use DDDM to guide instruction by examining teachers' motivations. Mandinach and Jimerson (2016) and Henderson and Corry (2020) justified the need for this type of study by explaining that as more districts establish using DDDM as a policy initiative, more research focused beyond assessment data must occur, particularly in understanding teachers' motivation, self-efficacy, attitudes, and efficacy in data literacy concerning DDDM to drive instructional decisions. The information and understanding obtained from this study of teachers' motivation for using DDDM to guide instructional decisions at Midwest City High School might be applied to other schools in the district where teachers use DDDM to drive instructional practices so as to identify and address the internal and external factors affecting teachers' motivation for implementing DDDM. By addressing these factors, the district might improve teachers' motivation for implementing DDDM which can positively influence student outcomes (Abrams et al., 2016; Datnow & Hubbard, 2016; Niemeyer et al., 2016; Neuman, 2016; Schildkamp, Smit et al., 2019; Schildkamp, Poortman et al., 2019; Grabarek & Kallemeyn, 2020; Romero & Ventura, 2020; Schildkamp & Datnow, 2020).).

MCHS recognizes that teachers' need to begin consistently using DDDM to drive instructional decisions to ensure students are provided the best opportunity for increased academic achievement. Determining why teachers at MCHS use DDDM through understanding teachers' motivation allowed the school to provide appropriate support to teachers. Providing support for teachers could result in a positive social change at MCHS by allowing teachers to provide superior, individualized instruction and increasing student outcomes, which can lead to higher post-secondary achievement (Datnow & Hubbard, 2015; Fina, et al., 2018).

Research Questions

Student achievement became an integral component of assessing the success of schools and districts throughout the United States since the turn of the 21st Century (U. S. Department of Education, n.d.). The literature suggests that the use of DDDM to drive instruction positively impacted student achievement (Abrams et al., 2016; Datnow & Hubbard, 2016). While teacher motivation is an important component of DDDM to drive instruction, there is little research on understanding teacher motivation to use DDDM to drive instruction (Mandinach & Jimerson, 2016). This research study provided an analysis of the motivations of teachers of using DDDM to drive instruction at MCHS. In the study, I discovered the internal and external factors that impact teacher motivation to use DDDM to drive instruction, which has resulted in increased student achievement (Abrams et al., 2016; Datnow & Hubbard, 2016; Niemeyer et al., 2016; Neuman, 2016).

The central questions researched in this qualitative study were:

RQ1: How was DDDM being used by teachers at MCHS as perceived by the teachers?

RQ2: What were teachers' motivations for using data driven decision-making to drive instructional practices at MCHS?

RQ3: What were internal and external factors that influence teachers' motivation for use of data driven decision making to drive instructional practices at MCHS as perceived by the teachers?

Review of the Literature

The review of the literature indicated the self-determination theory as the conceptual framework for the study of teacher motivation to use DDDM to drive instruction and suported why this study was a meaningful academic project. I begin by explaining Deci and Ryan's (2000) framework for self-determination theory and why understanding the impact of motivation on implementation of DDDM is important. Furthermore, the review of the literature is focused on describing the importance of DDDM to drive instruction and providing an analytical review of the literature on using DDDM to drive instruction, with a focus on the advantages and disadvantages. There is a lack of research in the last 5 years on understanding teachers' motivation to use DDDM to drive instruction, demonstrating a need for this scholarly qualitative study.

Conceptual Framework

Social cognitive theory (SCT) purposes that human behavior is motivated by interactions between an individual's environment, personal traits, and preceding behavior. SCT provides a broad framework for studying the motivation of individuals for

any action taken and focuses on three modes of agency, direct personal, proxy, and collective agency (Bandura, 1977, 1997, 2001; Rubenstein, et al., 2018). Historically, SCT served as the basis of many studies focused on understanding the motivations of individuals students and teachers in an educational setting (Durksen, et al., 2017). Several theories are interrelated to SCT, including goal setting theory, self-regulation theory, and self-determination theory, with each theory addressing different aspects of motivation. The conceptual framework that structured the study is self-determination theory (SDT).

SDT posits that innate psychological needs for competence, autonomy, and relatedness are essential considerations for understanding human motivations (Deci & Ryan, 2000). Specifically, SDT focuses on autonomous motivation, controlled motivation, and amotivation (Deci & Ryan, 2008). Ryan and Deci (2016) explained that SDT has strong implications in education because of the focus on self-motivation, especially when considering education's focus on academic and behavioral outcomes. The attention on the three psychological needs provides a basis for understanding the invigoration and course of action for individuals (Deci & Ryan, 2000). SDT identifies the existence of both intrinsic and extrinsic motivations and how each effect an individual's actions. Additionally, SDT accounts for the internalization of extrinsic motivation by individuals through five self-regulatory factors: external, introjection, identified, integration, and intrinsic (Ryan & Deci, 2016). SDT provides a broad theory that considers how internal and external variable can impede or accelerate individuals' motivation (Daniels, 2017; Prenger, et al., 2017). Because the theory centers on different

types of motivation and addresses conditions that can enhance or lessen different kinds of motivation, SDT framework has been used increasingly in education to understand teacher motivation (Sanchez-Olivia, et al., 2017; Stupnisky, et al., 2018). Research using SDT consistently use qualitative data collection and analysis methods as the research seeks to understand the types of motivation that teachers experience and how internal and external factors influence these motivations (Daniels, 2017; Prenger, et al., 2017). Therefore, the application of SDT allowed for insight into factors influencing the motivation of teachers in the study.

Review of the Broader Literature

For this literature I reviewed over 30 peer reviewed journal articles and books that focused on, or related to DDDM, implementation of DDDM, pre-service teacher training in using DDDM, and the perils of using DDDM. The search terms I used and phrases I used singularly, or in different combinations, to discover peer-reviewed research conducted in the last 5 years include: *data-driven decision making, motivation, teacher motivation, teacher motivation and data driven decision making, data-driven decision making and student achievement, teacher motivation and student achievement,* and *teacher motivation and data-driven decision making and student achievement*.

The Internet-based search engines and databases I used were: Education Resource Information Center (ERIC), ProQuest, Education Research Complete, Education from SAGE, ScienceDirect, Taylor and Francis Online, EBSCO, and Google Scholar to obtain referenced articles in previously explored articles.

In this section I provided an explanation of DDDM, the benefits of using DDDM, the rationale of teacher's using DDDM to drive instruction, and the potential negative implications of teachers using DDDM to drive instruction This explanation is followed by teacher motivation to use DDDM.

Data-Driven Decision Making. DDDM became prevalent in education in the early 2000s at the national level due to the required academic improvements necessitated as a result of the No Child Left Behind Act of 2001 and its continuation with the Every Student Succeeds Act of 2015 (Schnieder, et al., 2018). The No Child Left Behind Act focused on accountability, resulting in teachers using data based on student responses to standardized tests to modify curriculum and instruction rather than student learning levels (Mandinach & Gummer, 2016a; Neuman, 2016). However, Every Student Succeeds Act of 2015 emphasized the need for educators at all level to use data as a foundation for all educational decision instead of trusting intuition (Farrell & Marsh, 2016; Mandinach & Gummer, 2016). DDDM is an essential practice used by educators at all levels to gather information and modify instruction to assist all participants in education to improve student achievement (Candal, 2016). Educators frequently use data to examine patterns of instruction and strategies to influence decision-making to ensure teachers are meeting the instructional needs of students (Green, et al., 2016; Park & Datnow, 2017). Given federal policy creating an expectation for all school districts to use data to drive instruction and the research indicating the positive impact of using data to drive instruction on student achievement, it is important that teachers effectively implement DDDM in guiding instruction.

Data Literacy. There is clear evidence that supports the assertion that data literacy, and the effective use of data by educators, is essential for positively impacting student achievement (Mandinach & Jimmerson, 2016). Data literacy can also serve as both the main catalyst and obstructer to teachers' use of data to modify and enhance teaching and student learning (Schildkamp, 2019). Evidence exists that teachers possess a deficiency in data literacy which can result in ineffectual teaching and lower student achievement (Sun, et al., 2016). Furthermore, research suggests that individuals in education often believe that useful data only refers to assessment data, limiting the different forms of data available to teachers (Mandinach & Gummer, 2016b). The evidence provided reveals the importance of teacher efficacy in data literacy.

Mandinach and Gummer (2016) identified 53 specific skills necessary for educators to use data into instruction and categorized them into five major components. The five components are:

- identifying problems of practice to frame questions
- use data
- convert data to information
- transform information into a decision
- evaluate outcomes (p. 45).

These major components of data literacy are addressed in the interviews that I conducted with the teachers from MCHS to discover teacher capacity for data literacy and to determine if a lack of capacity for data literacy is an internal and external factor that influences teacher motivation to use DDDM to drive instruction. Daniels' (2017) and

Prenger et al. (2017) cited the effectiveness of SDT to serve as a broad theory to understand the internal and external factors that can inhibit or accelerate individuals' motivation. Deci and Ryan (2016) indicated that SDT can identify both intrinsic and extrinsic motivations and how each can influence individuals' actions, and account for the internalization of extrinsic motivation by individuals. Consequently, understanding teachers' understanding and efficacy of data literacy can help identify internal and external factors that could influence teachers' motivation to use DDDM.

Teacher Preparation Programs. Research suggests that data literacy training should occur during teacher preparation (Mandinach & Gummer, 2016b). Teacher preparation programs also recognize the importance of training potential educators in using DDDM to drive instruction. Teacher preparation programs began to focus on ensuring future educators possess adequate data literacy and have the capacity to engage in DDDM to drive instruction (Mandinach & Gummer, 2016b). Data literacy is not limited to teacher preparation programs, but also during a pre-service teachers' instructional experiences. Reeves' (2017a) study examined pre-service teachers' opportunities to learn to use data during student-teaching, finding that student-teacher opportunities can serve as a source of learning to use data. Furthermore, specific data literacy intervention in pre-service teachers resulted in an increase in participants knowledge and skills of data literacy (Reeves & Honig, 2015). Dunlap & Piro's (2016) findings were like Reeves and Honig's (2015) and stressed the need for teacher preparation programs to provide data literacy intervention to improve self-efficacy of data use as professional teachers. Reeves and Chiang's (2017) research also supported

these findings and revealed that pre-service teachers' perceptions of specific DDDM interventions positively influenced participants' self-efficacy beliefs in DDDM. Odom and Bell's (2017) findings revealed that exposing preservice teachers to intervention and training in understanding and using data to drive instruction, particularly in regard to statistics, can result in decreased anxiety for new teachers.

Teacher Uses of Data

The increased need for data led to several studies focused on how teachers used assessment data. Research revealed that many educators relied on both formative and summative assessment data to inform instruction and support for student learning (Abrams et al., 2016; Park & Datnow, 2017). With the research available, schools should follow specific principles to ensure educators effectively implement DDDM (Datnow, et al., 2017). Sun, et al.'s (2016) research revealed that teachers use data for specific purposes:

- assessing student performance, progress, and generating common assessments
- planning and goal setting
- improving instruction
- identifying students' behavioral or social problems
- communicating with parents (p. 16-17).

The use of data by teachers also impacts how teachers interact with each other in teacher teams. School districts and schools often create data and teacher teams to examine and discuss student achievement data (Datnow, et al., 2018). Teachers in teams tend to

engage in fewer interactions as they progress through phases of the data cycle use, however, each interaction is increasingly more intense (Van Gasse, et al., 2017b). Research findings also suggest that collaborating in teams when examining data can result in increased individual data use (Van Gasse, et al., 2017a). Despite the existence of teacher and data teams, research reveals that different groups of teachers use data in different ways. Vanlommel and Schildkamp (2019) found that while teachers often use the rational process of deliberately and systemically collecting data, interpreting the data based on predetermined criteria, triangulating the data, and searching alternative explanations, many teachers continue to base conclusions on the intuitive process of spontaneous data collection. Wardrip and Herman (2018) suggested that teachers use an interpretive process for using data to drive instructional decisions and supplement this with informal data through observation to fill in gaps in knowledge concerning students' history of work in school to gain broader understandings of the data.

Support for Teachers' Use of Data and Data Literacy.

The drive for school districts and schools to use data to drive instructional decisions created a need for schools to support teachers' use of data through leadership, professional development, and data and instructional coaches to increase teacher capacity in using data to drive instructional changes (Lemons & Toste, 2019; Snyder & Delgado, 2019; Yoon, 2016). Several studies revealed that principals can positively influence teachers' use of data through focused and supportive practices (Grissom et al., 2017; Sowell, 2018; Yoon, 2016). School leadership can also facilitate data teams of teachers that research shows can enhance teachers' use of data (SchlidKamp, et al., 2016).

Filderman and Toste (2018) acknowledged the negative impact that the absence of professional development can have on teachers' capacity to understand and use data. Consequently, it is imperative that school districts, schools, and teachers seek professional development opportunities and interventions as these have proven to positively impact teacher efficacy, ownership, and student achievement (Glover, 2016; Lai & McNaughton, 2016; Young, et al., 2018).

Data and instructional coaches are also valuable supports for teachers using data to drive instructional practices, however the impact of these coaches on teacher efficacy is mixed (Reeves & Chiang, 2018). This inconsistency could be explained because of various factors including coaching approach and teacher experiences (Lemons & Toste, 2019; Reddy, et al., 2019; Snyder & Delgado, 2019). Despite these concerns, research shows that when data and instructional coaches model DDDM, and provide feedback on teachers' use of data to drive instruction, can close instructional gaps and increase teacher efficacy (Glover, et al., 2019; Lemons & Toste, 2019; Snodgrass Rangel, et al., 2016)

Positive Impacts of Teachers Using Data-Driven Decision Making.

The literature provided plentiful evidence of the positive impact of the use of DDDM on instruction on student achievement through both quantitative and qualitative data (Datnow & Park, 2018; Lemons & Toste, 2019; Liu & Koedinger, 2017; Niemeyer et al., 2016). Research findings emphasize the positive impact on several impacts of DDDM across education. Research found that data-driven decision is equivalent to additional instructional time for students exposed to this instructional approach (Abbott & Wren, 2016; Van Geel, et al., 2016).

Research on the DDDM also focused on specific student needs. Douglas (2016) conducted research that revealed that using data to drive instructional decisions allow teachers to influence students' spoken language skills. The results of Douglas' study revealed that effective use of DDDM can help teachers develop effective interventions for students with special needs.

The positive nature of DDDM on instruction is not limited to public schools. Neimeyer et al. (2016) provided an overview of the effectiveness of DDDM to influence student achievement and used the research to promote the use of DDDM in Catholic schools to ensure these schools maintain a viable educational option for parents and their children. Educators also utilized DDDM to enact positive ability grouping in an educational setting. Park and Datnow (2017) conducted a qualitative case study to examine how teachers used DDDM about differentiation and ability grouping. The research findings revealed that teachers' instructional strategies and approaches changed based on the type of data used and can result in additional learning opportunities within the school year.

Potential Negatives of Data-Driven Decision Making.

Gerderblom et al. (2016) conducted a study examining teaches use of data in primary school teachers. The findings of the study revealed that the teachers did not effectively use all data available and were unsuccessful in their analysis of data. Schildkamp et al. (2017) further emphasized the need for districts to focus on using data for instructional purposes to increase student achievement rather than for accountability purposes. A focus on accountability purposes can result in educators using data to teach

to items on standardized tests rather than for developing meaningful instruction (Neuman, 2016). Horaet al. (2017) reinforced the need for teachers to harness data into actionable knowledge to current and future problem and noted that teachers can be positively and negatively influenced in their use of data from external and internal factors.

Datnow et al. (2017) and Gerderblom et al.'s (2016) works both suggested that the misuse of data can negatively influence student outcomes. Additionally, Neuman (2016) also presented a different perspective asserting that the misuse of data can lead to inequity in education for students due to a lack of focus on background knowledge necessary for comprehension for at-risk students. The misuse of data can also demotivate students, create a negative culture of competitiveness, and result in students and teachers focusing on status rather than learning (Marsh, et al., 2016). These articles revealed the need for teachers to consistently and effectively use DDDM to guide instruction to ensure positive outcomes for students.

Keunig et al. (2017) focused on the impact teachers' attitudes can have on the effective use of data to drive instruction, finding that negative DDDM attitudes at both the individual teacher and teacher team levels can impede the effective use of data by teachers. Datnow and Hubbard (2016) also asserts that teachers' confidence is an essential component in using data to improve instruction and that a lack of confidence can result in negative outcomes when attempting to use data to drive instruction. Research also suggests that teachers can reject using data to drive instruction because of a lack of trust in assessment tools used and a preference to examining student data from previous years for fears of developing a bias towards the students (Little, et al., 2019).

Teacher Motivation to Use Data-Driven Decision Making.

Teacher motivation in the context of DDDM centers on the purpose and readiness to use data at some point to drive instruction (Prenger & Schildkamp, 2018). Research also reveals that teachers' motivation for using data is essential in promoting using data to drive instructional decisions and that intrinsically motivated teachers utilize data better (Vanlommel, et al., 2016). Teacher motivation to implement any policy is influenced by numerous factors. Research findings reveal that teachers' beliefs and attitudes about specific policies impact teachers' motivation to implement these policies effectively (Datnow & Hubbard, 2016; Gelderblom et al., 2016; Walker et al., 2016). Mandinach and Jimerson (2016) also revealed that teachers' desire to understand why using data to drive instruction should be expected to cause improvement in student achievement can also impact teachers' use of data. In addition to these findings, Roegman et al. (2019) recognized that teachers that found the data meaningful for work were more likely to engage in using data to drive instructional decisions.

The Superintendent of Midwest City School District, and the principal of MCHS both cited the need to determine why teachers use data to drive instruction. My qualitative study on understanding teachers' motivation to use DDDM to drive instruction at MCHS is necessary to address this gap in practice, determine the internal and external factors influencing teachers' motivation, and discover how to help enhance positive motivating factors and inhibit demotivational factors to ensure teachers consistently use data to drive instruction.

Implications

The literature review provided information on the importance of understanding the internal and external factors that influence individuals, specifically teachers' motivation to take certain actions. This section also provided implications of teachers' use of DDDM to drive instruction on student achievement. It also provided information on the positive and negative aspects of DDDM on teachers and students regarding teacher implementation and the potential positive and negative influence on student outcomes. This information provided guidance for this study as I discovered what internal and external factors influence teachers to use DDDM to drive instruction.

The intention of this study was to create an understanding of what factors, both internal and external, influence teachers to use DDDM to drive instruction at MCHS. This information was used to help the school district, and other schools, to identify barriers to teacher motivation to use DDDM to drive instruction. Additionally, once specific internal and external factors that influence teacher motivation to use DDDM to drive instruction are identified by participants, professional development was created to enhance positive motivating factors and inhibit demotivational factors to increase teacher motivation to use DDDM consistently and effectively to drive instructional practices to increase student achievement.

Since research reveals that teachers with low self-efficacy in using data to drive instruction are less likely to use data, while teachers with high self-efficacy are more likely to use it and use it effectively, professional development could focus on increasing teacher efficacy (Dunlap & Piro, 2016; Filderman & Toste, 2018; Glover, 2016; Lai &

McNaughton, 2016; Mandinach & Gummer, 2016a; Reeves & Chiang, 2017; Reeves & Honig, 2015; Van Gasse et al., 2017a; Walker et al., 2016; Young et al., 2017). An additional area of need that might manifest itself is the need to develop data and instructional coaches to provide focused and consistent support as teachers use DDDM (Glover et al., 2019; Lemons & Toste, 2019; Snodgrass Rangel et al., 2016). These two interventions could lead to a decrease in teachers' anxiety in using DDDM.

Because DDDM is a valuable approach to modifying instruction to serve the needs of students (Candal, 2016; Harshman & Yezierski, 2017), my qualitative study should provide much needed information on understanding the motivation of teachers to use DDDM to guide instructional decisions. Another goal of this study is to identify the internal and external factors that influence teachers' motivation to use DDDM to drive instruction.

Summary

DDDM is widely accepted by educators as an indispensable practice used by educators at all levels to gather information and modify instruction to assist all participants in education to improve student achievement (Candal, 2016; Datnow & Hubbard, 2015; Mandinach & Gummer, 2016a; Neuman, 2016). Teachers' use of DDDM to guide instruction has resulted in increases in student achievement when implemented with fidelity (Abrams et al., 2016; Datnow & Hubbard, 2015; Datnow & Hubbard, 2016; Fina et al., 2018; Niemeyer et al., 2016; Neuman, 2016). Despite this evidence, some studies do suggest that the use of DDDM to drive instruction can result in negative consequences for teachers, students, and schools (Datnow et al., 2017; Gerderblom et al.,

2016; Hora et al., 2017; Little et al., 2019; Marsh et al., 2016; Neuman, 2016; Schildkamp et al., 2017). This indicated that it is necessary to ensure that teachers are trained and supported, and have high self-efficacy, in using data to drive instruction to ensure positive outcomes for all stakeholders involved (Dunlap & Piro, 2016; Reeves & Chiang, 2018). These difficulties as well as other mentioned in the literature review can be addressed through training and support through professional development and data and instructional coaches (Glover et al., 2019; Young et al., 2017).

Teachers' motivation to use DDDM needs to be examined to discover to what internal and external factors influence teachers' motivation to use data to drive instruction. Understanding teachers' motivation, especially when considering education's focus on academic and behavioral outcomes, can help school leadership identify how internal and external variables can hamper or cultivate individuals' motivation (Daniels, 2017; Prenger et al., 2017; Ryan & Deci, 2016). Educational leaders need to understand the different conditions that can enhance or lessen different kinds of motivation as these factors can impact at teachers' efficacy in using data to drive instruction (Roegman et al., 2019; Sanchez-Olivia et al., 2017; Stupnisky et al., 2018; Vanlommel et al., 2016). Thus, there exists a need to understand teachers' motivation to use data to drive instruction and the internal and external factors that influence teachers' motivation.

In Section 1, I provided an explanation of the research problem, the rationale for the study, the significance of the problem, and the research questions that guided this project study. Section 1 also provided a literature review of the conceptual framework that serves as the foundation of the study, and review of the broader problem including

the positive and negative consequences of using data to drive instruction on teachers and students. Much of the literature focused on teacher use of data, the importance of teacher efficacy in using data to drive instruction and the positive outcomes associated with the effective teacher use of data to drive instruction. I end Section 1 focusing on the implications garnered from the literature review for more research concerning teacher motivation to use DDDM and the factors that influence teachers' motivation to use DDDM to drive instruction. Several potential plans were developed, and the data obtained from the interviews determined the selected intervention and its implementation at MCHS.

In Section 2, I present the research design, methodology, procedures, and findings from this qualitative study. Section 3 entails the actual plan addressing teachers' motivation to use data to drive instruction. Additionally, this section also addressed the internal and external factors influencings teachers' motivation to increase teachers' motivation and provide support for teachers' consistent, effectives use of data to drive instructional decisions. Section 4 entails my reflection of the doctoral study process.

Section 2: The Methodology

Qualitative Research Design and Approach

The research design for this study was a basic qualitative study. I chose this design because it encompassed teachers' experiences in using DDDM to guide instructional decisions. Only current teachers at the school site were possible participants for this basic qualitative study.

Problem and Research Design

The problem addressed in this study was that student achievement data on state assessments revealed a negative trend over the past 3 years despite the expectation for teachers to use DDDM to drive instructional decisions. Midwest City School District implemented a policy that teachers use DDDM to guide instructional decisions. The district also facilitated professional development to help increase teachers' data literacy during the 2012-2013 school year. During the 2013-2014 school year, teachers were expected to use DDDM to drive instruction.

Student achievement scores for the 2013-2014 school year increase in all but two tested subjects. However, student achievement scores for the 2014-2015 school year revealed a decline in every tested subject except one. The 2015-2016 school year revealed similar trends for all subjects except for math, which showed positive gains. The inconsistency and decline in student achievement scores caused the superintendent and school administrators to wonder if teachers were effectively using data provided by the state and were consistent in their use of DDDM to drive instructional practices

(Superintendent, Midwest City School District, personal communication, June 27, 2019; MCHS principal, MCHS, August 5, 2019).

I examined the problem and purpose of the study to ascertain which design method would allow for the appropriate collection of data, quantitative or qualitative. Quantitative research designs are employed to understand a phenomenon or problem by testing a theory empirically. Quantitative research designs generally measure variables with numbers that are analyzed to determine if the theory predicts the phenomenon. I sought to understand participants' experiences and motivations, requiring the use of semi-structured interviews, which allows for flexibility in the investigation of new concepts or ideas introduced during the data collection process. Qualitative research designs allow researchers to develop an understanding of participants' experiences of a phenomenon by collecting data using interviews and observations (Burkholder et al., 2016; Yilmaz, 2013). Unlike quantitative research designs, qualitative research designs also use purposeful sampling (Burkholder et al., 2016; Yilmaz, 2013). Consequently, I determined the best approach would be a qualitative research study. Aa a qualitative researcher I obtained an understanding of participants' experiences and motivations to use DDDM to drive instructional decisions to increase student achievement.

Young et al., (2018) used a qualitative research design involving school principals. Young et al., interviewed principals using a semi-structured approach to understand how they use data to drive instructional practices. Similarly, I used a qualitative research design, with semi-structured interviews, to gain an understanding of the teachers' experiences and motivations to use DDDM to drive instructional decisions.

I asked teachers for their experience using DDDM to drive instructional decisions and their motivations, as well as the external and internal factors influencing their motivation, to use DDDM to drive instructional decisions. I believe that this in-depth understanding of teachers experiences and motivations using DDDM to drive instructional decisions could not be obtained using a quantitative research study.

Description of the Basic Qualitative Design

Basic qualitative designs are used to understand people's attitudes, opinions, or beliefs about an experience or phenomenon (Ravitch & Carl, 2016). I sought to understand teachers' motivation for using DDDM to drive instructional decisions at MCHS. I interviewed 11 teachers from MCHS. Interviews continued to occur until data collection achieved research saturation. The questions asked during the interviews focused on the motivations for teachers' use of DDDM to drive instructional decisions and on identifying the internal and external factors that influence teachers' motivation (See Appendix D). In addition to a basic qualitative study, this study could also be considered applied research as the findings were used to increase the consistency of teachers use of DDDM to drive instructional decisions (see Yates & Leggett, 2016).

Justification for the Research Design

Prior to deciding on a basic qualitative design, I considered several different research approaches: narrative, case study, ethnography, phenomenology, and grounded theory. Narrative research seeks to tell the story of the individual participants and focuses on individual experiences in relation to a phenomenon (Burkholder et al., 2016). I determined that a narrative research design did not fit the research paradigm as for my

research I sought to understand teachers' motivation to use DDDM to drive instructional decisions. Case studies require researchers to confine their study to a bounded unit, in the case of my research, a school. A case study could apply to my research because the participants came from a single school, a bounded unit. However, case studies are used to create a comprehensive understanding of a bounded unit using multiple data sources and collection methods (Burkholder et al., 2016; Ravitch & Carl, 2016). Consequently, a case study research design could not apply.

Ethnography was another design considered for the study. Ethnography is like a case study as it requires a bounded unit. However, ethnography's bounded unit must share a similar culture over a long period of time and requires the researcher to become immersed in the culture of the participants (Burkholder et al., 2016; Ravitch & Carl, 2016). I determined that ethnography did not fit the research paradigm necessary to understand teachers' motivation as the focus of that design was culture.

I also considered a phenomenological research design for this study as a phenomenological approach is used to understand participants' lived experiences of a phenomenon (Burkholder et al., 2016; Ravitch & Carl, 2016). Although interviewing participants could reveal their shared experience in using DDDM to drive instructional decisions, I determined this design was inappropriate. For my research I did not seek to understand participants' shared experience in using DDDM but to understand teachers' motivation to use DDDM to drive instructional decisions.

Grounded theory was another potential research design for this study as the main data collection method for this design were interviews. However, the purpose of

grounded theory is ultimately to develop new theories from the phenomenon studied (Burkholder et al., 2016). My research did not pursue the development of new theories, but instead I sought to understand teachers' motivations to use DDDM to drive instructional decisions. Consequently, grounded theory was not a suitable research design for this study.

A basic qualitative research design allowed me to conduct teacher interviews who use DDDM to drive instructional decisions at MCHS. As the researcher, I did not seek to control or inhibit teachers' behavior. However, I pursued knowledge concerning the teachers' motivations to use DDDM to drive instructional decisions. Additionally, this study helped to gain more in-depth knowledge regarding the internal and external factors that were influencing teachers' motivations for using DDDM to drive instructional decisions.

Participants

The participants for this qualitative study were from MCHS, a high school serving approximately 850 students with a teaching staff of 55 certified teachers. The teaching staff consisted of 26 men and 29 women. Seventeen of the teachers had between 1 and 5 years of teaching experience, seven teachers have between 6 and 10 years of teaching experience, 13 teachers had between 11 and 15 years of teaching experience, six teachers had between 16 and 20 years of teaching experience, and 12 teachers had over 20 years of teaching experience.

Criteria for Selecting Participants

Patton (2015) explained that purposeful sampling was appropriate for qualitative studies when the researcher was attempting to gain insights and in-depth understanding from participants. Burkholder et al. (2016) concurred with this citing that purposeful sampling was appropriate when choosing participants when they meet the specific needs for the research study, especially when the researcher was interested in a specific skill. Ravitch and Carl (2016) also cited that purposeful sampling was applicable to qualitative research when the research study requires specific participants who had a certain experience. Because with my study I sought to understand teachers' motivation to use DDDM to drive instruction, I used purposeful sampling to select participants. All potential participants meeting the specified criteria were invited to participate in the study.

Teacher participants must have had at least 2 years of teaching experience at MCHS to ensure they understood the school curriculum and the expectations to consistently use DDDM to drive instructional practices. To develop an in-depth understanding of teachers' motivation for using DDDM to drive instructional practices, participants must have been willing to participate in approximately an hour-long semi-structured interview to provide their perspective of their motivation for implementing DDDM to drive instruction and the internal and external factors that were affecting their motivation (see Rubin & Rubin, 2012). Participants for the study came from multiple disciplines. Interviewing participants from different disciplines revealed to me whether teachers' motivations differ based on disciplines. In addition to this, it allowed me to see

if there were different internal and external factors affecting teachers' motivations according to discipline (see Ravitch & Carl, 2016).

Justification for Number of Participants

Participants in the basic qualitative study were current teachers with at least two years of experience at MCHS. I began the study with a determined number of participants were chosen from the pool of teachers willing to participate in the study. Initially, 10 teachers were chosen for interviews as research. However, further participants were included until enough saturation existed to answer the research questions. Saturation occurred after 11 interviews were conducted as no new information was presented (Rubin & Rubin, 2012).

Saturation is an important aspect of qualitative research as it can ensure content validity of the research (Fusch & Ness, 2015). For instance, Guest et al. (2006) asserted that when using interviews, saturation is achieved at 12 participants. However, Hinnink, et al. (2017) explained that saturation is achieved at nine participants. Burkholder at al. (2016) explained that saturation occurs when no new themes or patterns emerge but simply reinforces previous data. Saturation when using interviews is relative and is achieved when no new information is gained (Rubin & Rubin, 2012). Consequently, the quality and depth of information should determine the point of saturation rather than how many participants were interviewed (Malterud et al., 2016). Burkholder et al. (2016) recommended determining a specific number of participants and allowing for the addition of more participants if saturation does not occur. Therefore, I used the approach recommended by Burkholder et al. (2016) and Malterud et al. (2016) for my study.

***Teacher Participants*.**

The 10 teachers were purposefully selected to participate in interviews from the volunteers. All teachers fitting the criteria at the high school were contacted and invited to participate in the study through email. The participants chosen for the study were the first 10 teachers that agreed to participate in the study. If more than 10 teachers volunteered to participate, I retained the names of those teachers not chosen if a participant can no longer participate in the study and/or if the need arises to add more participants to reach saturation. Vanlommel et al. (2016) explained that teachers' perceptions of internal and external factors can affect a teachers' motivation. Therefore, teachers were asked about their motivation for using DDDM to drive instructional decisions and what, internal external factors influence their motivation to implement DDDM, and how those internal and external factors were affecting their motivation to use DDDM to drive instructional decisions. More teachers' views may be necessary to gain an understanding of teachers' motivation to use DDDM to drive instruction, reach saturation, and finish the study (Burkholder et al., 2016).

The 10 teachers represent approximately 18 percent of the population. I attempted to ensure each gender was represented in proportion to the entire staff. The staff was made up of 55 percent females and 45 percent males. Consequently, I attempted to have five female participants and five male participants. Additionally, I also attempted to include various participants from different disciplines as the study seeks to understand teachers' motivation in the context of the entire school (Ravitch & Carl, 2016).

Procedures for Gaining Access to Participants

I was a high school social studies teacher at MCHS for 11 years and served as department chair for 5 years where I worked with the current superintendent and director of curriculum, while they were both serving as principal and vice principal respectively. The previous relationship allowed me to establish a trusting and positive relationship with both individuals. Ravitch and Carl (2016) noted that in qualitative research, especially where interviews were concerned, trust and reciprocity were both necessary elements. I resigned from MCHS to pursue my career goals on May 28, 2015, thus severing professional ties with the district. I have not had served the district in any capacity for over 4 years. Consequently, there were no conflicts of interest that exist. Following Walden University Review Board (IRB) approval (approval number 9-14-20-0737511), I provided the superintendent and principal with details of my study's purpose, methods, and protections in place to protect participants confidentiality as best as possible I then obtained written permission from the Midwest City School District to conduct this project study (Ravitch & Carl, 2016).

After written permission was obtained, I asked the principal to provide the names and school email addresses of all teachers with at least two years' experience at MCHS. I used the list provided to ask for teachers to participate in my study. I attempted to choose teachers from diverse disciplines that were gender representative of the school site. I provided each teacher that qualified for the study with an official introduction of myself, an explanation of my study, requirements for participating in my study, a request for their participation, the methods for maintaining confidentiality, and my contact information in

an email. Teachers displaying potential interest in participating within 48 hours of the invitation to participate received a consent form and brief demographic questionnaire. Of the teachers that returned the signed consent form and demographic questionnaire, 10 were purposefully chosen to ensure a diverse group of participants were chosen based on gender, discipline, and years of experience in the school district (Ravitch & Carl, 2016). I contacted each participant by phone, email, or in person to select a suitable date, time, and location for the hour-long semi-structured interview outside of instructional time. Participants' choice in the time and location for the interview helped alleviate potential distractions, avoid time constraints, and build trust between the myself and the participant (Burkholder et al., 2016; Ravitch & Carl, 2016).

Researcher-Participant Working Relationship

I informed every potential participant at the start of each interview that I taught at MCHS for 11 years and resigned at the end of the 2014-2015 school year. Participants understood that I am aware of the expectation to use DDDM to drive instructional practices but have not administrative role or authority (Ravitch & Carl, 2016). Burkholder et al. (2016), Ravitch and Carl (2016), and Rubin and Rubin (2012) attest to the importance of building positive relationships and trust between the researcher and participants. Consequently, I fostered a trusting relationship with all teachers during participant selection and work to maintain that relationship during interviews to ensure participants provide sincere responses to interview questions (Rubin & Rubin, 2012).

As a researcher, I functioned as the primary means for data collection and analysis from the interviews with participants (Burkholder et al., 2016). My status as a researcher

was granted by the approval of the school district, Walden University IRB, and the participant signed informed consent forms. The letters of cooperation and informed consent forms ensured that the school district, school, and participants understand the procedures involved in the study, including the choice to participate or stop participating, not participate, and their rights and responsibilities as active participants in this study (Burkholder et al., 2016; Ravitch and Carl, 2016).

As the researcher, maintaining dependability in research to ensure that the data collected is consistent and stable over time. I achieved this by maintaining an audit trail of notes of all the actions taken over the course of the study (Connelly, 2016). Ravitch and Carl (2016) contend that bias exists in all research and all researchers must be aware of their own assumptions when conducting research. I engaged in reflective, self-critical analysis throughout the research process by maintaining memos, field notes, and a journal (Ravitch and Carl (2016).

Protecting Participant Rights

Prior to working on this study, I was required by Walden University to complete The National Institute of Health (NIH) Office of Extramural Research training. I successfully completed the training on "Protecting Human Participants" (National Institute of Health, 2011) and received a certificate of completion (#2504745) as evidence (see Appendix E). The risk to participants was minimal as I have no authority over the teachers, attempts to protect the confidentiality of participants occurred, and no participants were considered members of vulnerable populations (National Institute of Health, 2011).

To ensure the protection of participants, I assigned each teacher participant a pseudonym or code (T1 for teacher one) to ensure confidentiality and collected signed informed consent forms (Roth & Unger, 2018; Rubin & Rubin, 2012). The security of data was also important in protecting participants. As such, all data collected from interviews were coded, kept confidential, and secured on my password protected computer and/or placed in a lock safe in my home (Burkholder et al., 2016; Ravitch & Carl, 2016; Saldaña, 2016). Additionally, all field notes taken by hand were transcribed into a digital copy and the original paper copies were destroyed to mitigate the risk to participants. Each participant also underwent a debriefing process following the interview for the participants to ensure no harm occurred (Rubin & Rubin, 2012).

Qualitative research present unique ethical challenges to protecting privacy because of the nature of the data collected. While qualitative research does pose more threats to security due to technological advances, similar means to protecting participants were applicable to electronic data records. One means of protecting electronic data was to password protect files, replacing participant names with codes and deleting participant names once codes were assigned to protect confidentiality of participants (Kaiser, 2009; Ravitch & Carl, 2016; Saldaña, 2016). The same process was applicable to traditional data collection using a secured storage facility for paper copies instead.

Burkholder et al. (2016) and Ravitch and Carl (2016) emphasized the importance of protecting participants using informed consent forms. In accordance to the advice of Ravitch and Carl (2016), the informed consent form for this study included:

- researcher’s name

- an explanation of the purpose and procedures of the study;
- an overview of participants involvement in the study and expected duration of participation in the study;
- a statement that participation in the study was voluntary and that participants may withdraw from the study at any time or for any reasons, and may choose not to answer specific questions during the interview;
- specific processes that occurred and methods used to attempt to protect confidentiality;
- an explanation of the potential risks and benefits to the participants;
- an explanation that there was no payment for participation in the study; and
- an explanation that the data collected was be used to develop a professional development program around DDDM to drive instructional practices.

Protecting participants from harm was a priority throughout my study. Much of the difficulty in mitigating harm was due to the in-depth nature of data collection methods that require direct interaction between participants and researchers in the form of interviews. A difficulty in qualitative research relates to deductive disclosure, where information in research reports reveal traits of individuals or groups, making them identifiable (Kaiser, 2009; Ravitch & Karl, 2016). To ensure this, I strove to only include information necessary to ensuring the trustworthiness of the study (Connelly, 2016). Additionally, the actual names and pseudonyms were kept on separate hard drives on my password protected computer. Efforts to maintain confidentiality and protect the identity of the school district, school, and participants will occur for five years following the

study. After five years, all data associated with the study, will be destroyed in accordance with Walden University procedures.

Data Collection

I collected data using one-on-one semi-structured interviews with participants. While my study only uses one source for data collection, semi-structured interviews were a common source of data collection in qualitative studies, especially for inexperienced researchers, that can produce rich information concerning a phenomenon from the participant (Burkholder et al., 2016; Ravitch & Carl, 2016). I used the semi-structured interview of participants to discover teachers' motivation for using DDDM to drive instructional decisions and identify what teachers perceive as the internal and external factors affecting their motivation.

Description and Justification of Data Collected

The purpose of this qualitative study was to understand teachers' motivation to use data to drive instruction and to understand what teachers perceive as the internal and external factors affecting teachers' motivation. Therefore, the use of semi-structured interviews with teachers working at the school district were appropriate methods of data collection (Burkholder et al., 2016; Ravitch & Carl, 2016; Rosenthal, 2016; Young et al., 2018).

Interview Data.

Individual interviews provided an in-depth understanding of participants experience than other forms of data collection (Burkholder et al., 2016; Rosenthal, 2016; Yates & Leggett, 2016). Researchers conducting interviews must be mindful of several

factors that could influence participants' responses, including body language, tone, and the construction of questions as these can communicate judgment or lead the participant, which could diminish the integrity of the data (Burkholder et al., Rosenthal, 2016). I employed a semi-structure interview in this study allowing participants to answer open-ended questions without directing participants' answers, while allowing for flexibility and follow-up questions for more in-depth understanding of participants experiences (Burkholder et al., 2016). Additionally, the open-ended questions used in a semi-structured interview protected against potential researcher bias (Babbie, 2017; Burkholder et al., 2016). Each interview operated under the same procedures to ensure dependability in the data collection (Connelly, 2016). The questions asked concentrated on how participants use DDDM to drive instructional practice, participants' motivation to use DDDM to drive instructional decisions at the school cite, and what participants perceive as the internal and external factors that affect their motivation to use data to drive instruction.

All interviews were audio and/or video recorded with participant approval and accurately transcribed. Recording the interviews is a common practice in qualitative studies using interviews as a data collection method as it allows the researcher to become immersed in the data (Babbie, 2017; Burkholder et al., 2016). Recording the data allowed for reference back to the data when necessary and provide for an in-depth understanding of the experience and assists in transitioning to the data analysis stage of the research (Burkholder et al., 2016; Ravitch & Carl, 2016). Furthermore, the interview process accounted for place and time that was acceptable to the participant. This provided

comfort and security to the participant, promote honesty in responses, and allow the researcher to establish rapport with participants (Burkholder et al., 2016). Interviews lasted no longer than 60 minutes and the interview procedures can be found in Appendix D.

Data Collection Instruments and Sources

Below is a description of the source of data collection for my basic qualitative study.

Interviews.

Using a framework provided by Burkholder et al (2016) and Rubin and Rubin (2012), I developed my interview questions and protocols. Interview questions centered on how teachers were using DDDM to drive instructional decisions and their motivations behind implementation of DDDM (See Appendix D). Teachers were also asked about what they perceive as the internal and external barriers that affect their motivation to use data to drive instruction (Dunlap & Piro, 2015; Reeves & Chang, 2017; Sun, et al., 2016).

Sufficiency of Data Collection Instrument.

Individual interviews of teachers' motivation to use data to drive instructional practices provided an in-depth understanding of participants experiences. These teachers' experiences revealed information on how teachers use DDDM to drive instructional practice, their motivations to use DDDM to drive instructional decisions, and the internal and external factors that affect their motivation. Research questions were considered answered when no new themes or patterns emerge, and instead, new information reinforces previous data, denoting saturation has occurred. If saturation was not attained,

I requested teachers that volunteered but were not chosen in the initial purposeful sampling to participate until saturation has occurred or no conclusion was possible from the data (Burkholder et al., 2016; Fusch & Ness, 2015; Malterud et al., 2016).

Process for How and When Data Were Generated and Recorded

After obtaining Walden IRB, district, and principal approval, I began the recruitment process by sending an invitation to volunteer to potential participants by email, phone, or in person. Kirsten and Ravn (2015) noted that recruiting participants can be challenging and time consuming for researchers. However, finding participants willing to engage in the study, collecting signed consent forms and the process for selecting purposeful samples from the group of willing participants should take no more than two months (Kirsten & Ravn, 2015).

Interviews.

Interviews occurred in a one-on-one setting that was convenient in both time and place for the participant outside of instructional time. The semi-structured interviews lasted approximately one hour and were recorded with the participants' permission. Recording the interview allowed me greater focus on the nonverbal cues of the interviewee to identify behavioral and emotional responses and adjust accordingly (Burkholder et al, 2016). I transcribed interviews promptly following the interview to ensure a high level of accuracy (Burkholder et al, 2016; Rubin & Rubin, 2012). I explained the procedure for protecting participants' identities using a nonsequential pseudonym coding system (T1 for teacher one) to all participants (Babbie, 2017; Saldaña, 2016). I was the only individual to know the coding system, which were kept in a secured

file on my password protected computer, to ensure the confidentiality of participants and minimize harm. The audio recordings were digital in nature and kept on my password protected computer as well (Kaiser, 2009; Ravitch & Carl, 2016; Saldaña, 2016).

Creating a welcoming environment, establishing rapport, and developing a trusting relationship with participants in interviews was important to ensure the participant was comfortable as increased stress could influence the behavior and responses of the participant (Babbie, 2017). Dempsey, Dowling, Larking, and Murphy (2016) suggests beginning the interview with reciprocal sharing of personal stories between the interviewer and interviewee and asking general questions to establish a non-hierarchical relationship (See Appendix D**)**. After comfort was established, I began audio recording with the permission of the participant. I began by asking prepared questions on how the participants used DDDM to drive instructional practice, their motivations to use DDDM to drive instructional decisions, and the internal and external factors that affect their motivation. Throughout the duration of the interview, I used probing questions to gather more in-depth information from and clarify information provided by the participant. Additionally, I was also attentive to the behavior, emotions, and body language of the participant to ensure the accuracy (Burkholder et al., 2016; Rubin & Rubin, 2012).

Burkholder et al. (2016) explains that probing, or follow up questions, should be related to the initial response from the participant and may not be appropriate for all participants. I created a set of predetermined probing questions (See Appendix D**).** I also develop probing questions depending on the course of the interview (Burkholder et al.,

2016). However, probing questions were kept at an appropriate number as to not diminish of disturb the course of the interview (Rubin & Rubin, 2012).

Tracking Data from Instruments and Emerging Understandings

I created spreadsheets from each interview to track data using codes and pseudonyms (Saldaña, 2016). Interview data was analyzed and individually coded using predetermined codes on the spreadsheets for teachers' motivations for using DDDM to drive instructional practices (Saldaña, 2016). Emergent coding occurred as new motivations were identified while analyzing interviews (Saldaña, 2016).

A separate data spreadsheet was created for the internal and external factors affecting teachers' motivation to use DDDM to drive instructional practices. Emergent coding occurred as new internal and external factors affecting teachers' motivation (Saldaña, 2016).

An audit trail was kept throughout the research process that recorded all decisions to ensure a credible record of how the study was conducted and how the data was analyzed was recorded (Babbie, 2017; Burkholder et al., 2016; Connelly, 2016). Research logs were kept throughout the process to serve as a means of information when I am unable to immediately update my audit trail (Burkholder, 2016).

Gaining Access to the Participants

It was essential that the participants in the study were from diverse disciplines that were gender representative of the school site. This provided more in-depth understanding of teachers' motivation for using DDDM to drive instructional practices and the internal and external factors affecting teachers' motivation to use DDDM to drive instructional

practices within the context of the entire school site. Consequently, teachers from diverse disciplines were recruited to participate and share their experiences. I contacted the principal of the school to obtain email addresses for potential teacher participants.

Role of the Researcher

I previously served as a social studies teacher, mentor, and department chair at MCHS for 11 years and left the school district to pursue my career goals at the end of the 2014-2015 school year. Because of my previous tenure at the school, I must be mindful of the potential for bias concerning the teachers and their use of data-driven decision making to drive instructional practices and bracket those biases, personal experiences, and beliefs to protect the research process (Burkholder, 2016). I identified the following personal biases that I bring to the study. These biases were DDDM was a more effective approach to guiding instruction than intuition; DDDM results in greater academic achievement for students than decision making based on intuition; and it was necessary to provide a framework and support for teachers to effectively use DDDM to guide instruction.

Recognizing these biases requires me to be transparent during the data collection process to understand the motivations and perceptions of the participants without my bias influencing responses. Burkholder et al. (2016) cites the need for researchers to recognize the inherent bias that exists in qualitative research as it can threaten the validity and confirmability of the study. I ensured to ask for clarification of a response I view as unclear to safeguard against any misinterpretation of the participants' responses.

Additionally, member checking occurred to allow participants to review a summary of the transcripts and conclusions for validation (Burkholder et al., 2016).

During the interviews I strove to protect the integrity of the data. It was essential that I be mindful of my posture, tone, or subtle facial expressions as these cues can potentially influence the participants responses (Burkholder, 2016). This was particularly important when participants provide responses to ensure they feel comfortable throughout the interview process (Burkholder et al., 2016). Furthermore, I must recognize that some information provided to the participant and anticipate potential emotional responses to difficult questions (Dempsey et al., 2016). I must also be mindful of the language used in the interview questions as they can reveal biases or place participants under undo pressure (Babbie, 2017; Castillo-Montoya, 2016). Failing to protect the research process from my biases could result in an invalid research study. One way I mitigated bias was to engage in external interviews with nonparticipants that can assist in revealing any bias in research questions and provide feedback concerning my posture, tone, or subtle facial expressions during their responses to ensure participants influence the research (Burkholder et al., 2016).

The comprehensive understanding of DDDM and teacher motivation from the literature review and my professional experience benefited the research conducted. However, it was imperative that my understanding does not influence or affect the analysis of data collected (Burkholder et al., 2016). I must first develop an awareness of the existence of this bias and adhere to recognized data collection and analysis methods (Babbie, 2017; Ravitch & Carl, 2016). I also maintained a journal to track my feelings

before and after interviews to ensure my values and feelings do not bias the research (Ravitch & Carl, 2016). Furthermore, I maintained an audit trail to record all decisions throughout the research process to ensure the study was conducted and data was analyzed free from bias (Babbie, 2017; Burkholder et al., 2016; Connelly, 2016).

Data Analysis

Saldaña (2016) explained that the analysis and interpretation of qualitative data is organized into specific steps: collecting and organizing the data, coding the data by hand and using spreadsheets, and explaining the themes and categories derived from the data. In this section, I explained how I analyzed and interpreted the data using these steps.

How and When the Data Was Analyzed

All data collected from the interviews, including the transcripts and notes taken throughout the data collection process were coded to discover any possible themes, patterns, and categories to develop visual description of the data for ease of identification and revision when necessary (Burkholder et al., 2016; Ravitch & Carl, 2016). The coding of data occurred promptly after the transcription of each interview was completed. Coding allowed for the classification of data into similar and/or contrary themes and to verify if research questions were answered using the data. If research questions were not answered, further data collection occurred by revising interview questions or inviting additional participants from the pool of participants that volunteered but were not chosen during the initial purposeful sampling (Yates & Leggett, 2016). Code mapping assisted in identify the themes and categories, enhancing the credibility and trustworthiness of the study (Saldaña, 2016). After these themes and categories begin developing, participant

responses were placed on a spreadsheet under the appropriate emergent and/or predetermined code.

I used spreadsheets to organize the data under the headings of themes, teachers. motivations, internal factors, and external factors. Participants' answers to the same interview questions were placed under the general headings. This allowed for determining similar and/or contrary themes (Saldaña, 2016). All data was coded by hand then transferred to a spreadsheet for ease of organization and the relative size of the project study (Saldaña, 2016).

Coding Procedures

To ensure transparency in the study, a coding dictionary was developed throughout the research process to record predetermined and emerging codes with explanations of what these codes represent (Vaughn & Turner, 2016). The thematic codes were developed using participants perspectives and actions, and because thematic coding prioritizes the participants' responses and consisted of a two to five-word description of the theme (Saldaña, 2016; Vaughn & Turner, 2016). Themes were organized and numerically categorized providing specific numbers for each code on all collected data (Burkholder et al., 2016). The development of subcodes could occur within thematic coding (Saldaña, 2016). The coding emphasized teachers' motivations for using DDDM to guide instruction and the internal and external barriers that affect teachers' motivations. After completing the data collection and coding, I examined the codes representing the different themes derived from the data to merge the codes into three to ten themes (Saldaña, 2016). These three-to-ten themes derived from the data resulted

from statements made by multiple participants and were unique, expected, or contrary to other themes (Castleberry & Nolan, 2018; Saldaña, 2016; Vaughn & Turner, 2016). Following the refinement of the code list into three-to-ten categories, I recoded the interview transcripts to check the accuracy of the coding and developed themes (Saldaña, 2016).

Individual interview transcripts contained no personal information of the participant. Interviews were labeled using participants' pseudonyms, date, and time of the interview (Ravitch & Carl, 2016). After an interview was transcribed, I carefully read each line and add numerical coded thematic codes (Babbie, 2017; Burkholder et al., 2016; Ravitch & Carl, 2016; Saldaña, 2016). The same process occurred after the transcription of each interview.

Evidence of Quality of Procedures.

During the entire research process, I was cognizant of my observations and experiences, thoughts and feelings, and biases concerning to benefits of DDDM to guide instruction to positively impact student achievement, and biases against the use of intuition to drive instructional practices (Burkholder et al., 2016). Member checking also occurred to allow participants to review a summary of the transcripts and conclusions. This ensured an accurate interpretation of the participants' motivations for using DDDM to drive instruction and perceptions of the internal and external factors affecting their motivation for internal validation. The use of member checking was another means to ensure I used an unbiased, reliable and valid research design (Burkholder et al., 2016).

Transcription of the digital audio recording of the interviews, with participants' permission, occurred using a password protected computer with the digital audio recordings kept on my password protected computer as well (Kaiser, 2009; Ravitch & Carl, 2016; Saldaña, 2016). This ensured a chain of evidence was established while protecting the confidentiality of participants to minimize harm (Burkholder et al., 2016; Ravitch & Carl, 2016; Saldaña, 2016).

The findings of this study could be transferable (Connelly, 2016) or beneficial to other schools within the district and state that require teachers to use DDDM to guide instructional decisions. These schools may assign the insights from the perspectives of teachers at this school site and apply them to their schools. This study could also assist in identifying ways to help school districts to increase teachers' motivations to use DDDM to guide instructional practices and identify the internal and external barriers affecting teachers' motivations.

Limitations

Limitations were weaknesses that exists within and research study design and methodology (Burkholder et al., 2016). This basic qualitative study occurred in one medium-sized high school in the Midwestern United States which may not be representative of all medium-sized high schools. Additionally, the state of Oklahoma changed their standardized assessments, which could account for some decline in student achievement apart from teachers' use of DDDM to guide instructional decisions (Oklahoma State Department of Education, 2021). Despite Boddy's (2016) assertion that sample size was contextual, and a sample size of one could be justifiable, the small

sample used in this study could be considered a limitation (Malterud et al., 2016). Another limitation of the study was the inability to establish common internal and external factors affecting teachers' motivation to use DDDM to guide instruction. Research was also conducted by a first-time researcher.

The lack of experience in conducting academic research also served as a limitation. The absence of pilot testing, or an expert panel, could also serve as a limitation for the study. A final limitation of the study was that a singular method of data analysis was used when more finite coding could have resulted in more information.

Data Analysis Results

The purpose of this study was to understand the reasons and motivations behind why teachers use DDDM to inform instruction to help administrators understand why teachers use data to drive instruction, to help identify teachers' motivations behind their use of data to drive instruction, as well as the internal and external factors affecting teachers' motivations to ensure teachers were meeting the district expectation of consistently using DDDM to drive instruction. The findings from this study developed from one-on-one semi-structured interviews. The data collected from these interviews provided an in-depth understanding of teachers' perspectives, knowledge, and readiness to use data to drive instruction. Analysis of the interviews yielded 24 codes. After identifying the 24 codes, I organized the codes into categories developing seven themes to address the research questions. The research questions related to teachers' use of DDDM, their motivation to use DDDM to drive instructional practices, and the internal

and external factors influencing teachers' motivation to use DDDM to drive instructional practices.

Table 10

Research Questions, Themes, and Codes

Research Questions:	Themes	Codes
1. How was data driven decision-making being used by teachers at Midwest City High school as perceived by the teachers?	1. Identifying Areas of Weakness	INST, NTAI
2. What were teachers' motivations for using data driven decision-making to drive instructional practices at Midwest City High School?	2. Instructional and Teacher Efficacy	STRAT, POSP, IMP, INST
	3. Dehumanizing and Lacking Legitimacy	NEGP, FOT, DATAF
3. What were internal and external factors that influence teachers' motivation for use of data driven decision making to drive instructional practices at Midwest City High School as perceived by the teachers?	4. Lack of Administrative Leadership	DATAP, NDATA, DATAUSE, STAND, ADMIN, LOCF, DATAF
	5. Lack of Dedicated Time	DISC, COVID
	6. Lack of Training	NOTR, TRAIN, TIME, NOEMP
	7. Low Sense of Teacher Self-Efficacy	DIFF, DATAC, LOKN, LEFF

Note. Participants' teaching discipline and years of experience.

The seven themes influenced each other. Teachers believed that DDDM to drive instruction was a positive force and can be used to improve instruction and student performance. However, teachers believed there was a lack of administrative leadership and support for teachers using DDDM, which led to a negative sense of self-efficacy in teachers in using DDDM to drive instruction and a negative perception of DDDM as a process, resulting in inconsistent use of DDDM to drive instruction throughout the school building. The teachers believed that more training in DDDM and dedicated time in using DDDM were needed, which could lead to increased teacher buy-in and more consistent

use of DDDM to drive instructional changes. This section was arranged by research questions and the significant themes that emerged within each research question. The first theme addressed Research Question 1, the second and third themes addressed Research Questions 2 and 3, and the fourth, fifth, sixth, and seventh themes addressed Research Question 3.

Research Question 1

How was data driven decision-making being used by teachers at MCHS as perceived by the teachers? Based on the findings, the teachers generally used DDDM in a very limited manner. The teachers primarily used DDDM to determine areas of student weakness.

Theme 1: Identify Areas of Weakness

The teachers were asked how they use data to drive instructional decisions. All teachers recognized the benefits of using DDDM. Almost all teachers used DDDM to identify topics and concepts within their given discipline where students exhibited weak performance. T1 stated, “I have actually focused more of my time and attention on or in the areas of poor performance.” T6 explained, “I can look back at what my kids didn’t know and know what they’re weak on to go forward.” T7 replied, “You know, I just look at what they did poorly on and remediated.” T9 similarly expressed, “That helps me to know, hey, I really need to go back and cover these particular concepts.” These responses revealed that the teachers recognize the value in DDDM.

Despite the teachers’ acknowledgment of the value in DDDM, fewer teachers used it beyond identifying students’ areas of weakness to provide remediation. Most

participants demonstrated the willingness to use DDDM to guide instruction within a given lesson or for future planning. However, the capacity or willingness to use DDDM for more than identifying areas of student weakness existed in only 46% of the teachers' responses. The teachers expressed how useful data was in identifying areas of student weaknesses but did not report using DDDM to guide instructional or curricular decisions. Of the 46% of those teachers that cited using DDDM for other means outside of identifying areas of student weaknesses, only once did a commonality appear in the use of DDDM. Three teachers explained using DDDM as a reflective tool on instructional approaches. T5 explained, "we started analyzing how we're teaching instead of what we're teaching." T8 stated, "I have to change gears because…whatever I'm doing is not hitting everybody the way I think it should be." T9 explained "I use it as a reflective tool for myself and my approaches and teaching…I try to do new teaching strategies." The limited use of data to assessing students to identify areas of weakness reveals a gap in the use of data by teachers at the school as most teachers were not using DDDM to plan and set goals for lessons, improve instruction, or generate common assessments (Sun et al., 2016).

Research Question 2

What were teachers' motivations for using data driven decision-making to drive instructional practices at MCHS? The results of the data revealed that the teachers believed that DDDM resulted in increased instructional and teacher efficacy (Theme 2) based on teacher experiences. This belief represented a positive motivating factor for teachers to use DDDM to drive instructional decisions. The teachers also believed that

DDDM was dehumanizing students and lacked legitimacy in their school and district (Theme 3) because of teacher exclusion and a focus on data rather than the student. This belief represented a negative motiving factor for teachers to use DDDM to drive instructional decisions as evidenced by T6, who expressed that the negative perception of DDDM by teachers at the site has diminished the use of DDDM by teachers.

Theme 2: Instructional and Teacher Efficacy.

Instructional Efficacy. Effective use of DDDM to guide instruction can result in increased instructional efficacy and student outcomes. T1 expressed that DDDM assisted in focusing instruction on areas where students performed poorly. T5 cited, "to a person, everybody (in the department) who has been on the front line doing this work does not want to give it up. It's been very worthwhile." T10 explained, "I think the outcome has been a lot better." T6 added. "I definitely see the value in it (DDDM)." Despite some negative feelings towards DDDM, T1 explained, "it's hard not to when you have that information directly in front of you saying the majority of your students struggle here. It's hard not to focus on when you see that." Consequently, all teachers except for one believed that using DDDM to guide instructional decision led to increased instructional efficacy, thus serving as a motivating factor for teachers in the school to use DDDM to drive instructional practices.

Teacher Efficacy. Many teachers indicated the belief that using DDDM also increases teacher efficacy. T2 said, "I can be more fair when I have something data driven other than just my opinion." T3 also cited the importance of DDDM citing, "I think that it has a big impact on future decisions." T4 explained, "…you can't be a better

teacher if you don't know what you're doing…I would have to use some kind of data driven teaching because…its better for me." T5 cited, "the data we collected…has put us in a place where we understand the need to start where the students are…without that data, none of this would have occurred. T8 expressed, "you have to get into a habit of trying to do that (DDDM) to be a better teacher. T8 goes further stating, "I don't think you can be an effective teacher if you don't look back at your data." T9 explained, "For me, that probably was the most impactful thing I have done based on data driven decisions…and that probably has shown the greatest growth." Thus, most teachers recognized that DDDM increased teacher efficacy, which positively motivated teachers to use DDDM.

Theme 3: Dehumanizing and Lacking Legitimacy.

Dehumanizing. Many teachers suggested that while DDDM can be a positive force, it dehumanizes stakeholders, eliminating the relationships between teachers and students. T1 cited that it makes teachers, "overly focus the data as opposed to focus, or we lose focus on the people to some extent." T2 further elaborates this explaining, "The reason I do this is for the kids, because I don't think its fair to talk about which kids are scoring what or even what classes are scoring what. I don't think it's fair to label the kids before everybody gets the chance to have them in class for a while." T7 explained that the experience "has been frustrating" and feels like "we're removing any of the interpersonal contact that makes teaching so effective." T7 expounds on this more stating, "I feel like its part of a general kind of dehumanization of the classroom…where we want to become data producers on the students." Teachers' belief that DDDM dehumanizes

stakeholders resulted in less motivation for teachers to use DDDM to drive instructional practices.

Lacking Legitimacy. Many teachers suggested that the use of DDDM in the school lack legitimacy. This belief was a result of several factors. Some teachers cited the lack of teacher involvement in the DDDM process. T3 explained, “I think to point back to what I had originally talked about with teachers not being involved, if they’re not involved in that process, then the data is meaningless.” T5 stated, “I think some people resent having to give a test that someone else wrote.” The perception that teachers have little involvement negatively impacted teachers’ motivation to use DDDM to drive instructional practices.

Teachers also cited a lack of faith in the validity of the data collection and distribution process. T3 explained, “You know, the common assessment stuff is, it’s frustrating for a lot of teachers because it’s one more test.” T9 cited, “teaching to the test is just the way it is in education when there’s a test.” T5 also raised concerns on the validity of data explaining, “I feel that I have a person who puts his finger on the scale when it comes to assessments because he knows they’re going to be shared. So I have reason to believe that the answers to those tests end up on the board somewhere. So I don’t know how valid the data is across the board.” T7 reinforced this sentiment explaining, “Yes, (there exists a lack of legitimacy to DDDM) because we often never hear anything back. T6 further highlights this sentiment stating, “If you’re not going to make it worth my time, then why am I doing it?” The perceived lack of legitimacy to DDDM in the school negatively impacted teachers’ motivation to use DDDM to the point

that teachers' use of DDDM has diminished. T6 explained that the experience with DDDM at the school has diminished the use of DDDM to drive instruction.

Teachers at MCHS experienced both positive and negative motivation to use DDDM to drive instructional practices. Attention to teachers' motivation is important because it can impact teachers' implementation of DDDM (Datnow & Hubbard, 2016; Gelderblom et al., 2016; Walker et al., 2016). Teachers recognition that DDDM can increase teacher and instructional efficacy could increase motivation to use and promote DDDM, resulting in increased intrinsic motivation to use data with greater efficacy (Vanlommel et al., 2016). However, equally important were the negative motivation teachers experienced at MCHS. The perception of teachers that DDDM lack legitimacy could result in teachers' being less likely to engage in DDDM to drive instructional practices.

Research Question 3

What were internal and external factors that influence teachers' motivation for use of DDDM to drive instructional practices at MCHS as perceived by the teachers? Based on the findings, multiple internal and external factors influenced teachers' motivation to use DDDM to drive instruction. The results of the data indicated that teachers perceived a lack of leadership and support by the administration (Theme 4), a lack of dedicated time (Theme 5) and lack of training (Theme 6) necessary to effectively engage in DDDM. Teachers also expressed a lack of efficacy and self-efficacy (Theme 7) in using DDDM to drive instructional practices.

Theme 4: Lack of Administrative Leadership and Support

Administrative leadership and support can positively impact and enhance teachers' use of DDDM to drive instructional practices. Most teachers believed there existed a lack of administrative leadership and support for the use of DDDM to drive instructional practices.

Teachers cited the lack of administrative leadership and support in common assessments. T3 cited that "they (administration) haven't really made a big push about it (benchmark testing)" and that "there's not really a big push to develop those (benchmarks) ourselves." T3 further explained, "if it's not something that they feel like is going to benefit them in that school year, then sometimes I think that gets pushed to the back burner. "Additionally, T4 stated "this (benchmark testing) had nothing to do with the local administration, or I don't even know if anybody else knows we're doing it," and further explained, "(the administration) expect us to have some kind of measurable assessment technique, but they don't require how It should be for (my subject)." T6 remarked, "but why would I want to expand that out of my classroom for the district when they're not going to do anything with the data?" T6 further explained, "And that's what most teachers feel about the benchmarks anyway, is why are we bothering? Nobody's even looking at the data." T11 said, "I mean, they (administration) pretty much have not really asked us to take a lot of information." T10 also expressed similar experiences explaining, "that (using DDDM) is kind of left up to our own selves to work on that more." T9 also explained, "it's (DDDM) something that we have done just by research and stuff that we've done on our own. In addition to this, the lack of

administrative leadership and support for common assessments led to a negative perception of common assessments by some teachers. T6 viewed benchmarks as just another "hoop to jump through." T7 explained, "I don't believe in benchmark, honestly." T7 further states," It's (benchmarks) are used to shift blame to teachers…used as a coercion tool…for me when they want me to do something different. So, its used as a way to manipulate teachers."

Some teachers cited that the lack of administrative leadership and support also included the data made available to teachers. While some data were provided to some, teachers expressed the data was irrelevant, useless, or simply did not have access to any data. T1 stated, "There is a lot of data out there, and…it seems like every year, the focus changes." T5 explained, "The data from the OECD in terms of (our subject area) and as it compares to what we are teaching locally isn't sufficient." T6 said, "We had trouble getting some data. Again, it was making the district understand that we needed those at the breakdown of those. Nobody knew where to find them." T7 explained, "I would like more relevant data. Relevant, useful data that's collected in an objective way." In some instances, no data is provided to the teachers. T4 cited that "the administration does not provide any data to me on my subject matter…I kind of drive my own data." T11 explained, "they'll ask us up here, but we never see the outcomes (of data collection)."

Teachers also cited a lack of administrative leadership and support in promoting DDDM. While teachers were expected to use DDDM by the district, teachers expressed that the administration either impeded or failed to prioritize teachers' use of DDDM to drive instructional practices. T2 expressed, "The difficulty can be, it hasn't been in a

while, but it has been at the administrative level." T3 explains, "It's really hard to get them (9th grade teachers)…to understand why this (DDDM) is such a big thing or why we want to use this type of instruction or practice. And sometimes it's hard when it's just one of your colleagues and not someone that's doing something with your evaluation." T4 stated, "(the administration) never asked me to do it (use DDDM). They leave it up to me." T5 explained, "the data analysis is always left to us at the department level…to be done in the CAMM meetings, which are…a 25 minute meeting." T6 also stated, "I think that this district isn't looking at the data that's provided through research to drive curriculum decisions." Thus, all participants cited that there was a lack of administrative leadership and support for the use of DDDM by teachers to drive instructional practices. Research shows that school-level administration can have a large influence om teachers' use of data (Lemons & Toste, 2019; Snyder & Delgado, 2019; Yoon, 2016). Consequently, this perception of a lack of administrative leadership and support could negatively influence and diminish teachers' use of data to drive instructional practices (Grissom et al., 2017; Sowell, 2018; Yoon, 2016

Although all participants noted there was a lack of administrative leadership at the school-level, some teachers did recognize that there was administrative leadership at the district-level. T8 explained that "we have our cheerleader…it's our curriculum director and she is very good at that." T9 shared similar sentiments citing that, "(the curriculum director) did it (taught DDD)…and they would take the data and would help say these are some of the things that we could emphasize a bit more." Additionally, T8 stated that "(the superintendent) did listen to us…he has gotten better at that."

Theme 5: Lack of Dedicated Time

Adequate time dedicated to the practice of DDDM is essential for teacher to engage in DDDM to drive instructional decisions with fidelity. Most teachers cited the lack of dedicated time as the greatest impediment to using DDDM to drive instruction. T1 explained, "…the biggest issue would be time constraints…it'd be more helpful to have just your departments have more time." T4 explained that, "sometimes it's hard to take time to really look at and evaluate what they are learning." T5 expounded on the problem of lack of time as well stating, "Time is certainly an issue…it would have taken hours at least to pour through that data and pull out the appropriate pieces." Similarly, T6 cited, "I wish I had more time to analyze the data. I would like to have delved into that data a lot more than I had time to." T6 goes on to state, "Well, time is always an issue. So, we're not given a time during our day where we can sit down and actually analyze the data." T11 response shared similar sentiment and stated that, "yes (time is the biggest inhibitor." Other teachers approached the lack of time from a collaborative perspective. T3 explained, ""it's just hard to find time...but I think, the biggest things are just time, like that's what keeps it from happening more often. I mean, now we're down to 30 minutes for CAMM, and so…time is just a big issue." T8 stated, "we need time as a group to break that down, and you know, you can't do it in 10 minutes." Like T3 and T8, T9 expressed similar frustration and stated, "It's hard to have that (DDDM) when you don't have the time to have the collaborative piece." Consequently, nine of the 11 participants all expressed the need for more dedicated time to engage in the DDDM process, which could enhance teachers' use of data (Schlidkamp et al., 2016).

Theme 6: Lack of Training

All participants indicated that a gap in district-provided training in the use of DDDM existed for schoolteachers. However, there were inconsistencies in the time since teachers previously received training. Although T2 was not definite on the last time the district offered training in DDDM, T2 stated, “I am going to say two years ago” regarding the last time they received training. Three teachers cited that the last time they received training was over five years ago. T3 cited, “I think it was like 2014. I’m thinking, I don’t think we’ve had another one. I think that’s the last time.” T8 explained, “Since then (2014), we really have not had anybody that’s broken down everything in groups. Despite this assertion, T8 also stated, “But it’s not really training. It’s just giving us information.” T9 shared a similar experience as T3 and T8 stating when asked the last time the district offered training in DDDM, “Not really. So, this is probably like 2014, or 2013, probably my first year or two of teaching.” Six teachers explained that they never received any training in using DDDM to drive instruction. T4 stated, “I wouldn’t say I’ve ever received training. It’s mostly from experience, my own personal experience…mostly from trial and error in my experience. I don’t remember receiving any professional development like that.” T5 also received no training in DDDM within the district. When asked about district-offered training in DDDM, T6 responded stating, “No.” Similarly, T7 said, “No, I mean, never. I understand, intrinsically, the need to look at the areas of students perform the worst on and find things to build those up.” T10 stated, “I can’t say I have. So, I would say that that’s (DDDM) mentioned. I don’t know that we necessarily

go over actual instruction of it every year." Similar to T10, T11 stated, "No, I wouldn't think so now."

Teachers also recognize the need for, and benefits of, training in the use of DDDM. T4 explained, "So the training in those things (Google Forms and Google), to break down data, have helped me." T5 also explained that departmental training occurred from entities outside the district assisted the department in using formative assessment data to pivot instruction. T6 said, "I'd probably see that as a worthwhile professional development (using DDDM) …if I was empowered with the ability to make decisions based on that data in my classroom. T7 stated, "It needs to be more…integrated data collection and training with well-trained people on both sides, you know, helping each other implement it (DDDM)." T9 explains, "Yes, I think that we need training, I think that we absolutely do need that training."

Thus, all participants cite the absence of any recent district-offered training in using DDDM. The lack of training in using DDDM negatively impacts teacher efficacy in using DDDM to drive instructional decisions. Furthermore, many teachers recognize the benefits of, and need for teacher training in using DDDM to drive instruction, as the lack of professional development can negatively impact teachers capacity to use and understand data (Foster & Toste, 2018; Glover, 2016; Lai & McNaughton, 2016; Young et al., 2018).

Although all teachers cited the absence of district-offered training in DDDM, some teachers had received training outside the district. T5 explained that training in

DDDM occurred “outside (the district) …it’s been almost a decade.” T8 also cited that they received “training for our (technology) …that we go now specifically for data.”

Theme 7: Low Teacher Self-Efficacy

Teacher self-efficacy is an important variable in effectively implementing DDDM. A lack of self-efficacy in DDDM can result in ineffective teaching and student learning. Many teachers indicated a low sense of self-efficacy in using DDDM. T2 explained, “I think sometimes people focus on little things on each little subgroup…and when we get hung up on those little subgroups, we’re cutting the kids short on what they should be towards the end of the year.” T5 stated, “now we are a little unsure as to how to proceed to the next step. Locally, as a department, I think the difficulty came from knowing how to put together and analyze the data effectively. Certainly, skills in data collection is an issue as well.” T7 explained, “You know, there are people that evaluate educational data, and nobody hires those people for the district. And so, we’re all kind of left to sit and try to figure out how to do this on your own.” Similarly, T8 explained, some people may not know how to understand how to break all that stuff down, I mean, if you haven’t done it in a long time, you forget how to do that. So, for us, we haven’t done it in a while. T9 expressed, “on a personal note, it’s just finding accuracy of the data, making sure I’m having good quality questions that really test the data and test the knowledge. How can I ask the right types of questions to understand and drive the data accurately?” T10 expressed, “The hardest part for me would be being able to scale it…in a grading scale type format as far as that goes.” Many teachers recognized a low sense-of self-efficacy or efficacy in other concerning using DDDM to guide instructional

practices. This can result in negative outcomes when teachers attempt to use data to drive instruction with low self-efficacy (Datnow & Hubbard, 2016).

Evidence of Quality

I used member checking to ensure the accuracy of interview transcripts. Member checking is a process used in qualitative research that allows participants to review their interview transcripts for accuracy. (Burkholder et al., 2016; Ravitch & Carl, 2016). Participants reported that the transcription of their interviews were accurate and reported no inaccuracies.

Summary

The purpose of this basic qualitative study was to understand the reasons and motivations behind why teachers at MCHS use data-driven decision making to guide instruction and the internal and external factors that affect these motivations. The conceptual framework that structured the study was self-determination theory.

The sample was 11 public school teachers at MCHS that met the study's criteria. The teachers were knowledgeable of the school districts expectation that teachers use DDDM to drive instructional decisions. Table 1 shows the participant teachers' subject area and years of teaching experience.

Table 11

Participants Teaching Discipline, and Teaching Experience

Participant	Subject area	Teaching experience (years)
Teacher 1	Language Arts	5
Teacher 2	Social Studies	20
Teacher 3	Language Arts	10
Teacher 4	Electives	6
Teacher 5	Mathematics	29
Teacher 6	Mathematics	19
Teacher 7	Language Arts	7
Teacher 8	Mathematics	16
Teacher 9	Electives/Science	7
Teacher 10	Electives	10
Teacher 11	Electives	27

Note. Participants' teaching discipline and years of experience.

All data was collected using one-on-one semi-structured interviews. Analysis of interview data resulted in identification of emergent themes. I justified the qualitative research design and methodology in Section 2.

The first theme was that teachers used DDDM in a limited manner. Most teachers did use DDDM in some capacity. Despite this, teachers' use of DDDM to drive instructional decisions were limited to assessing students' understanding of concepts and content to identify areas of student weakness. Consequently, teachers used the information derived from the DDDM process primarily for remediation purposes.

The second theme was that teachers were motivated to use DDDM because of the belief that DDDM increased instructional and teacher efficacy. All but one teacher participants recognized that effective instruction must include some form of DDDM to drive instructional practices. Furthermore, most teachers also believed that effective teaching must also include using DDDM to drive instructional decisions. Almost all

participants recognized the benefits of using DDDM to drive instruction and expressed a desire to engage in DDDM to drive instructional practices.

The third theme was that teachers were also not motivated to use DDDM because of their perception that DDDM was dehumanizing and lacks legitimacy. Teachers viewed DDDM as focusing too much on the data which negatively impacted interpersonal relationships between the teachers and the students. Also, there was a need for more teacher involvement in the DDDM process as well as consistency in data collection procedures. Almost all participants experienced a lack of motivation to use DDDM to drive instructional practices because of both internal and external factors.

The fourth theme was there was a need for more administrative leadership and support for using DDDM was needed. While some teachers acknowledged that leadership and the district level exhibited some leadership and support for teachers use of DDDM to drive instructional practices, all participants cited a lack of administrative leadership and support for teachers using DDDM to drive instructional practices at the school-level.

The fifth theme was that more dedicated to was necessary for teachers to effective use DDDM to drive instruction. Most teachers cited lack of time as the greatest inhibitor to using DDDM to drive instructional decisions. Many teachers recommended time during professional development days to engage in department-wide discussion on DDDM and outcomes and cited the lack time allotted to them during CAMM meetings to discuss DDDM.

The sixth theme was that teachers needed training in using DDDM. There existed a gap in training for all teachers in using DDDM. Furthermore, all but one teacher cited that no district-offered training in DDDM occurred within the last 6 years. Teachers that had received training in DDDM obtained it through means outside the district.

The seventh theme was that teachers possessed a low sense of self-efficacy in using DDDM to drive instructional practices. Many teachers conveyed a gap in knowledge in using DDDM to drive instructional decisions. The teachers feel that they could benefit from additional professional development. The professional development could improve teachers' self-efficacy and capacity for using DDDM to drive instructional practices. Continuous professional development would allow new and experienced teachers to enhance their abilities and skills in DDDM supporting the district's expectations that teachers use DDDM to drive instructional practices.

In Section 3, I provide a description and rationale of the professional development that resulted from the findings of the study. I also provide a literature review and implications for the project.

Section 3: The Project

Introduction

Research shows that the use of DDDM can have a positive impact on student achievement (Datnow & Park, 2018; Lemons & Toste, 2019; Liu & Koedinger, 2017; Niemeyer et al., 2016). Furthermore, research reveals that effective use of DDDM is equivalent to additional instructional time for students who experience this instructional approach (Abbott & Wren, 2016). Conversely, the misuse of data can negatively impact student achievement (Datnow et al., 2017). Teachers' reports of a lack of self-efficacy in using DDDM to drive instruction is problematic as research reveals teachers with low self-efficacy in using data to drive instruction are less likely to use data. Teachers' low sense of self-efficacy, coupled with the absence of professional development and training in the use of DDDM at MCHS could result in the misuse and decrease use of data to drive instruction, resulting in lower student achievement. (Dunlap & Piro, 2016; Filderman & Toste, 2018; Glover, 2016; Lai & McNaughton, 2016; Mandinach & Gummer, 2016a; Reeves & Chiang, 2017; Reeves & Honig, 2015; Van Gasse et al., 2017a; Walker et al., 2016; Young et al., 2017). Accordingly, teachers must receive proper training to ensure fidelity in the delivery of any instructional approach.

Teacher development and acquisition of new knowledge and skills are essential to ensuring teaching effectiveness. Professional development programs are used in education to transform teaching practices, and they can improve academic and research skills, teacher effectiveness, and student achievement (Dilshad et al., 2019; Phasha et al., 2016). However, for professional development to be effective, Darling-Hammond and

Gardner (2017) stated that it must meet the needs of the teachers, be content focused, incorporate active learning, be collaborative with relevant curricula, use models, provide coaching and support, provide opportunities for feedback and reflection, and allow sufficient time for participants.

The purpose of this basic qualitative study was to understand the reasons and motivations behind why teachers at MCHS use DDDM to guide instruction and the internal and external factors that influenced these motivations. Based on the findings of this basic qualitative study, I designed a 3-day professional development training to address the teachers' needs at the research study site. The professional development project was based on two themes that appeared during data analysis: teachers' lack of training and low sense of self-efficacy in using DDDM. The project was developed to provide meaningful training on the process, methods, and application of DDDM. The training would address teachers' concerns of capacity and self-efficacy in using DDDM and improve student achievement at the school site. The strategies presented in the professional development will help teachers understand how to collect and analyze data with fidelity, critically examine data collection tools for efficacy, and use DDDM to make instructional changes.

In Section 3, I present the rationale for the project, a review of current literature used to develop the project, a description of the project, the evaluation plan for the project, and the project's implications.

Project Description and Goals

The findings from the analysis of interview data in Section 2 revealed a need for additional continuous professional development. The project that was developed based on the findings of this study is continuous professional development training for high school teachers in the use of DDDM to drive instructional practices. I designed the training to focus on the following topics: knowledge of DDDM, data literacy, and application of DDDM to guide instruction. Specifically, training topics include (a) an introduction to what DDDM is and how it can impact student achievement, (b) identifying multiple data sources, (c) strategies and tools to analyze data, (d) application of strategies and tools to analyze and interpret student data, (e) use of data to inform instructional decisions.

The overall goal of the professional development is to increase teachers' understanding of DDDM process, increase teachers' sense of self-efficacy to engage in DDDM with fidelity, and support the use of DDDM to drive instructional changes to increase student achievement. Specifically, the professional development goals are:

- for teachers to gain an understanding of what DDDM is,
- for teachers to develop their data literacy,
- for teachers to collaborate to critically examine data and data collection tools,
- for teachers to increase their sense of self-efficacy to engage in DDDM with fidelity, and
- for teachers to engage in DDDM collaboratively and support each other in the implementation of DDDM to drive instructional decisions.

Rationale

The rationale for developing the 3-day professional development was established from the findings of this project study. The study findings suggested that teachers need training in the understanding and application of DDDM. Research suggests that teachers continually engage in professional development for professional advancement, improved job knowledge and teaching skills, increased confidence and efficacy, and improved professional competence in content for improved student achievement (Al Asamari, 2016; Wabule, 2016).

Review of the Literature

This literature review involved reviewing over 30 peer-reviewed journal articles that focus on, or relate to quality professional development, continuous professional development, and the impact of professional development on teacher efficacy in DDDM. The search terms I used and phrases I used singularly, or in different combinations, to discover peer-reviewed research conducted in the last 5 years included: *professional development, data-driven decision making, professional development and teacher efficacy, professional development and data-driven decision making, professional development framework, effective professional development for teachers, professional development and student outcomes, professional development and teacher motivation,* and *professional development and data-driven decision making and student achievement*.

The Internet-based search engines and databases I used were: Education Resource Information Center (ERIC), ProQuest, Education Research Complete, Education from

SAGE, ScienceDirect, Taylor and Francis Online, EBSCO, and Google Scholar to obtain referenced articles in previously explored articles.

Effective Professional Development.

Effective professional development is an essential component to systems of professional learning and can cultivate a culture of learning systems in teaching teams and schoolwide (Garcia & Weiss, 2019). Furthermore, effective professional development provides structured learning that leads to positive outcomes for student learning, and teacher knowledge and practices (Darling-Hammond et al., 2017). Effective professional development must also meet the needs and desires of the teachers consuming it (Matherson & Windle, 2017). Hirsch et al.'s (2018) research supported this citing that effective professional development should:

- focus on content associated with specific teachers' needs,
- incorporate active learning,
- support collaboration,
- model effective practices,
- provide coaching and expert support,
- offer opportunities for feedback and reflection, and
- occur over a sustained duration (p. 84).

Additional studies supported the needs for effective professional development to require these elements (Avidov-Ungar, 2016; Gerzon, 2015; Kennedy, 2016). Consequently, the project focuses on the teachers' stated needs of professional development in DDDM and incorporate the aforementioned elements.

Continuous Professional Development.

Research shows that teachers' professional development is not isolated to pre-service and singular moments, but instead is a continuous process (Mukan et al., 2019; Stevenson et al., 2016). Additionally, research suggests that continuous professional development should include school leaders to increase their knowledge and capacity to support teachers, model the DDDM process, and help empower teachers to participate in conversations related to DDDM (Gannon-Slater et al., 2017; Wachen et al., 2018). School leadership and teachers recognize the benefits and necessity of continuous professional development to help teachers improve their knowledge and self-efficacy, share pedagogical ideas, improve content competence, face new challenges and demands in education, and improve student achievement (Al Asamari, 2016; Kempen & Steyn, 2017; Utami, et al., 2015; Wabule, 2016). Furthermore, continuous professional development is essential in fostering growth to help teachers actualize their true potential. Research findings reveal that continuous professional development has benefited teachers in daily teaching-learning activities and is viewed as essential to improving teacher efficacy (Tulu, 2019).

Schools must also recognize the need to provide continuous professional development to ensure a smooth transition whenever districts implement changes. Research findings reveal that when new curriculum is introduced it is necessary to provide appropriate planning, preparation, implementation, and support to teachers through continuous professional development (Phasha et al., 2016). This ensures that new teachers are provided adequate training and support when entering the district while

continuing to hone the skills of teachers, as research suggests that many teachers find DDDM challenging (Reeves, 2017b).

Professional Development and Teacher Efficacy.

Professional development programs are used in education to transform teaching practices, and can improve academic and research skills, teacher effectiveness, and student achievement (Dilshad et al., 2019; Phasha et al., 2016; Tulu, 2019; Utami et al., 2015; Wabule, 2016). Research also suggests that strong intervention can result in lasting improved teacher efficacy for instructional strategies (van der Scheer & Visscher, 2016). The use of professional development to increase teacher efficacy is vital as research suggests that more self-efficacious, less data anxious teachers with positive attitudes should engage in DDDM more readily and effectively resulting in increased student achievement (Reeves & Chiang, 2018). Furthermore, teachers' self-efficacy is a significant factor in teachers' use of data (Vanlommel, 2018).

Professional Development and Student Outcomes.

Research findings also suggest that professional development can also result in increased student outcomes. Andersson and Torulf's (2016) research showed that classes with teachers that participated in professional development significantly outperformed classes with teachers that did not. Several studies also revealed that professional development can positively impact student achievement in reading comprehension and writing (Lai & McNaughton, 2016; Meissel et al., 2016; van Kuijk et al., 2016; Wayman et al., 2017). However, there does exist research that suggests that professional development does not guarantee increased student achievement among all participants.

Poortman & Schildkamp's (2016) findings revealed that just over half of the participants were able to increase student achievement after participating in professional development focused on data-use intervention. Additionally, Hill and Corey's (2017) study found that professional development for math teachers showed no effect on student outcomes. These findings appear anomalous to most studies which call for increased high-quality professional development opportunities as most research shows an association with teachers' professional development and student outcomes (Fischer et al., 2018).

Professional Development in Data Use.

The use of data is viewed by many as an important element of school improvement (Ebbeler, et al., 2016). Several studies reveal that many teachers, including recent graduates of teacher preparation programs, lack the necessary skills to use data to drive instructional decisions and held negative perceptions of DDDM (Andersen, 2020; Dunn et al., 2019; Mandinach & Gummer, 2015; Obery et al., 2020; O'Brien et al., 2019, Vanhoof & Schildkamp, 2014). Further research revealed that teachers were generally unable to communicate an ability to connect using data to identify students in need of help and using the data to modify instruction (Wachen, et al., 2018).

Lynch et al. (2016) cited that teachers must possess an expertise in using data to produce and interpret data to effectively drive decision-making. While there exists an increased focus on using DDDM, many teachers continue to struggle with the process of DDDM (Reeves, Summers, & Grove, 2016). Furthermore, Huguet, Farrell, and Marsh (2016) assert that teachers' lack of knowledge in the use of data to drive instructional practices can have detrimental impacts on teaching, learning, and student achievement.

Research also reveals that many educators believe that data are used ineffectively by schools (Cech et al., 2018) Vanlommel (2018) also states that data use in schools still appears limited due to various factors including teacher efficacy and data reliability, highlighting the need for professional development and training to alleviate these deficiencies. Furthermore, teachers' individual belief in data use, relevant data, and organizational factors influence the depth of conversations that teachers are willing to have about data (Bolhuis et al., 2016) Thus, it is imperative and necessary that schools receive support in using data (Schildkamp, Smit, & Blossing, 2019).

Professional Development for Data Literacy.

Research cites that merely providing quality data to teachers will not improve teachers' data-based decision making (van der Scheer et al., 2017). Consequently, teachers need proper training in how to use data effectively. Research studies revealed that effective support for teachers use of DDDM can improve data literacy and use at both a school and system level (Pagan et al., 2019). DDDM is a complicated process, thus professional development is necessary to introduce and reinforce the DDDM process in teachers. Research shows that increased consistency in the use of DDDM by teachers can occur when teachers are exposed to interventions to support the use of DDDM (Reeves & Chiang, 2019). Research also suggests that effective interventions can influence the motivations behind why teachers use DDDM. Ebbeler et al., (2016) cited that following the implementation of an intervention, teachers noted that their use of DDDM was no longer for purposes of accountability actions, but instead for school development and instructional actions.

Research also suggest that faculty development of data literacy should shape organizational approaches and develop paradigms that are relevant to all stakeholders in the educational process (Raffaghelli & Stewart, 2020). Furthermore, researchers argue that data literacy is a critical element of a teachers' professional competence (Raffaghelli, 2019). Researchers identified major elements for data literacy.Raffaghelli (2018) identified the seven elements as:

- Awareness: understanding data and its role in society;
- Access: understanding how to identify, locate, and appropriately use datasets and databases;
- Engagement: evaluate, analyze, organize, and interpret existing data. Make decisions based on data;
- Management: plan and manage data, including organization and analysis, security protocols for data storage, sharing data, and data-driven documentation;
- Communication: synthesize, create visualizations and data representation;
- Ethical use: Identify diversified data sources…considering the risks of managing such data. Understanding the issues implicit in the use of data;
- Preservation: Be aware of long-tern practices of storing, using, and reusing data (p. 94).

Given these seven elements, it is imperative that district leaders and policymakers support data use within the context of specific situations and circumstance to ensure DDDM is beneficial rather than detrimental (Jimerson, 2016).

The study's findings revealed the teachers' need for professional development in the use of DDDM. Superintendent of Midwest City School District, and the principal of MCHS both cited the need to determine why teachers use data to drive instruction. My qualitative study on understanding teachers' motivation to use DDDM to drive instruction at MCHS is necessary to address this gap in practice, determine the internal and external factors influencing teachers' motivation, and discover how to help enhance positive motivating factors and inhibit demotivational factors to ensure teachers consistently use data to drive instruction.

Project Description

The professional development opportunity will be offered to high school teachers over three school days. The first session focuses on the foundations of DDDM and an examination of different types and quality of data and allows teachers to engage in a self-diagnostic of their data use. The second session focuses on (a) differentiation of instruction based on data, (b) strategies to engage in data conversation practices, and (c) data culture development. The third session provides teachers the opportunity to engage in data practice, including analysis of data, sharing inferences, and differentiating instruction.

Project Evaluation Plan

I will meet with the district administration to request capital resources to present the study's findings to the administration. I will also present the 3-day professional development session to the school administration. The impact of the professional development implementation will be measured by an outcome-based evaluation. The

attendees of the professional development, who will be high school teachers, will be asked to give written feedback after each session, and at the end of the professional development session, by completing an evaluation form. Feedback from the professional development evaluation will be shared with district administrators.

Project Implications

High school teachers at the project site have been inconsistent in using DDDM to guide instructional decisions. High school teachers will benefit from the 3-day professional development session. High school teachers will learn how to use DDDM to guide their instructional practices. Professional development activities will help high school teachers apply newly gained knowledge of using data to drive instructional practices including:

- data collection
- data analysis
- data conversations
- differentiation of instruction

This project should be used by district administration from decision making processes to support teachers in the use of DDDM. School administrators should offer continuous professional development in DDDM to support all teachers to benefit students. Implications for positive social change include a 3-day professional development with strategies for high school teachers to use DDDM to drive instructional practices. Increasing teachers' motivation and efficacy to use DDDM could resulting in greater student achievement and increased graduation rates.

Summary

In Section 3, I described the project that resulted from the research. The project is a 3-day professional development plan for high school teachers. The goal of the project is to provide training for high school teachers to better use DDDM to guide instructional decisions. Continuous professional development is an appropriate response to the project study's findings because it addressed the teachers' needs in the project study. I conducted a review of current literature that supports the professional development plan. The professional development is designed for high school teachers to improve their use of DDDM to guide instructional practices. The professional development topics include (a) how to analyze data collection tools, (b) how to analyze data individually and cooperatively, (c) how to engage in productive data conversations with colleagues, and (d) using data analysis to differentiate instruction.

In Section 4, I provide a description of the project's strengths and limitations, alternative solutions, and provided my reflection of the of the doctoral study process and the importance of the overall work. I also discussed my growth as a scholar-practitioner.

Section 4: Reflections and Conclusions

Introduction

In this section, I discuss my reflections and conclusions, as well as the project's strengths and limitations. I also discuss recommendations for further research based on the findings. Based on the findings of the project study, a 3-day professional development could be employed as a solution to the research problem identified at the project site.

Project Strengths and Limitations

The professional development project study possesses both strengths and limitations. One strength of the project study is that it involves high school teachers who have direct contact with students. The content of the project study will be offered to high school teachers to help them gain a better understanding in using DDDM. Teachers identified a lack of efficacy in using DDDM as a barrier to implementation. Providing teachers with proper training could increase their motivation to consistently implement DDDM to drive instructional practices. Another strength of this project study is the sharing of the findings with district administration which will allow them to offer continuous professional development to increase and maintain teacher efficacy in using DDDM to guide instructional practices.

The professional development also has several limitations. The professional development designed for the project site requires the school district to set aside a 3-day period for teachers to attend the sessions. This could limit the number of teachers who attend the professional development. This could also create a logistical problem for the school if the professional development session is not offered prior to the start of the

school year. Another limitation could be teachers' resistance and opposition to the professional development. Teachers could view the professional development as unnecessary, impractical, or ineffective. Additionally, the persistence of the Covid pandemic could result in the need for virtual sessions of professional development.

Recommendations for Alternative Approaches

The problem in this study was that student achievement data on state assessments revealed a negative trend over the past 3 years despite the expectation for teachers to use DDDM to drive instructional decisions. The findings from the research showed that professional development in DDDM was necessary to train high school teachers on how to use DDDM to guide instructional decisions with efficacy. The findings of the study also revealed that teachers sought professional development to increase their capacity in using DDDM to guide instruction. Consequently, professional development focused on teachers' needs could result in increased motivation (Avidov-Ungar, 2016). Therefore, continuous professional development, throughout the school year, would be a reasonable means to address the needs of teachers at the project site.

The professional development would give teachers the knowledge, skills, and resources to implement DDDM to guide instructional decision with fidelity. However, alternative approaches exist to address the identified problem if limitations or timelines hinder the execution of the project. The first alternative approach would be to deliver the professional development session virtually to contend with potentially increased restrictive guidelines by the CDC. To alleviate the potential logistical limitations, online modules could provide teachers with the opportunity to engage in professional

development absent of time and location obstacles (Beach, 2017). Teachers would also receive all materials for the professional development sessions to use with the modules. The modules will provide instructions and support for strategies. Teachers could also receive compensation from the school district for completing the modules during the summer or off-duty hours.

The project site engages in department-level team meetings each Monday morning. The department team meetings would serve as a professional learning community where the professional development could be implemented by department chairs. Promoting the professional development could focus on department level chairs, who could then disseminate the training to their teams during department level meetings, where teachers would meet each Monday to discuss data collection, data analysis, data conversations, and differentiation of instruction.

Scholarship

Conducting this qualitative study helped me grow personally and professionally. The doctoral study journey, beginning with the coursework and ending with the professional development project provided me with a greater understanding about the word scholarship. However, Walden University stressed the importance of applying the learning gained in the doctoral program. The doctoral journey was long, complex, and challenging. The doctoral process forced me to engage in constant self-reflection of my scholarly skills and time management. I had to learn to write for an academic audience using appropriate tone and vocabulary. I also learned that this journey cannot occur in

isolation. I had to learn to ask for help and to lean on my committee for guidance and advice in writing and for moral support.

Conducting the doctoral study also helped me develop and refine many skills necessary for research. I applied the knowledge learned from the coursework to conduct my qualitative research. I gained experience conducting research interviews and analyzing the qualitative data. I applied ethical principles throughout the research process. Engaging in this project study was a positive experience in my role as a researcher and scholar-practitioner.

Project Development and Evaluation, and Leadership and Change

I developed a 3-day professional development session based on the findings of the project study. I used peer-reviewed literature to develop an effective professional development session. Feedback from the professional development evaluations will be provided to school and district administrators at the project site. Feedback from the participants could assist in refining the professional development's content and delivery. I will also use an outcome-based evaluation to measure the effectiveness of the professional development project. I will use ACT and state testing data to determine whether the professional development increased teacher efficacy in using DDDM, leading to increased student outcomes.

I am a certified teacher and taught in the classroom for 18 years. I worked as a department chair for 9 years and currently work as a teacher at a Native American Boarding School. I will use the information from the project study to help implement positive change in school districts. I will apply the knowledge gained during this project

study to continue to help mentor teachers in the use of DDDM to guide instructional decisions. I will also use this knowledge as I aspire to move into administration. As an administrator, I will be able to use the knowledge from this project study to help create and execute school policies and provide teachers with the support necessary to implement DDDM to guide instruction.

Reflection on Importance of the Work

Conducting this basic qualitative study provided several insights after engaging in self-reflection. I learned how to conduct interviews, and collect, code, and analyze the transcripts. I also enjoyed conducting the research and discovering new knowledge. The research findings were also important in that they revealed the internal and external factors that are influencing teachers' consistent use of DDDM to guide instructional practices. I also developed a 3-day professional development project. Developing the professional development project was difficult, time-consuming, and rewarding. I thoroughly enjoyed the entire process, from prospectus to the development of the project. I know I have gained greater knowledge that has and will continue to positively influence my career as a professional educator. The work I completed during this doctoral journey has been rewarding and necessary as I get closer to achieving my goal of obtaining my doctoral degree.

Implications, Applications, and Directions for Future Research

Researching teachers' motivation to use DDDM to guide instructional decisions and the internal and external factors that influence teachers' motivation helped identify several factors that inhibit teachers' use of DDDM to guide instruction. I developed a 3-

day professional development plan for high school teachers to provide them with training in using DDDM to guide instruction. The professional development should be used by school districts to provide appropriate training in using DDDM to guide instruction to improve teacher efficacy in DDDM. The professional development training should also be used each year for newly hired teachers as part of the mandatory in-service for new hires to help promote the district policy of teachers using DDDM to drive instructional practices. The professional development plan includes scenarios that allow teachers to practice analyzing data collection tools and data sets, engaging in constructive data conversations for increased collaboration, and acting on the data to guide instructional decisions to improve teaching practices.

School and district administrators should use the project for decision-making processes to support teachers in using DDDM to drive instructional practices. District leadership should offer additional professional development opportunities in using DDDM to support all teachers. Continuous professional development would enhance teachers use of DDDM and benefit all students in the district. Implications for positive social change include the 3-day professional development plan with strategies for teachers to implement DDDM to guide instruction with efficacy, leading to increased student outcomes, and benefiting all students.

I recommend school administrators apply the findings of the project study to provide support for teachers use of DDDM to guide instructional practices. Future scholars who desire to replicate this project study should interview teachers and school administrators. Researchers should also interview district leadership to determine ways to

support school principals to better promote instructional leadership practices to support teachers use of DDDM to guide instructional decisions. Researchers can also conduct a quantitative study to determine the effectiveness of the professional development plan by measuring student achievement before and after the professional development plan implementation.

Conclusion

In this section I presented the reflections and conclusions of the project study. I also discussed the strengths and limitations of the project study. The doctoral study helped me understand how to conduct qualitative research, refine my writing as a scholar, and improve my time management skills. I learned to set incremental, attainable goals throughout the process. I became a scholar-practitioner and an agent for social change.

The result of this project study is a 3-day professional development plan to train teachers in using DDDM to guide instruction. The presentation of the professional development will result in positive social change by allowing teachers to provide superior, individualized instruction and increasing student outcomes, which can lead to higher post-secondary achievement. The teachers participating in the professional development will benefit from this project by (a) learning to analyze data collection tools, (b) engaging in data analysis individually and cooperatively, (c) learning how to engage in productive data conversations with colleagues, (d) using data analysis to differentiate instruction.

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Appendix A: The Project

Using Data to Drive Instruction

Presented by:
Theodore S. Murray

Purpose and Goals of Professional Development

- This project includes a three -day plan for high school teachers to help them better use data driven decision making to guide instruction.
- The goal of this professional development is to provide support and training for teachers who have been inconstant in the use of data to guide instructional decisions.

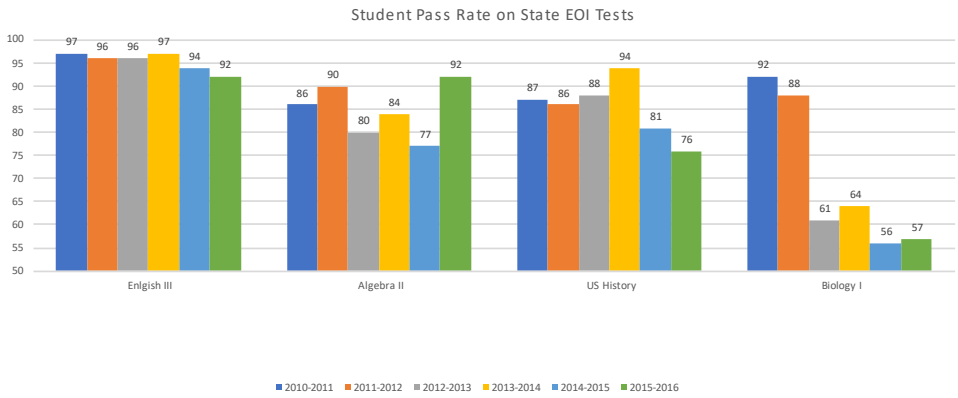
Using Data to Drive Instruction

Presented by:
Theodore S. Murray

Session 1 Objectives

- Participants will be able to:
  - Identify perceptions of DDDM
  - Identify barriers or gaps preventing teachers from using data effectively
  - Describe the DDDM Cycle
  - Identify, categorize, and evaluate different forms of data
  - Discuss and evaluate different forms of assessments

What is the first thing that comes to mind when you view this graph?



Common Uses of Data

- Assessing student performance, progress, and creating common assessments
- Planning and goal setting
- Recognize instructional strengths and weaknesses of teachers
- Facilitate and promotes conversations among teachers for improving instruction
- Evaluate curriculum (Candal, 2016; Green, Schmitt-Wilson, Versland, Gibson, & Nollmeyer, 2016; Park & Datnow, 2017; Sun et al., 2016).

Small group discussion

- What is your perception of DDDM and its effectiveness as an instructional approach?
    - (Group leaders to share responses)

Small group discussion

- What information/data do teachers have access to?
- What barriers or gaps serve as obstacles to effective use of data by teachers?
    - (Group leaders to share responses)

Break – 15 Min

What is so great about data driven instruction?

- Small Group Discussion

- Adato, Mark. "What's So Great About Data Driven Instruction?" *Youtube* , 1 Aug. 2018, What's So Great About Data Driven Instruction?

DDDM Cycle

- Assess - assess students and collect data
- Analyze – analyze and interpret data
- Action – modify instruction based on data analysis

DDDM Cycle - Discussion

- What kinds of assessments do you use for data collection?
- How do you analyze data (in isolation, as a PLC, etc.)?
- What kinds of actions do you take once the data is collected, and when?
    - (Group leaders to share responses)

Lunch Break

- Exit tickets turned in to leave:
  - One new piece of knowledge learned about DDDM that you did not know **OR** a question that was raised during discussions that you would like addressed.

Welcome Back

Small Group Discussion (respond to statements)

- No data is better than bad data

- Unused data is no better than no data

  - (Group leaders to share responses)

Sources of Data

Data Sources	Content Area	When is data collected	Purpose	How is data used?
			o Guide Instruction o Accountability o Other:	
			o Guide Instruction o Accountability o Other:	
			o Guide Instruction o Accountability o Other:	
			o Guide Instruction o Accountability o Other:	
			o Guide Instruction o Accountability o Other:	

Small Group Discussion

- What is “quality data”?
- What are the limitations of data?
- What data do we use?
- What data do we have?
- What data do we wish we had?
- How do data sources differ by discipline?
  - (Group leaders to share responses)

Assessments

- Kinds of assessments:
  - Diagnostic
  - Summative
  - Formative
    - Provide examples of each kind of assessment used in the class?
  - Evaluate assessment questions (Handout) as a small group and discuss:
    - Do the questions fit the standards?
    - Biases in the question?
    - Will the question provide quality data?

Assessments

- Are teachers using all kids of assessments? Why or why not?

- Common Assessments

Review Session 1 Objectives

- Participants will be able to:
  - Identify perceptions of DDDM
  - Identify barriers or gaps preventing teachers from using data effectively
  - Describe the DDDM Cycle
  - Identify, categorize, and evaluate different forms of data
  - Discuss and evaluate different forms of assessments

Exit Ticket

- Please fill out evaluation for Session 1

Welcome and Overview – Session 2

Professional Development Norms

- Reasonable breaks (Bio/Technology)
- Respect for time and others
- Active listening
- Active participation
- Shared discussion time
- Solution oriented vs. problem oriented
- Additional:

Revisit DDDM Cycle

- Assess - assess students and collect data
- Analyze – analyze and interpret data
- Action – modify instruction based on data analysis

Session 2 Objectives

- Participants will be able to:
  - Identify ways of using data after analysis
  - Identify and describe how to differentiate instruction
  - Engage in data conversations
  - Identify and describe data culture

How do we use data after analysis?

- Read and discuss article, “Show & Tell: A Video Column / Don’t Just Gather Data—Use it,” in small groups
  - Don't Just Gather Data—Use It - Educational Leadership (ascd.org)
  - (Handout)

  - What are the main points of the article?
  - Where are you at in this process?

How do we use data after analysis?

- Watch video clip
- Using Plickers to quickly assess students' answers
  - What are your thoughts on the video?
  - How do we differentiate?

Break – 15 Min.

Data Conversations

- Data conversations allow teachers discuss and examine student achievement in teams (Datnow, Choi, Park, & St. John, 2018).
- Teams that engage in data conversations can result in increased use of data by individuals (Van Gasse, Vanlommel, Vanhoof, & Van Petegem, 2017).

  - Small group discussion:
    - What is your experience with data conversations?
    - How much experiences do you have engaging in data conversations?
    - (Group leaders to share responses)

Data Conversations

- Questioning techniques to improve data conversations:
  - Reframe the conversation from negative presumptions to positive presumptions (Kekahio & Baker, 2013).
  - Data conversation exercise – Reframing
    - Complete individually, then share among small groups.

Data Culture

- Creating a data culture is created as teachers engage in the DDDM process and data conversations.
- School leadership should be the driving force for this, including teacher-leaders
  - Commonly scheduled assessments, time for team-level data analysis, and professional development in data use should be the priority.

Data Culture

- A positive data culture:
  - Requires direct involvement
  - Sets S.M.A.R.T. Goals
  - Develops long-term planning
  - Empowers teachers
  - Gives teachers the responsibility of analyzing data
  - Includes PLCs (Gannon-Slater et al., 2017).

Data Culture

- Small Group Discussion:
  - What is the state of your data culture?
  - Where do we need to go?
  - How do we get there?
  - (Group leaders to share responses)

Session 2 Objectives

- Participants will be able to:
  - Identify ways of using data after analysis
  - Identify and describe how to differentiate instruction
  - Engage in data conversations
  - Identify and describe data culture

Professional Development Norms

- Reasonable breaks (Bio/Technology)
- Respect for time and others
- Active listening
- Active participation
- Shared discussion time
- Solution oriented vs. problem oriented
- Additional:

Session 3 Objectives

- Participants will be able to:
  - Engage in practice using the DDDM Cycle

Revisit DDDM Cycle & Data Conversation Techniques

- Assess - assess students and collect data
- Analyze – analyze and interpret data
- Action – modify instruction based on data analysis

- Questioning techniques to improve data conversations:
  - Reframe the conversation from negative presumptions to positive presumptions (Kekahio & Baker, 2013).

Data Practice #1

- Each small group will use the handout and:
  - Analyze the data
  - Engage in data conversations to share inferences
  - Develop an action plan to address strengths and weaknesses identified during analysis.

Data Practice #2

- Each small group will use the handout and:
  - Analyze the data
  - Engage in data conversations to share inferences
  - Develop an action plan to address strengths and weaknesses identified during analysis.

Data Practice #3

- Each small group will use the handout and:
  - Analyze the data
  - Engage in data conversations to share inferences
  - Develop an action plan to address strengths and weaknesses identified during analysis.

Open Discussion or Questions concerning

- DDDM Cycle
- Data and Assessments
- Data Conversations
- Data Culture
- Data Practice Activities

Session 3 Objectives

- Participants will be able to:
  - Engage in practice using the DDDM Cycle

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Appendix B: Department Meeting Notes

Math Dept Meeting Aug 5, 2019 9:00

Tim Collier
Bret Lalli
Tracey Matthews
Patty Brannon
Marc Curlis - briefly
Kelly Cox - Left for coaching
Patricia Easley
Chuck Geis

1. Benchmark rewrite
after our previous meeting Mr. Hughes has agreed to pay a stipend. I can hire three staff to work on Benchmark tests for math dept

Alg I ⇒ Patricia Easley
Geometry ⇒ Tracey Matthews
Alg II → ??

2 What will our new benchmarks Look like?
we agreed previously to include ACT questions on our new benchmark tests - what percent?
→ 75% Questions from OAS framework
→ 25% ACT Questions ⇒ trackable
what method of delivery?
⇒ Explore Google classroom + TI-NSpire

3 How do we track data?

→ if the new Google Quiz works as we believe perhaps we can tag each question to a standard & export to a Google sheet automatically

→ over the 12 benchmarks from freshman year to junior year we can get a picture of OAS Framework mastery as well as ACT objectives that we need to give attention to before the 11th grade ACT administered by the state

→ if Google does not work out? use TI-Nspire & manually enter each Keyed question into a shared Google sheet so that a students progress through OAS & ACT may be tracked

→ use spreadsheet to asses our teaching of OAS frameworks & ACT.

4. Request a Mock ACT for all Juniors in Late January to gather data for focused Reviews.

5. Aug 19 is the deadline to apply to present at T^3 International Conference
   1. Brad & Tim - Host a Rura Challenge
   2. Brad & Tim - build Culture w/ MSPIRE
   3. Brad - N-Spire & Python
   4. Tracey - Hands on Geometry
   5. Tim to writing Engaging Questions

The Last day to get ½ price registration is Oct 1.
   We also can get one free if we register 4 others

→ Drive to Dallas or stay over?

Appendix C: Administrator Evaluation

Administrator Evaluation

Name of:

1. Goals for the 2019 - 2020 School year.
   a.
   b.
   c.

2. Monthly meeting agendas:
   a. Agenda and notes / Minutes completed
   b. Yes { } No { }

3. Weekly communications to staff and Parents:
   a. Yes { } No { }

4. Buy in from staff and community
   - Survey results
     - Promotes culture of ongoing PD 24 3
     - Building Leader 25 2
     - Confronts problems honestly 24 3
     - Focus on student needs 23 4
     - Seen as instructional leader 22 5
     - Comfortable taking concerns to Prin 22 4
     - Communicates effectively to staff 22 5
     - Speak how I feel to the prin. 20 7
     - Interacts well with students 25 1
     - Prin. Can lead our school 23 5
     - Good problem solver, can mediate 26 1
     - Consistent, does not avoid confrontation 20 7
     - Communicates effectively with commun 23 4
     - Effective leader 24 5
     - Holds everyone accountable 21 7
     - Positive character traits for school 24 3
     - Helped me to become effective teacher 21 6
     - Really cares for students and staff 25 2
     -
   - Title 1 survey
   - Communicate effectively Yes {} No {}
   - Lead the school Yes {} No {}
   - Do Teachers buy into leadership Yes {} No {}

5. Growth of the school
    a. 3 year comparison of date showing growth of students
        i. Star
        ii. Benchmark
        iii. State

6. Evaluation meetings
    a. Fall
    b. Winter
    c. Spring

7. Absentee report
    a. First semester
    b. Second semester

8. Chronic Absentee report
    a. Number of students who has missed 18 days:

9. Failing list numbers
    a. First semester –
    b. Second semester –

10. Drop report
    a. Number of students (name of those who have dropped or moved into a non-district virtual school)

11. Central Office –
    a. Lori – Information is turned in on time: Yes {} No {}
        i. Follows procedures: Yes {} No {}
    b. Susie – Information is turned in on time: Yes {} No {}
        i. Follows procedures: Yes {} No {}
    c. Amy – Information is turned in on time: Yes {} No {}
        i. Follows procedures: Yes {} No {}
    d. Angie – Information is turned in on time: Yes {} No {}
        i. Follows procedures: Yes {} No {}
    e. Gayla - Information is turned in on time: Yes {} No {}
        i. Follows procedures: Yes {} No {}
    f. Pam – Information is turned in on time: Yes {} No {}
        i. Follows procedures: Yes {} No {}
    g. Cassie – Information is turned in on time: Yes {} No {}
        i. Follows procedures: Yes {} No {}

12. Positive
13. Concerns

Appendix D: Teacher Interview Protocol

Teacher Interview Protocol

Opening Remarks (paraphrased)

Thank you for taking time out of your day and volunteering to participate in my project study. My name is Theodore Murray and I taught Social Studies at this school for 11 years. I left the school district at the end of the 2014-2015 school year and am working towards my Doctorate in Curriculum, Instruction, and Assessment at Walden University. This interview should take approximately 60 minutes to complete. I will, with your permission, be recording this interview to confirm your words can be transcribed verbatim to ensure accuracy.

The purpose of this study is to understand the reasons and motivations behind why teachers use data-driven decision making to inform instruction at Midwest City High School, as well as the internal and external factors that affect teachers' motivation, which will help ensure teachers meet the district expectations to consistently use data-driven decision making to guide instruction.

The findings will be published, and a summary will be presented to the administration and teachers with a plan of creating a professional development program to help assist the district and teachers to address the internal and external factors affecting teachers' motivations to ensure consistent use of DDDM to guide instruction.

You signed the consent form to participate in this study. However, I would like to review some important information before we begin.

- I will not use your name or any identifying characteristics in any notes, conversations, or publications related to this study. A pseudonym will be used instead.
- At any time, and for any reason, you may excuse yourself from this interview and
  participation in this study.
- I will provide a 1-2 page draft summary for you to offer comments on the content and accuracy.
- If you would like to review the final draft of this study, I will provide a digital copy and you can offer comments on the content and accuracy.
- Do you any questions before we start the interview?

Please tell me a little bit about yourself, where you were born, your interests and hobbies outside of work. I would not like to begin the actual

interview. If it is acceptable to you, I would like to begin recording now (Obtain permission to begin recording).

Questions for Teacher.

1. What is your perception of teachers using DDDM to guide instruction?
    a. Positive or negative, try and expound on this more.
2. Have you received training for using DDDM to guide instruction?
    a. If so, when was the last training you attended
3. What kinds of data are provided to teachers and how often is it made available?
    a. Formative? Summative? Informal?
4. What approaches and/or strategies do you use to analyze data?
5. How do you use data to drive instructional decisions?
    a. If teacher does not:
        i. What do you use to drive instructional decisions?
6. Do you discuss data with other teachers?
    a. If so, when does this occur?
    b. If not, what is preventing these discussions from occurring?
7. What has your experience been in using data to drive instructional decisions?
    a. How has this experience impacted your use of data to guide instruction?
8. What kinds of instructional changes resulted from using DDDM?
    a. If teacher responds with "none," follow up questions:
        i. What has been the reason for this lack of instructional change?
9. What difficulties have you experienced in using data to guide curriculum and instructional decisions?

Do you have any questions or concerns before we end the interview?

Thank you for participating in this interview. The information provided will assist in completing this study (Burkholder et al., 2016; Rubin & Rubin, 2012).

Appendix E: The National Institute of Health (NIH) Office of Extramural Research Web-based training

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Theodore Murray** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 09/23/2017.

Certification Number: 2504745.