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Teachers' Perspectives on Implementation of the Measure of Academic Performance (MAP) Assessment

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Derek J. Varansky

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the review committee have been made.

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Walden University

2020

Abstract

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Measure of Academic Performance (MAP) Assessment

by

Derek J. Varansky

MS, Walden University, 2013

BS, Kent State University, 2009

Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Education

Walden University

November 2020

Abstract

A rural Midwestern school district the Measures of Academic Progress (MAP) adaptive assessment did not yield the expected improvements in student outcomes. Therefore, the purpose of this qualitative study was to better understand teacher practice regarding MAP implementation. The conceptual framework was based on Fullan and Langworthy's change theory. The three research questions focused on how teachers use individual student MAP data to design learning experiences, how teachers engage in professional learning about MAP, and how teachers work with students to set learning goals. Data were collected in a rural school district in the midwestern United States, through interviews of 12 classroom teachers of K-12 English Language Arts, mathematics, and science, chosen through purposeful sampling and evenly divided among primary, intermediate, middle, and high school levels. Data were analyzed using open and axial coding to identify themes from the interview transcripts. Results indicated that: (a) most teachers used MAP scores to remediate for students who were behind or to track progress, not to change their instruction; (b) professional development was inconsistent when MAP was implemented and may not have provided teachers with the skills necessary to use MAP to its full potential; and, (c) goal-setting strategies with students varied from teacher to teacher. Results suggested that intentional teacher training in applications of data might increase student outcomes, but that more research is needed in how MAP is used to guide everyday instructional practice. This study may lead to positive social change because teachers and administrators may apply the findings regarding barriers to the success of MAP to improve MAP usage in ways that are effective in improving student outcomes.

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Dedication

This dissertation is dedicated to my wife, Heidi, who has been a constant source of encouragement throughout this process. She provided me with the strength to continue on days that I wanted to give up, and for that, I am forever grateful. In addition, this dissertation is dedicated to my children, Malachi and Makenna, as their addition in my life prompted me to start this journey with the goal of creating positive social change that would better their school experience. Finally, this dissertation is dedicated to my parents, Don and Joni, for the work ethic they instilled in me. Though my dad was not able to see me finish, my parents support and encouragement over the years helped shape me into the successful educational leader that I am today.

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Table of Contents

List of Tables	v
List of Figures	vi
Chapter 1: Introduction to the Study	1
Background	2
Problem Statement.....	5
Purpose of the Study.....	8
Research Questions.....	9
Conceptual Framework.....	10
Nature of the Study.....	12
Definitions.....	14
Assumptions.....	15
Scope and Delimitations	17
Limitations	18
Significance.....	19
Summary.....	20
Chapter 2: Literature Review.....	22
Literature Search Strategy.....	22
Conceptual Framework.....	23
Purpose of Diagnostic, Adaptive Assessments	27
State Assessments.....	28
Curriculum Driven by Assessment Scores.....	28
Differentiation	29

MAP as a Diagnostic, Adaptive Assessment	30
Data-Driven Instruction	31
Student Goal Setting.....	33
Supports Necessary for Teachers to Use Data	33
Professional Learning	34
Technology to Support the Use of Data.....	35
Barriers to Data Driven Instruction	36
Summary and Conclusions.....	37
Chapter 3: Research Method.....	39
Research Design and Rationale.....	39
Role of the Researcher	41
Methodology	42
Participant Selection	42
Instrumentation.....	45
Procedures for Recruitment, Participation, and Data Collection	47
Data Analysis Plan.....	48
Trustworthiness	51
Credibility.....	52
Transferability	52
Dependability	53
Confirmability	53
Ethical Procedures	54
Summary	55

Chapter 4: Results	56
Setting	56
Data Collection.....	58
Eligibility.....	59
Interview Processes.....	60
Reflective Journal	61
Data Recording and Archiving.....	61
Variations and Unusual Circumstances of Data Collection.....	62
Data Analysis	63
Coding.....	63
Categories.....	63
Themes	64
Results	66
RQ 1 Results.....	67
RQ 2 Results.....	75
RQ 3 Results.....	79
Evidence of Trustworthiness.....	85
Summary	86
Chapter 5: Discussion, Conclusions, and Recommendations.....	88
Interpretation of Findings	89
District-wide Implementation.....	89
Implementation Process	91
Teacher-student Collaboration	91

Limitations of the Study.....	92
COVID-19 Pandemic.....	93
Sample.....	94
Recommendations	94
Implications.....	95
Implications for Practice	95
Implications for Social Change	96
Conclusion	97
References.....	98
Appendix A: Semistructured Interview Guide	113
Appendix B: Codes and Categories.....	113

List of Tables

Table 1. State ELA Test Scores by Grade, 2015-2019.....	6
Table 2. State ELA Passage Scores by Cohort, 2015-2019.....	7
Table 3. Participant District Teaching Experience and Grade Level/Content Area	57
Table 4. MAP Categories and Themes Derived from Interviews.....	64
Table 5. Teacher Use of MAP by Building	65
Table 6. Teacher Use of MAP by Participant ($n = 12$) and Content Area.....	66

List of Figures

Figure 1. Fullan and Langworthy's educational change process.	12
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Chapter 1: Introduction to the Study

Schools are under pressure from both state and federal governments to increase student test scores in order to prepare graduates for college or career. State tests, first authorized by No Child Left Behind (NCLB) in 2001 and reauthorized by the Every Student Succeeds Act (ESSA) in 2015, determine whether students may advance to the next grade level and whether a student graduates from high school (Li & Xiong, 2018). To determine if students are expected to be proficient on state-mandated achievement tests, educators use commercially produced assessments that measure student academic skills on specific state standards (Jankens, 2016). Such assessments are often diagnostic in nature, providing formative information about what students know and do not know (Raposo-Rivas & Cebrian-De-la-Serna, 2019). Some assessments are diagnostic as well as adaptive, meaning that the questions on the test change based on students' responses to test questions, in order to find the student's academic level (Pezzino, 2018). Educators in more than half of schools in the United States and in 145 other countries have used one such assessment, the Measure of Academic Progress (MAP), for the past 40 years (Northwest Evaluation Association, 2019). The MAP assessment is both diagnostic and adaptive (Northwest Evaluation Association, 2019) and provides useful information about students' skills; it allows teachers to make data-driven decisions about classroom instruction, leading to an increase in student achievement and initiating positive educational change (Fullan 2006).

However, for one school district in the Midwest, MAP implementation has not produced the anticipated increase in student achievement, as I describe in the problem

statement below. In this study, I explored the gap in practice indicated by these results, in order to determine teachers' perspectives on the MAP adoption, and elements of the change process that teachers perceive were present or absent during implementation. Results of this study may contribute to positive social change by helping the target district revamp the way MAP is used and thus better prepare students for both state testing and their future.

In this chapter, I will outline why schools use diagnostic, adaptive assessments such as MAP. Next, I will state the problem and purpose of this study. I also present the research questions that guide the study and explain the conceptual framework grounding the study. I explain the nature of the study and the parameters I followed to understand teachers' perspectives on implementation of the MAP assessment. Finally, I identify the significance of the study.

Background

According to the department of education in the target state, standards require students to apply their learning to new situations, not just reiterate memorized facts. Although schools are held accountable for student mastery through state testing, the role of schools is to engage students by providing meaningful learning opportunities that require them to be active learners. Schools must also establish environments focused on enriching each student rather than employing a one-size-fits-all approach (Ritchhart, 2015). In this type of school setting, students are more engaged; but schools must also empower students by giving them the skills and knowledge necessary to be successful in life (Couros, 2015). For many schools, this type of learning requires an educational

change in philosophy, as schools switch from teaching facts for students to memorize, often in lectures, to forming partnerships between students and teachers to develop and enhance students' individual academic skills (Senge et al., 2012). Fullan and Langworthy (2013) stated that, for educational change to happen, teachers must be equipped with the knowledge of individual students' academic performance. Information about students' knowledge and skills is obtained through assessments; however, teachers must use the assessment data to drive instruction. Effectively using student data, obtained from assessments, allows teachers to set goals for individual students, collaborate with other teachers, and design intentional instruction that closes learning gaps and thus enhances student achievement. Teachers learn these skills through rich professional development (Fullan & Langworthy, 2013). Ultimately, the effective use of data by teachers to design instruction creates educational change and, naturally, state tests scores that determine a school's state rating increase.

Teacher's use of assessment data is a powerful way to influence how students perform on state-mandated assessments (Betts, Hahn, & Zau, 2017). While test preparation itself has little effect on students' performance on tests or in closing achievement gaps, knowledge of the specific needs of each student in the classroom and what intervention students' need is critical to increase student learning (Liu & Xiong, 2018). Paul, Gray, Butterworth, and Reeve (2019) supported this idea by demonstrating that the older the student, the more cautious teachers must be in using standardized assessment scores to adjust teaching and learning. While teachers certainly want students to perform well on state tests, using old state test questions or data from the tests to

reteach or review skills may be inefficient; diagnostic, adaptive assessments may be a better tool to influence classroom decisions (Pezzino, 2018).

MAP, a diagnostic and adaptive assessment, allows teachers to find each student's individual ability level. Adaptive assessments are reliable, yet not often used (Kean, Bisson, Brodke, Biber, & Gross, 2017; Liu & Yang, 2018). Gerard, Matuk, McElhaney, and Linn (2015) concluded that adaptive assessments are effective in closing learning gaps, but only when students have a voice in setting goals, and when teachers use the data to influence classroom practices. Pezzino (2018) reinforced the efficacy of adaptive assessments and claimed that this type of assessment enables educators to get accurate achievement abilities, more so than with standard diagnostic assessments. Although adaptive assessments yield accurate ability levels, if the assessments are used only to track students into specific placements and not for instructional design, the assessments could hurt students' academic self-beliefs (Dumont, Protsch, Jansen, & Becker, 2017).

While diagnostic, adaptive assessments are accurate predictors of student academic levels, teachers tend to be more reactive in their lesson planning—first planning a lesson and then trying to make it fit all students (Civitillo, Denessen, & Molenaar, 2016). Harris and Reynolds (2018) stated that teachers typically choose the material by deeming what they believe is essential, not on what students may or may not need. Effective lesson design should include student voice and goal setting and should take into consideration what interventions are needed (McKay & Dean, 2017). Teachers who set goals with their students demonstrated higher levels of achievement and closing of learning gaps than those teachers who do not (Poortman & Schildkamp, 2016). Lesson

design using data, along with research-based curriculum, leads to higher levels of teacher efficacy and the ability to individualize instruction, ultimately increasing student achievement and closing learning gaps (Siuty, Leko, & Knackstedt, 2018).

MAP is aligned with the target state's standards, and research indicates that the assessment is an accurate predictor of how a student will perform on the state test (Northwest Evaluation Association, 2019). Yet, a gap in practice, that is, how MAP was implemented, may be prohibiting it from helping to increase state test scores. More information is needed on how classroom teachers use MAP in the local setting; understanding what elements of educational change are present and missing may improve student outcomes.

Problem Statement

The purpose of MAP is to provide one common assessment that gives information about the skills that students have mastered, the skills that need to be retaught, or the skills that are ready to be introduced (Northwest Evaluation Association, 2019). However, in a rural Midwestern school district, MAP did not yield the expected improvements in student outcomes. MAP was originally adopted by the district in 2013 for Grades K-4 in English Language Arts (ELA) and mathematics. By the 2019-2020 school year, MAP was implemented in Grades K-12 in ELA, mathematics, and science. Despite teachers being trained to use MAP and having access to MAP data in order to design instruction and set learning goals—and despite no changes in state testing or curriculum that might have affected MAP outcomes—state test scores did not increase; instead, scores dropped across all grades, K-12. Eleven academic indicators were met in

2018, prior to MAP adoption, but only seven were met in 2019 after MAP was implemented. Annual scores by grade level fluctuated in ELA, mathematics, and science by as much as 20 points year to year, since 2015, as depicted in Table 1 using ELA as an example.

Table 1

State ELA test scores by grade 2015-2019

Grade	%				
	2015	2016	2017	2018	2019
3	84	69	81	81	86
4	75	67	81	71	79
5	83	63	77	82	74
6	91	72	79	64	69
7	90	81	80	83	86
8	88	61	70	72	72
9	82	65	74	84	78
10	96	55	75	69	75

Note. 80% is passing score needed to meet indicator.

Student cohorts experienced fluctuations of as much as 29 points, as illustrated by Table 2, again using ELA as an example.

Table 2

State ELA passage scores by cohort, 2015-2019

Class ¹	%				
	2015	2016	2017	2018	2019
2024	84	67	77	64	86
2023	75	63	79	83	72
2022	83	72	80	72	78
2021	91	72	70	84	75
2020		81	61	74	69
2019		90	88	65	75

¹Indicates graduation year for student cohorts beginning at Grade 3-Grade 8. For example, Class of 2024 indicates student cohort from Grade 3 in 2015, Class of 2023 indicates Grade 4 cohort in 2015, and so on.

Note. 80% is passing score needed to meet state indicator.

This reduction in academic indicators and the uneven progress year to year, by grade level and within cohorts, suggest a gap in practice surrounding the way teachers use MAP data. Effective educational change requires that (a) teachers use student data to design instruction, (b) teachers work together collaboratively through professional development, and (c) teachers partner with students to set learning goals (Fullan & Langworthy, 2013). A gap in this practice during the educational change process may have impeded the desired improvement in student achievement.

Kippers, Wolterinck, Schildkamp, Poortman, and Visscher (2018) found that teachers only spend 10–25% of their lesson planning in self-assessment, and only 25–50% of instruction is driven by data; the authors suggested that more research be

conducted on how teachers use data to design instruction. Data-driven decision-making is necessary to prevent curriculum and instruction decisions based on opinions (Hamilton et al., 2009; Mandinach & Jackson, 2012). Poortman and Schildkamp (2016) stated that there was a disconnect between what teachers learn in professional development about the use of data and what happens in the classroom and concluded that more research is needed on teacher practice in using data to design instruction. McKay and Dean (2017) argued that teacher application of feedback on the strengths and weaknesses of their practice might affect student outcomes on achievement tests when the information is used to change instruction. Along with data about instruction, student voice must also be included for change to occur (Fullan & Langworthy, 2013). However, further research is needed on teachers' practice in using data to design instruction, find gaps, and plan action steps with current students in mind (McKay & Dean, 2017). Applying the lens of an effective change framework may reveal strengths and weaknesses in implementation of innovation (Fullan & Langworthy, 2013). In the target school district, a gap in the educational change process (use of data, collaboration of teachers, and setting goals with students) may have impeded the desired improvement in student achievement following MAP implementation. Teachers' perspectives on the implementation of the MAP implementation may suggest factors that contributed to the lack of improvement in student outcomes.

Purpose of the Study

The purpose of this qualitative study was to better understand teacher practice regarding MAP implementation because it did not yield the expected improvements in

student outcomes. The problem that is the focus of this study is that the educational change represented by implementation of the MAP assessment in a rural Midwestern school district has not resulted in expected improvements in student outcomes. Fullan and Langworthy (2013) stated that essential elements of educational change include teachers using student data to plan instruction, collaborating with colleagues, and engaging students in creating conditions for success. Although educational change components were incorporated in MAP implementation in the target school district, state test scores have not improved. Teacher practices in implementing the educational change represented by MAP may indicate factors that contributed to the lack of improvement in test scores. Exploring teacher practices regarding the implementation of MAP as an educational change supports the purpose of this study.

Research Questions

Effective implementation of instructional resources is critical for effective implementation of educational change (Fullan, 2006). With no improvement in the target district in state test scores since MAP was implemented, it was necessary to explore teachers' perspectives to learn what may have impeded educational change in the target school district. In this study, I explored how teachers describe their practice of MAP implementation. The following research questions (RQs) guided the study:

RQ1: How do teachers describe using individual student MAP diagnostic assessment data to design meaningful learning experiences?

RQ2: How do teachers describe their engagement in professional learning opportunities for using MAP diagnostic assessment data to differentiate instruction?

RQ3: How do teachers describe partnering with students in their learning and using MAP diagnostic assessment technology to set learning goals, make instructional innovations, and achieve student learning outcomes?

Better understanding the information about the change process in the local school will provide essential data to address the gap in practice.

Conceptual Framework

The conceptual framework for this study was change theory, as described by Fullan and Langworthy (2013), and based on Fullan (2006). The theory provided a framework of necessary components to create lasting change for school improvement. One of the components is that change must include the voice of all staff involved in educational reform, specifically teachers, to understand what is happening in the classroom (Fullan, 2006). According to Fullan and Langworthy (2013), educational change allows deep learning to happen; but change occurs only when teachers examine learning conditions for their effect on student learning. Another component of change theory is that, for an initiative to successfully increase student achievement, teachers must be motivated intrinsically and engaged in the continuous improvement of instruction and learning. Often, motivation is accomplished by providing opportunities for teachers to feel they have a voice in the process (Fullan, 2011). The inability to motivate teachers to invest in the initiative prevents improvement (Fullan, 2006).

Fullan and Langworthy (2013) adapted Fullan's (2006) original theory to provide a clearer framework that can be used to centralize teachers as change agents and directly affect student achievement. The first component of change theory is to empower teachers to design meaningful learning experiences. Teachers must know where their students are, individually, in their learning and they must challenge them to higher levels of skill mastery (Fullan & Langworthy, 2013). Teachers receive reports from MAP that list each student's performance; it creates tiered groups for small group and individual instruction. The second component of change theory is the need to engage teachers in professional learning opportunities. Teachers must continue to develop skills and engage in professional conversation with one another to improve their decisions about their students (Fullan & Langworthy, 2013). According to an administrator in the target district, teachers have received initial and ongoing professional development in MAP and all have common planning time to discuss data and student needs. The final component of change theory is that teachers need to partner with students to set personal learning goals. According to Fullan and Langworthy (2013), teachers must establish relationships with students to set goals, support progress, and unleash each student's potential. This process is illustrated in Figure 1.

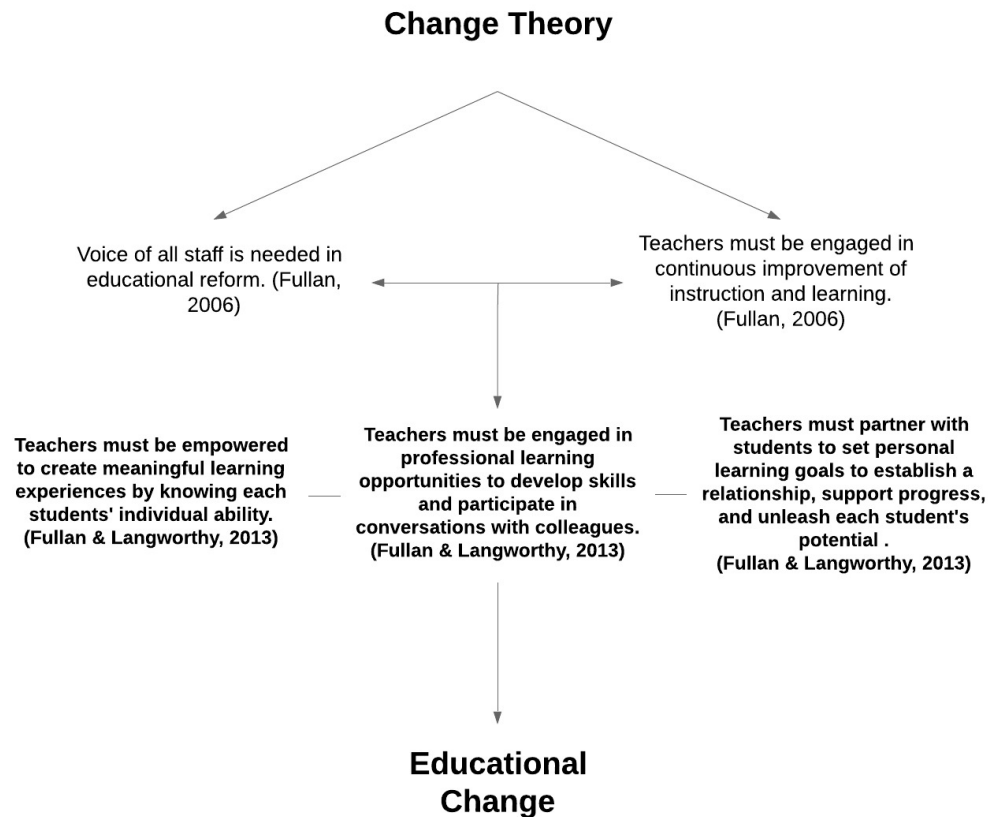


Figure 1. Fullan and Langworthy's educational change process.

An administrator reported that the district requires that teachers meet with students and set learning goals; although teachers are given an achievement goal automatically by MAP, teachers and students together may modify the goal to close learning gaps. The research questions in this study reflect these three components and explore teachers' perspectives on MAP as an educational change intended to increase student achievement.

Nature of the Study

I conducted this study using a basic qualitative approach; interviews were conducted to obtain a rich description of the process by which a specific educational change was implemented and the extent to which teachers embraced it (Burkholder, Cox,

& Crawford, 2016; Ravitch & Carl, 2016). Interviews allowed for a closer perspective to capture each individual's point of view (Denzin & Lincoln, 2013). I used a semistructured, topical interview, designed to look for specific facts or descriptions (Rubin & Rubin, 2012) to learn about teachers' perspectives on MAP. I created an interview guide based on the research questions and aligned with the framework. I asked a doctoral-level expert in the field to review my interview questions to confirm construct validity and alignment with the study's purpose. I audio-recorded and transcribed the interviews and then analyzed the data using open coding, following the protocol suggested by Saldana (2015).

The interviewees were certified teachers of ELA, mathematics, and science from a rural, Midwest school district. With the permission of the Walden University Institutional Review Board (Approval No. 07-10-20-0313990), I interviewed three teachers in each of the district's four grade-leveled buildings, for a total of 12 teachers. In 2019, 70 teachers in the primary, intermediate, middle, and high schools of the target district served nearly 1400 students and had MAP data available. Therefore, a sample of 12 of these teachers represented 17% of all teachers in this district. This random sampling allowed teachers from varying backgrounds, grades, and content areas to be included. The approach allowed me to obtain teachers' perspectives on the implementation of the MAP assessment to enact educational change. Patton (2002) concluded that random sampling was effective in qualitative studies to obtain information-rich data from individuals knowledgeable about the phenomenon under study.

Definitions

Adaptive assessment: Multiple choice assessments that adapt to student responses by altering the order questions are asked to find the academic level of the student (Pezzino, 2018). If a student chooses the wrong answer, the assessment will provide additional questions on a lower level to determine what part of the question the student does not understand; if they answer correct, questions will gradually get harder until students no longer answer correctly the majority of the time.

Classroom teacher: For the purpose of this study, a classroom teacher is a certified teacher in Grades K-12 who teaches ELA, mathematics, or science in general education classrooms (e.g., is not a special education teacher), and who has ongoing responsibility for that class (e.g. is not a substitute teacher).

Diagnostic assessment: Assessment given prior to teaching that provides formative feedback about what a student does or does not know; the assessment informs teachers about what their instruction should include and how lessons need to be adapted to meet the needs of the students (Raposo-Rivas & Cebrian-De-la-Serna, 2019).

Differentiation: Practices used within a classroom that allow the needs of all students to be met through varying strategies, providing a level playing field for all students within a heterogeneous grouping (Gumpert & McConnell, 2019).

End of course assessments: Tests designed by the state in seven high school courses (American history, American government, ELA I, ELA II, algebra, geometry, and biology). Students earn one to five points on the tests based on their scores. Students must obtain 18 accumulative points from these tests to meet graduation eligibility.

High school: For the purpose of this study, high school refers to a rural public-school district in the Midwestern United States housing Grades 9-12.

Intermediate school: For the purpose of this study, intermediate school refers to a rural public-school building in the Midwestern United States housing Grades 2-4.

Intervention: For the purpose of this study, intervention refers to the practice of creating learning opportunities for students who are not meeting grade level standards or concepts (Meyer & Behar-Horenstein, 2015). During an intervention, a teacher specifically works with individual or small groups of students on a skill deficit to close the gap between what the student can do and what is expected for their designated grade level.

Middle school: For the purpose of this study, middle school refers to a rural public-school building in the Midwest United States housing Grades 5-8.

Primary school: For the purpose of this study, primary school refers to a rural public-school building in the Midwestern United States housing kindergarten and Grade 1.

State assessments: Assessments mandated by the state and administered thrice yearly. Students must take ELA assessments in Grades 3-10, mathematics in Grades 3-10, science in Grades 5, 8, and 10, and social studies in Grades 10 and 11.

Assumptions

This study was based on seven assumptions. (a) The first assumption was that teachers intended to enact the state standards established and approved by the state board of education and use curricular materials approved by the district's board of education.

This assumption was necessary because MAP creates reports teachers use based on the state standards. (b) I assumed that teachers incorporate MAP testing into their classroom planning and instruction with fidelity, testing students in English language arts, mathematics, and science three times per year. This assumption was necessary because the data from these assessments are needed for teachers to make changes to their instruction. (c) I assumed that MAP is aligned to state standards, as administrators in the state purport. This assumption was necessary because it is necessary for MAP to be aligned if it is to help strengthen student deficits. (d) I assumed that all teachers have access to teacher reports within the MAP system. This was necessary if teachers used the data to drive their instruction. (e) I assumed that participants were representative of teachers generally; this was necessary if the findings are to help strengthen district practices. (f) I assumed teachers were truthful and complete in their interview responses; this was necessary for the data to answer which change elements were present or absent during MAP implementation. These assumptions about teacher fidelity to the curriculum and testing programs match those of school administrators generally, who are charged with overseeing the school structure (Ozreberoglu & Caganaga, 2017) and assumptions about participants are typical of studies based on interviews (Ravitch & Carl, 2016). (g) I further assumed that falling test scores were the result of inadequate implementation of MAP and were not the result of other system-wide factors. As an administrator in the target district, I am unaware of any such factors that would negatively affect teachers or instruction across all grade levels.

Scope and Delimitations

The scope of this study comprised the perspectives of teachers on MAP implementation to determine teacher accounting of essential elements for successful educational change that were present or absent in the implementation. Data for this study were delimited to include interview responses of three certified teachers in each of the district's four school buildings, for a total of 12 teachers. The primary school building houses kindergarten and Grade 1, the intermediate school houses Grades 2-4, the middle school houses Grades 5-8, and the high school houses Grades 9-12. The district expanded the use of MAP across all grades, K-12. Since state testing is implemented differently at each building, based on the ages and instructional level of the students, I reviewed teacher practices district-wide to understand teachers' experiences with the implementation of MAP. Only teachers of ELA, mathematics, and science were invited to participate; classroom aides and administrators were excluded because they do not use MAP data in instructional decision making. Social studies and elective teachers were also excluded because MAP is not used in those subject areas.

I also considered the theory of formative assessment as a potential conceptual framework. Since MAP was suggested in other research studies to increase achievement, the problem was not in the effectiveness of MAP as a formative assessment, but rather the elements needed to be present for an assessment to successfully increase student achievement. Fullan and Langworthy's change theory was more suitable to determine elements needed for any educational change. Using change theory allowed the findings of the study to be transferable to other districts within the state, since a majority of public

districts within the target state use MAP (Northwest Evaluation Association, 2019) and have the same required state assessments to prepare students to pass. Schools in other states that use MAP and similar assessment programs could also find the results of this study valuable.

Limitations

The information from this study was limited to interview responses from public school classroom teachers of ELA, mathematics, and science in a small, rural district in the midwestern United States, and so results might not be transferable to urban populations, other regions, or other small, rural school districts. These limitations were necessary because teachers of the named content areas but no others are expected to use MAP data to guide their practice, and because the target district is where MAP scores were noticed to have declined. Another limitation was that the district leadership team implemented MAP assessment to meet local concerns and conditions, some of which may have been unaffected by the implementation of MAP and may have independently affected testing results. An additional limitation of this study was that data were gathered through interviews, relying on informant experiences and personal vantage points, and so are subjective (Ravitch & Carl, 2016). These limitations are inherent in the study location and design and are typical of interview-based studies (Ravitch & Carl, 2016).

My role as researcher presented an additional limitation, in that all choices made in conducting the study, in analyzing data, and in drawing conclusions from the results were influenced by my own perspectives and biases, of which I may not have been aware. In particular, I serve as an administrator in the target district designated by the

district superintendent with responsibility to oversee curricular and instructional initiatives and support teachers through professional development; I do not evaluate any of the teachers, nor do any of the teachers report directly to me. I guarded against potential bias by using the same, semistructured interview guide with all teachers, and by encouraging teachers to freely give their opinions. So that I remained objective throughout each interview, a necessary characteristic of the researcher (Leung, 2015), I took notes during the interviews and record them on the interview guide as a way of monitoring my thinking and of keeping my thoughts separate from those of the participants.

Significance

This study may be significant because it gave school district administrators information about possible barriers that teachers experience in using MAP data to guide instruction. Mandinach and Jackson (2012) suggested that factors such as training, effective technology, and time for data collaboration are vital elements that, if lacking, may prohibit teachers from using data; there is a need to identify current practices to find these barriers. The results of this study may help the district and its teachers to provide an appropriate education for each student to increase student success. The analysis of teachers' practices regarding MAP ultimately may help the school to close the gap in student achievement, as students feel empowered by more targeted instruction (McKay & Dean, 2017). By understanding classroom teacher practices of MAP and MAP data, the school district may improve the use of assessment to enhance student achievement, resulting in positive social change, which may include an increase in the number of

academic standards the district earns on the district report card, an increase in teacher efficacy, and an increase in the number of students meeting or exceeding state proficiency scores. As a result of this study, students may be better prepared for learning and graduates better prepared for their college or career choice.

Summary

While schools continue to strive for higher levels of academic achievement, the ability to raise test scores is still dependent on the need to practice research-based strategies using available data. Current research emphasized the need for districts to implement policies and procedures with fidelity, while also using proven, formative, diagnostic assessments to prepare students for state testing; school staff are required by the state to use assessment results to determine grade advancement and graduation (Betts et al., 2017; McKay & Dean, 2017). This study determined how MAP was being used by classroom teachers and provided insight into why test scores have failed to match expectations. Findings from this study may shape the district's practices, policies, and decision making for years to come.

In the next chapter, I present a review of current literature, including literature about change theory and the role of assessments in teaching practice. The literature highlights the gaps in current research and in practice to delineate the value of the present study. In Chapter 3, I explain the research design and methodology in conducting my study, including the data analysis plan and ethical procedures. In Chapter 4, I present the results from this study. I describe the setting, how I collected data, and the process I used for data analysis. In Chapter 5, I present an interpretation of the findings, describe

limitations of the study, and provide recommendations for future research, implications for practice, and the study's conclusion.

Chapter 2: Literature Review

In a rural Midwestern school district, the Measures of Academic Progress (MAP) adaptive assessment did not yield the expected improvements in student outcomes. Therefore, the purpose of this qualitative study was to better understand teacher practice regarding MAP implementation. In this review of literature, I present elements necessary for successful MAP implementation and the importance of fidelity in implementation, how data are used to make instructional decisions as part of school improvement, and the ways that barriers, such as budgetary concerns, lack of buy-in, and limited resources, often limit the effectiveness of school improvement. In this chapter, I will begin by explaining the strategies I used to search the literature, and then I will expand on the conceptual framework presented in Chapter 1. In the remainder of this chapter, I will review recent literature related to the key variables and concepts of this study.

Literature Search Strategy

I conducted the literature review using the following database: Thoreau. The findings were limited to peer-reviewed journals articles published since 2015. Ulrich's peer-review tool was used to verify that articles were from trustworthy journals.

The iterative process began with the following search terms: *teachers' perspectives, educational assessments, data-driven decision making, student centered learning, and professional development*. This search led to understanding the difference between how schools operate in a rural versus urban settings and how professional development has often hindered school change. The iterative process led to a need to know more about these ideas, and led to adding several search terms: *rural education,*

job-embedded, professional development, barriers to data use, barriers faced by rural schools, state testing, student goals as part of school improvement, and technology's role in using classroom data. Terms related to the conceptual framework of this study included *educational change, change theory, and role of teacher in initiating change.*

Conceptual Framework

The conceptual framework for this study was change theory, as described by Fullan and Langworthy (2013) and based on Fullan (2006/2011). The conceptual framework follows the work of Fullan and Langworthy (2013), who adapted Fullan's (2006) original theory. Fullan and Langworthy stated that teachers must be empowered to design meaningful learning experiences, must be engaged in professional learning opportunities, and must forge partnerships with students to set learning goals.

Fullan (2006) listed seven premises necessary for what he called "change knowledge" (p. 8), a powerful driving force to implement strategies that get results. The premises included a focus on motivation, capacity building, learning in context, changing context, a bias for reflective action, trilevel engagement, and persistence and flexibility. Strategies created around these premises serve to motivate teachers, create an awareness of why there needs to be a change, and make the change relevant to the local setting; likewise, it is important that the implementation be persistent, yet flexible, to ensure fidelity. Fullan stated that the collective group must be motivated and engaged in the process of change while also giving it time; if there is no gain on motivation over time, it will fail. A change for the sake of change will be unfruitful, whereas a meaningful change promotes a need to dig deeper and think critically about what a group or organization is

doing to move towards something better (Couros, 2015). For change to initiate movement, certain drivers must be in place for whole system reform to take place.

Fullan (2011) established the drivers necessary for change to lead to systemic reform. These drivers include fostering intrinsic motivation of teachers and students, engaging educators and students in continuous improvement of instruction and learning, inspiring collective team work, and affecting all teachers and students. These drivers improve the culture of the organization, and culture is the key to transformation (Ritchhart, 2015). Culture is the driver necessary for change, yet often it is overlooked as accountability takes priority as institutions put a higher focus on teacher evaluations hoping those reports will increase teacher efficacy (Fullan, 2011). Hattie (2009) rated feedback as a powerful determinant of student learning, yet without having feedback embedded into the culture of the school, teachers are not motivated to improve their practice. Leana (2011) stated that for effective change, feedback only works when conversations about teaching and learning are ongoing, and it is the relationship and ties among colleagues that leads to school wide change and increases student achievement, not just having high ability teachers or relying on teacher evaluations to make a difference. Ultimately, long-lasting educational change requires capacity building, which enhances the culture that drives teaching and learning (Fullan, 2011).

In relation to the current study, two of Fullan's components were specifically targeted as the culture in which MAP was implemented is investigated. First, Fullan (2006) stated that change must include the voice of all staff involved in educational reform, specifically teachers, to understand what is happening in the classroom. Another

component of change theory is, for an initiative to successfully increase student achievement, teachers must be motivated intrinsically and engaged in the continuous improvement of instruction and learning (Fullan, 2006), often accomplished by providing opportunities for teachers to feel they have a voice in the process (Fullan, 2011). Fullan and Langworthy (2013) applied Fullan's (2006) original theory to teaching practice. They stated that implementation of an educational change in the classroom must include teacher empowerment to design meaningful learning experiences, teacher engagement in professional learning opportunities, and teacher partnerships with students to set learning goals.

Teachers are the creators of lessons individual students receive. Fullan and Langworthy (2013) highlighted the need to see teachers as designers, recognizing the need for lessons to incorporate targeted state learning goals with the specific needs and learning styles of each student in the classroom. Knowing where each student is on their individual learning continuum and knowing where students need to be by the end allow the teacher to create powerful learning experiences (Fullan & Langworthy, 2013). These powerful learning opportunities happen when teachers combine what students already know with new content by changing and combining curricular material based on each student's needs (Hattie, 2011). This means that teachers must know each student's unique abilities, and it moves the focus away from the concept that a teacher's role is simply to deliver content knowledge (Fullan & Langworthy, 2013).

For teachers to be able to align individual student needs with curricular goals, effective professional development is necessary to improve pedagogical practices.

Teacher expertise is continuously developed by working with other educators and practicing making decisions about students' needs (Fullan & Langworthy, 2013).

Educators learn best when they are challenged to think and draw conclusions on their own through professional development activities that lead participants to the right conclusions, allow participants to reflect and share, and provide ample opportunities for adult learners to apply their learning in simulated and real-world experiences (Bambrick-Santoyo, 2010). Professional development advances teaching practices when opportunities are afforded for teachers to design, implement, and share in collaborative settings (Hattie, 2011). As teachers spend more time collaborating with other professionals, the ability to react and make decisions to students' immediate needs increases, bettering the opportunities given to all students (Fullan & Langworthy, 2013).

A final component within the framework is the need for partnerships to exist between teachers and students to accelerate learning. Learning is rooted in relationships, and teachers can use this relationship to enhance student achievement and unleash each student's full potential (Fullan & Langworthy, 2013). Goal setting motivates student performance (Roy & Saha, 2019) and increases student self-efficacy (Won, Anderman, & Zimmerman, 2019). Strong partnerships allow for the exploration of individual experiences that can shape lessons and build trust to close learning gaps and enrich the curricular goals and needs of the students (Fullan & Langworthy, 2013).

I used the framework to ground the study by establishing the conditions necessary for an educational change to be effective, which guided me in determining what should have been in place when MAP was implemented. The research questions guided me in

identifying which of the characteristics designated by Fullan and Langworthy (2013) were present or absent during MAP implementation, and teachers' role in the process that may have limited the success of the assessment program from enhancing student achievement. In the following sections, I address how assessments are used, how the data from these assessments may drive instruction, the supports necessary for teachers to be successful, and barriers that interfere with the use of assessment data.

Purpose of Diagnostic, Adaptive Assessments

Pressure for school accountability through testing has increased significantly over the past 2 decades (Penuel, Meyer, & Valladares, 2016) and the target state exceeds testing required by ESSA. According to the state's Department of Education, these assessments are intended to prepare students for jobs that do not yet exist which experts predict 65% of secondary students will fill. Paul et al. (2019) found that standardized testing results are good predictors of future mathematic and reading abilities. Yet, results from these assessments must be about improving student learning, using data as evidence of what improvement needs to take place (Reder & Crimmins, 2018). Though accountability is at an all-time high, the focus for school improvement must remain on inquiry and continuous improvement to transform schools into innovative learning centers that prepare students for a modern world (Magen-Nagar & Steinberger, 2017). Educators must find a balance between creating students who are capable of innovation while also ensuring each student possesses the necessary skills to pass a standardized assessment. However, accountability demands force educators to spend time on test preparation and forgo innovative learning experiences (Li & Xiong, 2018).

State Assessments

State assessments are designed to gauge how equipped students are to enter college or the workforce (Ohio Department of Education, 2018). Districts use these scores to audit curriculum and instruction, yet these high stakes tests must not be the only measure used to initiate changes in the classroom because authentic student learning could be sacrificed (Couros, 2015), and teachers must have the tools necessary to address skill deficits (Whitlock, 2017). Betts et al. (2017) concluded that districts should mandate diagnostic, adaptive tests that are proven to yield results. District mandates allow for consistency of testing and, with data to support the necessity of the tests, for teacher buy-in and for teacher use of data to drive instruction (Betts et al., 2017). Lack of coherence prohibits vertical alignment and uniformity in what is taught (Harris & Reynolds, 2018). Identifying a diagnostic testing system that provides accurate information to teachers on each student's performance is essential to moving an educational system forward (Eggen & Stobart, 2015). Schools also must make sure the assessment is valid and aligned to state expectations (Eggen & Stobart, 2015).

Curriculum Driven by Assessment Scores

While school boards and top district administrators officially adopt curriculum programs, what happens in the classroom is often different than the adopted curriculum map; teachers serve as intermediaries who interpret and enact curriculum based on the students they are currently serving (Harris & Reynolds, 2018). These decisions are often based on diagnostic, adaptive testing programs purchased and provided by the district, yet research is limited on the validity of such tests (Betts et al., 2017). Assessments must be

carefully chosen to provide teachers with the information necessary to inform instruction (Datnow & Hubbard, 2015). Teachers use these data to make decisions that will affect students for years to come (Siuty, Leko, & Knackstedt, 2018).

School districts often do not adequately research whether testing programs provide teachers with usable data that are needed to enhance classroom instruction and increase student achievement (Li & Xiong, 2018). In addition, districts often use assessment results only to track students by ability, which reduces both student learning and post-secondary opportunities (Dumont et al., 2017). Educators are often inadequately trained to use data to make educational decisions; teachers often only view the analysis of data as a way to be evaluated by their building administrator (Paufler, 2018).

Administrators and building leadership teams must decide how students will be prepared to be successful on state tests, while not compromising ongoing education efforts (Couros, 2015; Ritchhart, 2015).

Differentiation

Systematic decisions that provide teachers with guidelines, and empower local classroom decision making, allow differentiation needed for each student to meet state standards (Siuty et al., 2018). Today's classrooms are considered more demanding than ever before due to diversity, culture, learning styles, and disabilities (Civitillo et al., 2016). As classroom sizes increase and more diversity is visible, it is important for data to be readily available for teachers to design instruction; diagnostic assessments that adapt to individual student needs helps differentiation to take place by providing teachers with information what each student can and cannot do (Betts et al., 2017). Adaptive

assessments, such as MAP, are designed on the presumption that the probability of success on a given assessment is affected by the age and background knowledge of the test taker, therefore, placing questions on a quantitative continuum to identify the actual ability of the respondent (Kean et al., 2017). Adaptive assessments create a prediction about future success that is estimated based on the performance from the original assessment (Liu & Yang, 2018) and include Rasch scaled scores, margin of error, and standard deviations to provide information on how a student will perform in the future and provide ongoing diagnostics on how students are performing (Huang, 2015; Kufeld, Domina, & Hanselman, 2019). Lou, Blanchard, and Kennedy (2015) concluded that providing teachers with adaptive assessments that diagnose student competency and provide feedback about performance was necessary for effective practice. Longitudinal adaptive assessments increase the effectiveness of predictions about how students will perform in the future (Kean et al., 2017). Adaptive assessments, though multiple choice in nature, seek to determine why a selection was made through asking follow-up questions to increase the informativeness of the assessment (Nickerson, Butler, & Carlin, 2015).

MAP as a Diagnostic, Adaptive Assessment

The target district uses MAP, an assessment given to approximately 11 million students in over 9,500 schools (Northwest Evaluation Association, 2019). The MAP system provides educators with reports on skills that are mastered, need to be retaught, or ready to be introduced, essentially generating individualized lesson plan guidance for teachers. MAP creates a prediction about how a student is likely to perform on future

assessments (including state tests, ACT, and SAT) using a Rasch Unit scale score to rank students into percentiles regardless of age or grade. MAP then uses cut scores to accurately predict how a student will perform on a state assessment based on grade and subject (Kuhfeld et al., 2019). Adaptive assessments allow for interactive questions that are essential for measuring what students know (Pezzino, 2018), and the lesson planning guidance, combined with the state assessment prediction, allows teachers to differentiate instruction (Northwest Evaluation Association, 2019). Adaptive assessments like MAP allow schools to see how students are performing in meeting state established learning standards and should be given in equal time increments throughout the year to track student progression to prepare for state assessments (Kuhfeld et al., 2019).

Data-Driven Instruction

Data are abundantly available to today's educators, and the last decade has increased the pressure for schools to use data to guide improvement (Little, Cohen-Vogel, Sadler, & Merrill, 2019). Data analysis helps to identify areas of weakness to initiate school-wide improvement, yet there is still a lack of clear understanding on how teachers use data to shape their decisions (Mandinach & Gummer, 2015). Data-driven decision making increases the effectiveness of lessons, improves accountability, and enhances student learning (Hora & Smolarek, 2018). When implemented correctly, data driven decision-making leads to increased student achievement (Cech, Spaulding, & Cazier, 2018; Schildkamp & Poortman, 2015). Ongoing data analysis ensures the improvement process is continuous and creates a system that consistently collects, interprets, and modifies processes to implement new strategies and curriculum with fidelity while

bettering the student experience (Gummer & Mandinach, 2015). The data from these assessments allow teachers to see how students are doing as a whole as well as to create differentiated learning opportunities, plan units, and check if established learning strategies are successful (Mandinach & Gummer, 2015). Assessments provide specific feedback to teachers on students' strengths and weaknesses, and review of data allows schools to close gaps in student achievement (McKay & Dean, 2017). The continuous improvement process describes where an organization is now, how the organization got to be where it is, where the organization wants to be and how the organization is going to get there, and then helps determine if the action plan is making a difference (Bernhardt, 2016).

All students can succeed when data are used to drive instruction (Schildkamp & Poortman, 2015). Bernhardt (2016) stated that data help teachers adjust instruction by describing what each student can do and cannot do. Data allow teachers to make daily, weekly, and even monthly instructional decisions on how to group students to provide differentiated learning experiences (Mandinach & Gummer, 2015). Planning lessons with an understanding of what each student needs allows teachers to reteach what students do not understand and enrich lessons for students who are ready to move on (Park & Datnow, 2017). Using data to drive instruction shifts the focus to ensuring students are achieving the best of their ability (Datnow & Hubbard, 2015). Basing instruction on the needs of the students and not the curriculum guide or textbook transforms the classroom to be student centered, and the role of the teacher shifts to that of a facilitator (Ali, 2019). Brouwer, Jansen, Severiens, and Meeuwisse (2019) concluded that student centered

learning environments increased a student's feeling of belonging, which directly increased academic success, positively influenced peer interactions, and created a safe environment. The environment created from designing instruction based on student needs improves student enthusiasm and motivation to learn by matching student needs with students' personal interests (Zheng, 2017).

Student Goal Setting

Studies show students are increasingly bored as they move into higher grades (Raccanello, Brondino, Moe, Stupnisky, & Lichtenfeld, 2018). Meeting the academic needs of all students increases engagement; the more engaged students are increases how they perform in the classroom and on high stakes tests (Knekta, 2017; Putwain, Becker, Symes, & Pekrun, 2018). Engagement is increased when teachers work with students to set learning goals; goals play a critical role in self-regulated learning, and when students have help in establishing high quality goals, achievement increases (McCardle, Webster, Haffey, & Hadwin, 2017; Ritzema, Deunk, Bosker, & van Kuijk, 2016). Goal setting, combined with expected growth norms, such as those provided by MAP, have led to improved outcomes for all students (Haas, Stickeny, & Ysseldyke, 2016). Goal setting increases conversations between teachers and students, heightens the expectations of each student, and enhances the engagement and role students believe they hold within the classroom environment (Hershkovitz, 2015).

Supports Necessary for Teachers to Use Data

Data-driven instruction drives achievement when educators collaboratively work to create solutions together (Schildkamp & Poortman, 2015) and when they do not focus

solely on accountability (Fullan, 2011; Orland, 2015). A culture of data creates high expectations, and with buy-in of crucial faculty leaders, improved participation by other staff members as time goes on (Farley-Ripple & Buttram, 2015). The establishment of a data culture must begin with central office support and vision; a direct correlation exists between district leadership and student achievement (DuFour & Fullan, 2013). The creation of a data culture is critical for the elements to continue to thrive; school leaders must focus their attention on creating professional learning opportunities that engage teachers in analyzing their student data and how they will use it during instruction (Gerzon, 2015; Lynch, Smith, Provost, & Madden, 2016). Professional development, in conjunction with assessments, allows teams to compare results and provides content-specific strategies to meet the learning needs of students and to train teachers to know the right questions to ask when working together (Jimerson & Wayman, 2015). Creating close knit relationships among colleagues increases the willingness of poor performing teachers to change through collaboration built on mutual trust and respect (Hartman, 2017)

Professional Learning

Job-embedded professional development allows teachers to learn about data analysis and provides time for teachers and their teams to look at their own student data. Bocala and Parker-Boudett (2015) shared that training is one of the most critical elements in creating a data-driven culture, yet educators lack the skills to understand how to fully analyze the considerable amount of data at their fingertips (Hora & Smolarek, 2018; Knipe, 2019). Schools are information rich but helping teachers to uncover which data

are the most useful to instructional planning is critical, especially with frequent changes in the field of education (Gurgur, 2017; Sorensen, 2018). Harris and Reynolds (2018) suggested that curriculum may need to be changed annually to meet the needs of students. Allowing teachers to be together to review data allows departments to talk about alignment and coherence and creates professional learning communities that help to increase teachers' use of data (Marsh, Bertrand, & Huguet, 2015). Educators must be provided with training that allows them to identify why they need to learn about using data, to feel treated with respect, to be heard, and to share personal experiences; then, the training must be applicable to the teacher's role in the classroom and show how the training can solve existing problems (Knowles, Holton, & Swanson, 2015). Professional learning communities help with this process because they are designed to place everyone in a collaborative setting where their voice helps to drive school-wide improvement, and to use time to discuss challenges and strategies that have worked (Schildkamp & Poortman, 2015).

Technology to Support the Use of Data

Though time with colleagues is an important component of learning how to use data, effective technology also needs to be used to properly make decisions. Technology aids in increasing the use of data by providing immediate and informative feedback (Elmahdi, Al-Hattami, & Fawzi, 2018); the instantaneous results allow teachers to quickly make decisions about their lessons to improve their effectiveness in meeting the needs of students (Raposo-Rivas & Cebrian-De-la-Serna, 2019). It is also necessary to

have appropriate data tools to collect, store, and synthesize student data, especially when data is created from multiple assessments (Filderman & Toste, 2018).

Barriers to Data Driven Instruction

Though research demonstrates the benefits of using data to guide and inform instruction, schools lack the management or resources to implement such strategies with fidelity (Dayan & Bano, 2018). Overshadowing the need to use data to make instructional decisions are two hurdles: the use of teacher evaluations based on student data and building leadership teams using data only to determine which students should be placed with which teachers (Cohen-Vogel, Little, & Fierro, 2019). Though ESSA no longer requires student data to be part of the evaluation cycle, the target state still bases 50% of a teacher's evaluation on how students perform on the state assessment. The evaluative practice based on data has not increased teacher job satisfaction, has negatively influenced the use of data, and has led to no increases in student achievement; instead, the focus should be using data to have conversations about instructional improvement (Downing, 2016). When a teacher has no state assessment available, local diagnostic testing is used to show student growth. The inability of principals to shift teachers' view of data prevents school staff from embracing the power that data have to transform classrooms, instead producing only skepticism (Williams & Crates, 2015).

Another problem is rural schools' inability to provide ongoing professional development that is embedded into the school day (Broad, 2015). Rural schools do not have a large pool of substitutes, and this shortage prevents teachers from receiving the time necessary to review student performance data. School schedules also prevent grade

or content teachers from having the same planning time during the day to meet and discuss data (Kimbrel, 2018). The number of data coaches or experts who can help facilitate training on how to use data is also limited in rural locations, so that veteran teachers are often the only resource for new or struggling teachers (Hartman, 2017).

The use of diagnostic data is often determined based on district finances. Though a district may purchase a vendor assessment, specific reports, teacher training, or online databases are extra costs sometimes cut from the budget (Kimbrel, 2018). Without full access to the diagnostic program, proper training, and time for teachers to collaborate, the vendor assessment, regardless of how aligned to state standards or accurate it is in making predictions, cannot help to increase achievement (Brigandi, 2019; Lakin & Rambo-Hernandez, 2019). With increased cuts to local districts, professional development and training resources that require financial expenditures are limited due to budgetary decisions necessary to keep schools in operation (Kimbrel, 2018).

Summary and Conclusions

In this chapter, I defined the conceptual framework for my study, explained the strategies used to conduct the literature search, and presented key information necessary from varying research studies to demonstrate the need to conduct the current study. The literature revealed that legislation regarding teacher evaluations has played a large part in schools' use of data, yet when used correctly, data use is a powerful tool to help design and enhance student learning. Barriers such as rural locations, lack of funding, and implementation fidelity have the potential to limit the success of data and of programs designed to institute change in the local education setting. Ultimately, district leadership

must take responsibility for re-defining the purpose of data and creating the opportunities to engage teachers in using data to initiate change, by providing rich professional development, ongoing support, and teacher/student collaboration. The question of how successful administrators in the target district have been in creating a climate supportive of teachers' student-centered data use, given the lack of achievement progress since the implementation of MAP, is central to this study. Yet, it is unknown how teachers use data on a daily basis to work with students to set learning goals, how teachers collaborate while using data, and how data is used to design meaningful instruction. The study may contribute to the research gap of how data are used to design instruction mentioned by Kippers et al. (2018). The purpose of this qualitative study was to better understand teacher practice regarding MAP implementation that has not resulted in expected improvements in student outcomes. The problem in this study was that the educational change represented by implementation of the MAP assessment in a rural Midwestern school district has not resulted in expected improvements in student outcomes.

In Chapter 3, I explain the research design and methodology in conducting my study, including the data analysis plan and ethical procedures.

Chapter 3: Research Method

The purpose of this qualitative study was to better understand teacher practice regarding MAP implementation that did not yield expected improvements in student outcomes. Limited research has been conducted on how teachers view the educational change process and the role teachers play in disseminating educational change. There is a gap in practice on how MAP has been implemented within the local district. In this chapter, I cover the research design and rationale; the role of the researcher; and the methodology, including participant selection, instrumentation, data collection, and a data analysis plan. I also provide sections on trustworthiness and the ethical procedures that guided the study.

Research Design and Rationale

The central concept in this study was the process by which a specific educational change was implemented and the extent to which teachers embraced it. The problem in this study was that the educational change represented by implementation of the MAP assessment in a rural Midwestern school district did not result in expected improvements in student outcomes. The lack of academic improvement raised questions about teacher implementation of essential change processes, as described by Fullan and Langworthy (2013).

To guide my study, I used the following RQs:

RQ1: How do teachers describe using individual student MAP diagnostic assessment data to design meaningful learning experiences?

RQ2: How do teachers describe their engagement in professional learning opportunities for using MAP diagnostic assessment data to differentiate instruction?

RQ3: How do teachers describe partnering with students in their learning and using MAP diagnostic assessment technology to set learning goals, make instructional innovations, and achieve student learning outcomes?

I used the narrative tradition in this basic qualitative study based on interviews. I chose the qualitative design over quantitative due to the need to describe what was occurring in the local setting that was hindering change from taking place (Burkholder, Cox, & Crawford, 2016). The narrative tradition reveals individual lived experiences when investigating a phenomenon (Ravitch & Carl, 2016); it allowed for a new understanding of individual experiences in relation to the phenomenon of how teachers embraced MAP implementation (Burkholder, Cox, & Crawford, 2016) to better understand which elements of the educational change process were present or absent when MAP was implemented. Through individual interviews, I collected stories that were rich in thematic messages (see Rubin & Rubin (2012). In sum, the narrative tradition provided an appropriate lens to determine teachers' perspectives about the problem: that the educational change represented by implementation of the MAP assessment in a rural Midwestern school district had not resulted in expected improvements in student outcomes.

Role of the Researcher

My role in this study was that of an observer-participant, described by Burkholder, Cox, and Crawford (2016) as a researcher who is within the local setting, yet whose focus is only on observing and does not take an active role with teachers on a regular basis. Professional relationships exist between me and study participants as I was a teacher in the district through the 2015-2016 academic year and I was employed by the local educational service center as a curriculum specialist from 2016 to 2019. I was hired by the target district as director of curriculum and instruction beginning in 2019. In this role, I served as a district administrator designated by the superintendent with responsibility to oversee curricular and instructional initiatives and support teachers through professional development. I had no role in MAP implementation or oversight of teacher evaluation within the state or district system; rather building principals complete these supervisory and evaluative duties.

My own bias and relationships were managed by using the same, semistructured interview guide (Appendix A) with all teachers, as recommended by Rubin and Rubin (2012), and by encouraging teachers to freely give their opinions. So that I remained objective throughout each interview, a necessary characteristic of the researcher (Leung, 2015), I kept field notes as a way of monitoring my thinking and keeping my thoughts separate from those of interview participants (Ravitch & Carl, 2016). Because the research was conducted at my place of employment, an ethical concern was the relationship I had with participants as relational considerations are an ethical concern for qualitative research (Ravitch & Carl, 2016). Because I work in the district, I am an

insider, as described by Dwyer and Buckle (2009); and my insider status allowed for authentic engagement with participants. However, I set research boundaries that allowed participants to be transparent while also maintaining confidentiality. I assured participants nothing they shared would be disseminated to their principal or used against them in the professional setting, as suggested by Ravitch and Carl (2016). I confined interviews and any conversations about the study to evenings and weekends; I conducted interviews through teleconference at a time that was convenient to each participant.

Methodology

In this section, I explain the methodology used for this study. I describe the prospective participant invitation and sampling process for this study. Additionally, I explain the instruments for data collection and the content validity of the interview questions. I address detailed procedures for recruitment, participation, and data collection. Finally, I explain the process used to analyze the data.

Participant Selection

The population for this study included K-12 classroom teachers of ELA, mathematics, and science employed at a rural school district in the Midwestern United States. The target district served nearly 1400 students in primary, intermediate, middle, and high schools, and 70 teachers had MAP data available to them. As MAP was only used in ELA, mathematics, and science, only classroom teachers from these content areas participated in this study. Social studies teachers, intervention specialists, and Title I teachers were not included because they did not use MAP data to plan classroom instruction.

I used purposeful sampling to obtain a representation of the teaching body to understand how MAP is used in general across the district. The criterion I applied purposefully is that the participant has worked as a classroom teacher in either ELA, mathematics, or science for at least 1 academic year. I also limited participation by building, to achieve equal or nearly-equal distribution of participants across primary, intermediate, middle, and high school levels. Teachers of electives, social studies, and Title I classes did not have access to MAP, so they were excluded as potential participants. I also excluded teachers who had taught for less than 1 academic year because they may not have participated fully in MAP assessment and data application. All teachers who met the criteria were invited to participate in the study. I selected the first three teachers from each of the four buildings who volunteered to be part of the study.

My resulting sample of 12 classroom teachers represented 17% of the districts' K-12 ELA, mathematics, and science teachers who each had MAP data at their disposal for lesson planning. This sample size was supported by Baker and Edwards (2012), who stated that a qualitative study needs 5–50 participants, depending on the topic. Data from qualitative studies exhibit more variability than do quantitative studies data, and there is no minimum or maximum number of interviews expected in qualitative research because so much of the methodology is dependent on saturation (Baker & Edwards, 2012). Ravitch and Carl (2016) reiterated the idea that qualitative study is dependent on quality over the amount of data, and described saturation as adding to the sample size until nothing new is learned by the researcher. For my study, 17% represented almost a fifth of

the population of teachers using MAP. I knew I achieved data saturation when data from interviews no longer provided any new information.

I invited teachers to participate in my study with the help of the district superintendent, who agreed to share information about my study to potential participants. The district superintendent included information about my study in the monthly digital newsletter that is sent to staff. Interested volunteers clicked a link inside the newsletter that took them to a digital invitation to participate with consent form which included details about the study, including participant criteria, expectations, and the consent process. At the bottom of the consent form, there was another link that took interested participants to a Google form where teachers could respond by a specific deadline with their name, personal email address, content area that they teach, grade level, and if they preferred that I followed up with them through email or by phone. I used this information to qualify participant eligibility for the study. The prescreening questions ended with a yes/no statement for the participant to indicate electronic consent to participate in the study. There was an additional statement that explained to participants that they would receive a copy of their responses in their email and that they may print a copy of the form for their records if desired.

I reviewed teacher interest submissions at the conclusion of the time window and retained for possible selection only teachers who teach ELA, mathematics, or science. I then invited the first three participants from each of the district's four buildings who volunteered to be part of the study. I individually notified participants, by phone or email based on their designated preference. In this communication, I let them know that they

had been selected and provided more information about the study. I also answered any initial questions participants had and scheduled their interview based on their convenience. I also replied to volunteers who I did not invite to participate, thanking them for their interest in my study.

Instrumentation

In this study, I served as the researcher and used a semistructured interview guide as my only instrument. The semistructured interview guide was used to collect data and remove unintentional bias as I interviewed teachers about their experience with MAP and how they use these data in their classrooms. The semistructured interview guide was designed based on my conceptual framework, Fullan and Langworthy's (2013) change theory. I had an expert in the field check the semistructured interview guide for content validity and sufficiency to answer the research questions of my study. To guard against bias, I used the same semistructured interview guide to ask the same questions in the same order (Appendix A). This process provided the same experience for all participants so that I could not use my knowledge about the person to alter or look for additional information. By using the semistructured interview guide, I also remained objective, as suggested by Leung (2015). Since I do not know how each teacher had experienced MAP training and implementation practice, the guide also created a foundation for teachers to share their overall experience in a non-threatening atmosphere as there was no possibility of offering a wrong answer.

Fullan and Langworthy's (2013) change theory was foundational to the semistructured interview guide design. I developed specific interview questions from the

conceptual framework to allow me to answer the overarching research questions. The interview questions helped to understand how teachers use data within their classroom, what professional development they have received and continue to receive, and how student voice plays a role in setting learning goals, key elements of educational change identified by Fullan and Langworthy (2013). I explained these three variables in my literature review and how they are necessary for data driven instruction.

The semistructured interview guide included five open-ended interview questions with seven additional follow-up questions to probe for greater detail. I developed two questions to answer the first research question, two questions to answer the second research question, and one question to answer the final research question. Each of the interview questions had at least one follow up question. To ensure quality, I asked an expert who holds a doctorate in education and whom I do not know personally to review the questions. Specifically, the questions were reviewed to determine alignment to my study's problem, purpose, and research questions. This expert confirmed the validity of the interview questions and their alignment with the research questions but suggested changes to question wording to make them less targeted or leading. I reworded questions to eliminate potential for directing a participant to a specific answer.

In a qualitative study, the researcher is an instrument for data collection, because all aspects of the study are filtered through the mind and perceptions of the person conducting the research. I was responsible for creating interview questions in this study, conducting the interviews, selecting data for analysis, conducting the analysis, and extracting the results and significance of my findings. All of these processes were subject

to my preconceived notions and biases about MAP testing and teacher fidelity to the MAP implementation process. To reduce the influence of my own perspectives, in addition to the external review of the instrument, I asked every participant to answer the same interview questions. I invited participants to review their interview transcript for accuracy and used their corrected transcript as the basis for my analysis. I also used a reflective journal, as recommended by Ravitch and Carl (2016), as a place to record my thoughts and feelings throughout the study, and as a mechanism by which to keep my perspectives separate from those of the participants.

Procedures for Recruitment, Participation, and Data Collection

Since I work at the site and wanted to maintain ethical integrity in recruiting, information about my study was shared through the district's monthly newsletter to all district staff. I provided the superintendent with information about the study and a link to a Google form for willing participants to complete. The description included a request for core classroom teachers in ELA, mathematics, and science to volunteer to participate in an interview about the use of MAP. The form asked for the participants name, personal email address, content area taught, grade level they serve, and how they would like to be contacted. Instructions indicated that participants should complete the form within 3-weeks. If, after 3 weeks volunteers were still needed, I planned to ask the superintendent to send a reminder email invitation to all staff; however, I achieved the target number of participants within the 3-week window.

As potential participants volunteered and indicated consent, I followed up with a phone call or an email—based on the preference of the participant in the Google form—

to establish a mutually convenient date and time for the interview. I conducted interviews outside of school hours via the teleconference tool Zoom, using an encrypted connection. I conducted the interviews in my private home office to keep what the communication confidential; and I encouraged participants to choose a quiet, private location for the interview. At the beginning of the interview, I informed the participant of the purpose of the study, reminded participants that what they shared was confidential, asked them to acknowledge that the interview would be audio recorded, and reminded them that they could conclude the interview at any time. I confirmed that the planned interview time would be between 45 and 60 minutes.

I used a semistructured interview guide to conduct the interview to safeguard against any unintentional bias. I used Zoom to record the interview, and I made notes during the interview of key ideas that come to mind and of things I needed to ask the participant to achieve understanding of their perspectives. I let them know that I would email them the interview transcript so they could check it for accuracy.

Data Analysis Plan

The interview questions were aligned with the research questions. Interview Question 1 asked participants to describe their process in using MAP results to make instructional decisions, and helped me answer RQ1, about how teachers describe using individual student MAP diagnostic assessment data to design meaningful learning experiences. Follow up prompts to interview Question 1 asked if teachers use certain reports more than others and how teachers use MAP to follow their established curriculum map. Because classroom schedules, routines, and student placement decisions

are elements of meaningful learning experiences, answers to interview Question 2, which asks about how MAP drives schedules, routines, and placement decisions, were also applied to RQ1.

Both interview Questions 3 and 4 were designed to answer RQ 2, about how teachers describe their engagement in professional learning opportunities for using MAP diagnostic assessment data to differentiate instruction. Interview Question 3 and its follow up question asked participants to describe the professional development they received when MAP was implemented and opportunities provided during training to use data to practice making instructional decisions. Interview Question 4 asked participants how they used time reserved for participation in professional learning communities to share and discuss MAP data with other teachers. Two follow-up questions to Interview Question 4 asked how the participant's team or department uses MAP data to plan differentiated learning experiences for students and how teams make plans to document data and student progress over time. Finally, Interview Question 5 and two follow up questions asked participants to describe the role students play in using MAP reports to plan instruction. This question helped me answer RQ 3, about how teachers describe partnering with students in using MAP data to plan their learning, set learning goals, and support motivation for learning.

I transcribed each interview as it was completed using the transcription function in Zoom, and then reviewed the transcript while listening to the audio file on my computer to make any corrections that were needed to align the transcript with what the participant said. Then, as described above, I emailed each transcript to the participant, so

they could check the transcript for accuracy. These validated transcripts were the files I used in the data coding process; if I did not receive corrections from a participant within 10 days of my email inviting them to review the transcript, I assumed the transcript was acceptable to the participant. I printed each transcript so that I had a physical copy in front of me.

I used a general qualitative approach with specific attention on thematic analysis, as suggested by Ravitch and Carl (2016). The thematic analysis process is an organizational way of reviewing transcripts of interviews holistically and slowly breaking the data down into meaningful segments. The process begins with initial open coding, moves into clustered axial codes, and finally the development of themes, and sub themes as appropriate (Ravitch & Carl, 2019). I began by reading through each transcript and using colored highlighters to begin to code the data. I used open coding to find chunks of data, significant quotes or ideas that stand out (Saldana, 2016), to create codes for words or phrases that are repeating throughout the data (Ravitch & Carl, 2016). The codes allowed me to get my thoughts documented and begin topic and theme considerations as the study progressed (Saldana, 2016). I repeated this process several times until I no longer found new codes. After I completed open coding, I moved to axial coding to cluster codes into categories and then themes (Ravitch & Carl, 2016).

Once I completed coding on paper, I began to place the codes in an electronic file using a password protected Microsoft Word document. I used color coding to organize and create categories. I created a total of 11 categories. I then organized the categories into themes, so I could visualize how participants views were similar and dissimilar. I

identified five themes from the categories. Finally, I inserted the research questions above the themes to begin seeing which elements of the change process were present and absent as MAP was implemented that could be interrupting the increase in student achievement. This process allowed me to take auditory data and transform it into a visual format.

The data analysis process also included a plan to identify discrepant cases that might occur. In an interview-based study, discrepant cases may arise if a participant makes a statement in one portion of the interview that contradicts something they said earlier in the interview. If I noticed this during the interview, I planned to ask the participant to clarify the difference in their answers. If I noticed a discrepancy as I reviewed the interview transcription, I planned to ask the participant about this when I emailed them the transcript for their review. However, I did not notice any discrepant information in my review and analysis of the data.

Trustworthiness

Trustworthiness is a critical factor in a qualitative study, and these terms are often interchangeable with the word validity (Ravitch & Carl, 2016). Shenton (2004) stated that trustworthiness within a qualitative research study is often questioned due to the differences in how concepts are addressed between qualitative and quantitative studies. For a qualitative study to be trustworthy, it must be credible, transferable, dependable, and confirmable (Shenton, 2004). One way to ensure studies are trustworthy is by using research methods that are well established in qualitative investigations; the use of similar data analysis or line of questioning that have previously been successful help to format a study, so it is viewed as trustworthy (Shenton, 2004).

Credibility

Credibility is the researcher's ability to critically use a research design to measure and report what the study was intended to measure (Ravitch & Carl, 2016). To ensure my study was credible, I conducted the interviews without inserting my own biases or opinions by asking the same questions of every participant. I took notes during the interview and recorded on the semistructured interview guide to manage my own thinking. I also asked participants to review the transcript of their interview to ensure that the data being used to answer the research questions was based on what participants said and meant to say. These member checks provided validity and established credibility (Ravitch & Carl, 2016). Also, I reported participants' words verbatim, providing thick description to clearly describe the context of the study and contextualize the data, so readers can confirm the validity of my findings (Ravitch & Carl, 2016).

Transferability

For my study to be trustworthy, I also needed to ensure that the study was transferable, or that my study was applicable or transferable to larger contexts (Ravitch & Carl, 2016). This process included describing the setting of my study with enough clarity and detail that readers are able to decide on their own what does and does not apply to their own situation (Burkholder, Cox, & Crawford, 2016). In order to ensure that readers could decide if my study is transferable to their own setting, I provided clear explanations of the location of the study—a small, rural, public school district in the midwestern United States—my purposeful sampling strategy, the delimitations of the study, and the methodology by which I conducted my study.

Dependability

According to Joppe (2000), dependability is established by providing sufficient description of a study that another can replicate it, and also by conducting the study in a way that leads to the same results over multiple iterations of the study with another, similar sample. Dependability ensures that the data from my study have value beyond the confines of the original context (Ravitch & Carl, 2016). I have described my study with care, noting the setting, sample, and method, so the reader may understand it fully and can use my description to replicate the study. My use of a semistructured interview guide helped to ensure that the data collected are dependable, as did my sampling process that assured participants will be teachers who have experience with the phenomenon under study. I also have clearly described how data were collected and the process for how they were analyzed, so another might dependably replicate my study.

Confirmability

Confirmability means that my study's findings were free from research bias (Ravitch & Carl, 2016). My study is confirmable by having interviews recorded and professionally transcribed to remove any bias or misunderstanding on my part. I also took notes during the interview that can be compared to the transcripts, to confirm I heard what I thought I heard. As I described above, I monitored my reflexivity to maintain my identity, positionality, and subjectivity (Ravitch & Carl, 2016). By continuously being reflective of the research process, how I am asking questions, and being cautious of making assumptions, I contributed to the confirmability of my findings.

Ethical Procedures

I secured approval from Walden University's Institutional Review Board (IRB) prior to beginning any research; my approval number was 07-10-20-0313990. I also obtained written consent from the district's superintendent agreeing to share information about my study with potential participants. Participants gave electronic consent prior to participating in my study by designating their desire to do so on the Google prescreening form; participants had to give consent in order to submit the form. Before beginning the interview, I answered any participant's questions about the research process and informed consent. I also reminded participants that they could stop the interview or remove themselves from participation in the study at any time. No participant removed themselves from the study.

Participants' identities and data sets have been and will continue to be kept confidential; no one in the school district knows who agreed or declined to participate. Neither electronic files nor paper files identified participants by name; I assigned each participant a code and used that code to refer to them in all my materials and reporting. No information regarding individual responses was or will be shared with district staff or leadership; and only my dissertation committee members or Walden University IRB, upon request, will have access to the collected data. Physical paperwork is locked in a file drawer at my home office, and digital information is stored in a password protected file on my personal computer and also backed up on a password protected hard drive. Paperwork and electronic files will be kept for the required 5 years following the completion of the study before being shredded or wiped using a tool like Eraser. I did not

use the district-provided computer, office space, or digital platforms to store information from my study.

I implemented other best practice and safeguards to provide for adherence to ethical measures. I did not send any communication to participants during the school day. To reduce any unintended breach of confidentiality, I routed all communication through participants' personal email addresses, not in-person or to a district-provided email address. Interviews were scheduled outside of the school day via Zoom at a time of the participants' choosing to ensure they had privacy to take part in the interview and the interview was at a time that was not disruptive to their professional or personal life.

Summary

In this chapter, I described this basic qualitative study using interviews to better understand teacher practice regarding MAP implementation that has not resulted in expected improvements in student outcomes in one small rural school district in the Midwestern United States. I described that I used purposeful sampling to identify 12 participants across primary, intermediate, middle, and high school levels. I described that I conducted semistructured interviews using the Zoom teleconference tool as well as thematic and axial coding to analyze the transcribed interview data.

I present the findings of my study in Chapter 4.

Chapter 4: Results

The purpose of this qualitative study was to better understand teacher practice regarding a MAP implementation that did not yield the expected improvements in student outcomes. To guide the study, the following three research questions were used:

1. How do teachers describe using individual student MAP diagnostic assessment data to design meaningful learning experiences?
2. How do teachers describe their engagement in professional learning opportunities for using MAP diagnostic assessment data to differentiate instruction?
3. How do teachers describe partnering with students in their learning and using MAP diagnostic assessment technology to set learning goals, make instructional innovations, and achieve student learning outcomes?

In this chapter, I describe the setting of the study, how I collected data, my analysis process, and the results of my study. Through describing these processes, I reveal how I identified the emergence of the codes and categories from the aggregated data set, how these categories developed into themes, and how the execution of this study aligns with best practice for a basic qualitative study in the narrative tradition.

Setting

Twelve teachers at a rural school district in the midwestern United States volunteered to participate in my study during the summer of 2020. Zoom was used to conduct the interviews. Teachers participated from their homes or another quiet location.

All teachers were on summer vacation, so interviews did not conflict with school hours or their professional duties.

All participants were white women with teaching experience ranging from 8–35 years. Collectively, the teachers had 236 years of experience with an average of 19.6 years. All 12 teachers taught core ELA, mathematics, or science classes; these classes spanned Grades 1-12. The teachers' range of experience, grade level, and content area for each participant are illustrated in Table 3.

Table 3

Participant district teaching experience and grade level/content area

Participant	Years' experience	Grade level	Content area		
			ELA	Math	Science
<i>n</i> = 12	<i>m</i> = x		<i>n</i> = x	<i>n</i> = x	<i>n</i> = x
A	35	11	x		
B	20	10-12			x
C	17	10	x	x	
D	18	8	x	x	
E	30	7		x	
F	17	5			x
G	8	4		x	
H	24	4	x	x	
I	17	2	x		

(table continues)

J	11	1	x	x	
K	25	1	x		
L	14	1		x	
Total	236		7	7	2

They represented nine different grade levels. Each of the district school levels were represented with three teachers from the primary-grade building, three from the intermediate-grade building, three from the middle school, and three from the high school. This sample represented 17% of the teachers in this district ($n = 70$). Of the 12 teachers, eight taught either ELA, mathematics, or science, and four taught both ELA and mathematics. By virtue of the classes and grades taught, all 12 participants were required to give the MAP assessment and had access to the same reports within the MAP system. No personal or organizational conditions of which I am aware influenced participants or the collection of data.

Data Collection

After I was granted approval to conduct my study by Walden University's IRB, I collected data from 12 participants according to my approved plan. The superintendent of the district shared information about my study in the July 2020 staff newsletter published on July 13th. Participants were given 3-weeks to respond by submitting information in the provided electronic link. During Week 1, I received four submissions of teachers expressing interest in the study by submitting a prescreening survey via Google form that was linked in the newsletter. By the end of Week 2, I received six more submissions, and

during Week 3 I received the final three submissions, providing the 12 needed to move forward.

Eligibility

As potential participants volunteered and indicated consent through the Google form prescreening survey, I analyzed teacher responses to the two questions on the form to verify each person's eligibility for participation in this study. All participants must have 1-year teaching experience in ELA, mathematics, or science. Additionally, the participant group must achieve an equal or nearly equal distribution of participants across primary, intermediate, middle, and high school levels.

I checked the Google form daily to see how many submissions came in. Each time there was a new submission, I checked to see if the person was eligible based on years of experience, subject, and the grade level taught. Each participant who submitted was verified to be eligible. At the end of the three-week window, I verified I had a minimum of 12 participants and closed the Google form from accepting new responses. With the window closed, I began to contact the participants on July 30th based on the preference participants chose on the Google form; two teachers requested I contact them by email to schedule a time for the interview and ten teachers asked that I text them. All 12 teachers who submitted interest to participate chose to participate. I began conducting interviews on August 2nd and conducted the last interview on August 11th. Interviews lasted 17–48 minutes.

Interview Processes

After the participant recruitment was completed according to the study parameters, I began the process to collect interview data. As my data collection began during the global Covid-19 pandemic that required social distancing, I used Zoom software to host face-to-face, yet online interviews. As Zoom was commonly used by educators during the pandemic and it provided opportunity for audio, video, and digital recording as well as transcription, it was an appropriate choice for my interview modality.

I contacted each participant based on their indicated preference for email, telephone, or text and scheduled Zoom interviews on weekday afternoons at a time of their convenience. I sent each participant a secure link to the Zoom video chat. Once each chat was initiated, I obtained verbal permission to record the session and used the Zoom option to audio record the conversations. I asked each participant for their number of years teaching in the district to verify participants had at least 1 year of experience as indicated in my methodology. I also verified that teachers were core teachers of ELA, mathematics, or science and that they had used the MAP assessment. I explained the purpose of the study, and the participants' option to exit the interview at any time, and I ensured participants had no questions before I began the interviews. Of the 12 scheduled interviews, only 1 had to be rescheduled. Participant H had internet issues during the interview which made the audio incomprehensible. I, therefore, rescheduled it for a different day to ensure questions were answered accurately. I completed all 12 interviews in a 10-day range.

Reflective Journal

I also used a reflective journal, as recommended by Ravitch and Carl (2016), as a place to record my thoughts and feelings throughout the study, and as a mechanism by which to keep my perspectives separate from those of the participants. The journal was a single subject spiral notebook. During the interviews, I wrote down anything the participants said that stood out as differing from my view. For example, I believed that the district had provided professional development opportunities for teachers to use data to make decisions. When a teacher mentioned that they received no such training, I placed that in the notebook for something to think about as it related to the conceptual framework. I devoted a page to each participant and labeled the page with the participant's code to keep their identity private. The notebook was locked in a drawer in my home office.

Data Recording and Archiving

When each interview was completed, my next step was to prepare the data for analysis. As I ended each Zoom call, the audio was saved in Zoom. I enabled a Zoom feature to automatically download and transcribe the audio on my computer. These audio files were saved in mp3 format and the audio transcriptions were downloadable as word documents; they did not require any other special software to listen to or review the files. As each file was saved in my Downloads folder on my computer, I verified that it would open and then transferred it to a folder on my desktop that was backed up to an external hard drive. I labeled each interview based on the code assigned to the participant to

protect their identity. The Zoom platform successfully saved and transcribed all interviews, saving me transcription time and also providing a clean data set to analyze.

After audio and transcription files were renamed and saved appropriately, I verified the accuracy of the transcripts. I listened to the audio of each interview and read along on the transcript, correcting any word that was recorded incorrectly or misspelled in the auto-transcription. During my review I found few errors with most only being misspelled names. It took me about 30 minutes to review each transcript and make any corrections before emailing the transcript to the participant to review.

Once I had reviewed the transcripts and verified them for accuracy, I emailed the transcripts to each participant and gave them a 10-day window to respond if there were any necessary changes. The purpose of this step was to ensure that I had captured their thoughts correctly and validate the data. No changes were requested by any of the participants. Only one participant responded back with a statement that she was sorry that she did not speak in a lot of complete sentences.

Variations and Unusual Circumstances of Data Collection

Data were collected as planned without any variations needed to my intended processes. One unusual circumstance was trying to make sure all of the Zoom settings were correctly turned on to record the interviews and to transcribe the data. During the first interview, I realized the correct setting was not turned on for the audio of the interview to be transcribed. I manually transcribed this interview by listening to the audio. I contacted Zoom support to correct the issue, and for the remaining 11 interviews, the Zoom transcription worked correctly.

Data Analysis

After I completed reviews of participant transcriptions by listening to the audio and reading along with the transcript on my screen, I began to analyze the data. I printed each interview transcription so I could manually read through it line by line. I coded the interviews in the order in which they were completed; I assigned a code to each interview transcript with a letter of the alphabet starting with the letter A. I used a yellow highlighter as I read through the transcripts to note repeated words or phrases. I spent about 12 hours studying and analyzing the written transcripts.

Coding

Next, I coded the data I analyzed in the transcripts. I opened a Word document on my computer with three columns: codes, categories, and themes. I began by typing all of the highlighted codes into the appropriate column from each interview in the order completed. The process of coding all 12 transcripts initially resulted in 767 codes. I read through the code list and deleted any duplicated codes, leaving 314 unique codes. I sorted these codes based on topic or idea by changing the order of the codes so they were organized by similar ideas.

Categories

With the codes sorted into groups that were similar, I gave each group of codes a name—this name became a category. Through this process I identified 11 categories. The categories included: *interpretation of MAP scores, reports most beneficial, use of MAP for curricular changes, use of MAP for scheduling and student placement, training, collaboration using data, organization of data, sharing results with students, motivating*

students, positives of MAP, and negatives of MAP. With categories identified, I re-read the codes to make sure all were listed under the correct category and that no additional categories were needed. The codes and categories are presented in Appendix B.

Themes

From this information, I organized the categories so that similar categories were grouped next to each other. For example, the categories of *interpretation of scores* and *reports most beneficial* were similar so they were grouped next to each other. This process allowed me to identify five themes, including *data interpretation, curricular changes, teacher perspective, professional development, and student voice.* This information was saved in the Word document on my computer. Table 4 shows the categories and themes.

Table 4

MAP categories and themes derived from interviews

MAP Categories	MAP Themes
Interpretation of scores	Data interpretation
Reports most beneficial	
Use for instruction	Curricular changes
Use for scheduling and student placement	
Positives	Teacher perspective
Negatives	
Training	Professional development
Collaboration using data	
Organization of data	
Sharing results with students	Student voice
Motivating students	

During the process of organizing the data, I noticed diversity in the practices and implementation of MAP based on the building. Teachers interviewed who came from the

same building primarily had the same views as to whether they were willing to change their instruction based on MAP scores. The differences in how teachers use MAP by building is listed in Table 5.

Table 5

Teacher use of MAP by building

Participant	Building	Grade	MAP Use
A	High school	11	Not used for instruction
F	High school	10-12	Not used for instruction
G	High school	10	Remediation if many students are low in area
L	Middle school	8	As review questions, not to adjust instruction
I	Middle school	7	Not used for instruction
K	Middle school	5	Fine-tuning lessons
B	Intermediate	4	Intervention groups only
E	Intermediate	4	Intervention groups only
J	Intermediate	2	Adjust core curriculum based on student needs
C	Primary	1	Determine student groups for core instruction
D	Primary	1	Determine student groups for core instruction
H	Primary	1	Determine student groups for core instruction

There were no trends regarding how teachers in different content areas use MAP to change their instruction, described in Table 6.

Table 6

Teacher use of MAP by participant (n = 12) and content area

Teacher use of MAP	Participant	Content area		
		ELA <i>n</i> = 7	Math <i>n</i> = 7	Science <i>n</i> = 2
Not used for instruction	A	X		
	I	X		
	F			X
Fine tuning lessons	K	X		
Determining student groups for core instruction	C	X	X	
	D	X	X	
	H	X	X	
Adjusting core curriculum for student needs	J	X	X	
Intervention groups only	E		X	
	B			X
Remediation	G		X	
Review questions/not instructional adjustment	L		X	

None of the 12 participants made any statements that were contradictory to anything they previously stated, and I analyzed transcripts to be sure there were no discrepant cases that affected data analysis.

Results

In this section, I will present the data and findings for each of my research questions. The purpose of this qualitative study was to better understand teacher practice regarding MAP implementation that has not resulted in expected improvements in

student outcomes. I will present teacher responses as they relate to each research question.

RQ 1 Results

RQ1 asked, “How do teachers describe using individual student MAP diagnostic assessment data to design meaningful learning experiences?” In order to respond to RQ1, I reviewed the analyzed data from participant responses to Interview Questions 1 and 2 on the semistructured interview guide. From these, I derived four categories including interpretation of scores, reports most beneficial, use for instruction, use for scheduling and student placement. I also identified two themes including data interpretation and curricular changes.

When the 12 respondents’ replies were aggregated for analysis, the data revealed three key findings regarding how teachers use MAP to design meaningful learning experiences for students:

- RQ1 Finding 1 on Student Skills: teachers have access to and are knowledgeable about the skill sets of each student;
- RQ1 Finding 2 on Grade/Building Level: grade level is a factor in how much teachers will use MAP to change instruction; and
- RQ1 Finding 3 on Teacher Perspective: teacher perspective of MAP influences their use of MAP data to design instruction.

I will describe each of these findings in detail.

Student skills. The first key finding that addressed this research question describes how teachers interpret MAP data after students have taken an assessment. All

12 teachers indicated that they spend time reviewing student scores after the MAP assessment is completed, usually by looking at how a class did overall and then identifying outliers. MAP groups students in various ways that allow teachers to see student ability ranges. Several teachers recalled using the growth summary with quadrant chart. Participant G stated,

The report puts the entire group of kids on a page and then uses different colors to break them apart. For instance, there are four quadrants. So, the top left is the students that showed low achievement but high growth. Then there is another section for high achievement but high growth, low achievement and low growth, and high achievement but low growth. It's just a nice overall picture for kind of where everyone fell. It's interesting to look at and a way to get your feet wet.

Teachers reported that after looking at the overall scores, they began to use specific reports within MAP, specifically a report called the student learning continuum. This report shows individual students and how they scored on each grade level standard.

Participant I stated,

I go in to see the standards that they are weak in and then I make sure those standards are coming up in what I'm teaching or maybe I need to reinforce them a little bit as we go on. I pull up certain kids to see if they are high achieving and low scoring, especially with my advanced students, to see how they did on each standard.

Another report mentioned often was the individual student report. Participant D shared,

I use the student profile report to see what they are ready for, what they need to review, or what might need to be enriched. I use that to group my kids based on if they are high, medium, or low.

Participant E stated,

I use the student profile report to compare their third-grade score with their beginning fourth grade score. This allows me to at least begin to identify some students who are struggling in certain areas and begin to target [them]. You can see the weakest links and those are the ones that I want to hit the hardest, but a lot of that demands remediation.

All 12 teachers suggested they are knowledgeable about individual students' strengths and weaknesses and have the information necessary to design meaningful learning experiences for students.

Grade level. The second finding that addressed this research question is that grade level plays a role in how much teachers use MAP scores to change instruction to design meaningful learning experiences for each student. Teachers varied on how willing they were to change instruction based on the grade level; the lower the grade, the more the teachers described the need to adjust the core curriculum to meet the needs of students. At the elementary level, Participant J shared,

I use the MAP results to pull different groups during Daily Five and Café to group students who are similar in regard to strengths and weaknesses. There was one standard over half the class missed, so I had to change my plans to hit the

standard again as a whole group. The pacing guide is not really set in stone, so we can change course based on the needs of our kids.

After Grade 3, where state testing begins, teachers were less flexible in their willingness to change their plans based on testing and cited the need to get through all of the standards as the reason for their reluctance to adapt their teaching. Participant D summed this idea up by stating, “We just keep going with our instruction. Otherwise, we’re going to run out of time.” Participant K stated that rather than changing plans, she uses MAP data to fine-tune her instructional plans, stating,

I think it’s more fine-tuning. We do so much with theme. And then I saw at one time that we took it that students were struggling with theme. And I thought we were going a great job with that. I thought we had covered it really well. And the kids just weren’t getting it. So, I would say fine-tuning rather than totally changing.

Participant I, when asked if she would change instruction based on MAP reports stated, “No.” Participant L echoed that she also would not change her pacing guide or instructional plans but instead would add review questions into student notes or bell work questions at the beginning of class to target areas of weakness:

I’ll add an extra bell work question or toss in an extra question during notes if I notice students are low in a certain section. If it’s something I’ve taught and I’m noticing they are still low, then I will continually blast them with those kinds of questions.

Participant A stated,

I've been doing this a long time so if I got a kid struggling, I know what to do already. I don't alter things necessarily based on MAP. I think our curriculum map is pretty solid with what we do with our kids and the results that we get.

Teachers also described how MAP data related to students who are gifted or need enrichment. Two teachers mentioned that they use MAP to enrich students or to provide a greater challenge. Participant E stated, "I can see the high kids that need to be pushed and that's enjoyable as well. It was the MAP test that showed me I wasn't reaching my highest kids. It changed my teaching." Participant D said, "The reports show me what students need skill review and which ones need enriching. So, I use that to group students if they are high, medium, or low and what specific skills they need." Ten teachers reported that if a student is on track, or even advanced, they already plan to cover the standards necessary, so they do not need MAP reports to guide them. For example, Participant C said, "If a student is scoring higher, the class as a whole will eventually get to the higher standards, so I don't worry about the high kids right away." Participant L stated, "Anything that shows up on MAP that I haven't taught yet, there's no point in me going over it with the student. I only focus on what I have already taught that students still don't get." Participant A said,

I don't use MAP scores with the advanced or gifted students. I think I have that in my back pocket. You know, again, class size, my two sections of honors English both only had five students in them. So that's a small group. I didn't need a piece of paper to say, hey, this kid needs more whatever. The rigor is already there.

Participant L reported,

I had a student performing very poorly in class and I wouldn't have recommended him for an advanced class, but then when I saw his MAP score, I realized how much I was under estimating his ability and I guess I didn't challenge him like I should have.

While most teachers interviewed indicated that MAP is not used to enrich instruction for advanced or gifted students, Participant I did say, "If a student scores in the 90th percentile, they're placed in the gifted class, and I've had some students placed in my advanced class because their MAP scores were high." Participant K explained, "We use MAP scores as part of the rubric for placing students in advanced course or maybe even moving kids that were in the advanced classes out of the advanced classes. We use it a lot for placement." Most teachers interviewed were not using MAP to enrich coursework for gifted students but indicated MAP does play a role in whether or not students gain entrance to gifted courses.

Most teachers in this study described MAP as helpful only in working with low or at-risk students. Teachers interviewed referenced using the data for low performing students with some specifically discussing that they use MAP data specifically to target low-performing students. Participant H said, "We base our RTI groups using MAP data. We sometimes share a student if we have an outlier so they will go to another teacher for assistance." Participant K said, "After I look at the results, I focus on some of the areas of weakness and those trends that I'm seeing." Participant L said, "The first thing I do is look at the range of scores and see who is not in the general range for our grade level." Participant E reported, "I use initial data to identify kids who are struggling in certain

areas and target.” Participant B said, “We look at the kids. Did they have an IEP? What interventions are they already getting?” Participant C said, “I look for gaps and what they missed. And then typically I’ll use the overall data and kind of look at the area that kids are low in. I use that to focus my instruction.”

Teacher perspective. The third finding that addressed this research question is that teacher perspective of the MAP assessment influences the teacher in the use of MAP scores to design meaningful learning experiences for each student. While MAP is an adaptive assessment, teachers interviewed had mixed feelings on how an adaptive assessment fits into the classroom, especially in older grades, and seemed to feel that MAP does not adequately measure student success in class. Participant F stated,

A lot of the content that is covered on the MAP test doesn’t directly relate to what they’re learning in their classes just because of the age level. I think my frustration and probably the frustration of some other people in the science department is that once you get to the high school level, it doesn’t diversify, you know, with where the standards are.

Participant L, however, felt MAP provided good information about students who can do higher level work and stated,

It’s fun when the kids are like, oh, I saw this question and it said you know blah blah blah. And I’m like, oh that’s really good. I said that tells me you got into a high school math question and they’re proud when they hear those things.

Participant I felt adaptive assessments like MAP put too much stress on a student. She stated,

The computer was asking him what point of view a story was told in and one of the choices was stream of consciousness, and that is something I hadn't learned until college. I feel like the advanced kids are testing too high to begin with and they get frustrated because MAP starts them high and moves them to an even higher level. I feel like I'm putting undue stress on them.

Data also revealed that the more experience a teacher has, the less likely they feel MAP is helpful to them personally and even the most experienced teachers see MAP as a valuable way to obtain information. Participant G, the least experienced teacher interviewed, shared,

The data from MAP is so valuable. I wish I had a day or two to just meet with teachers and talk about it, hash it out, look at different kids over time, see if they have any strategies on what works, or even just a couple hours, you know, periodically to meet and talk about it rather than just looking at the data yourself.

That same teacher was also likely to change lesson plans, stating, "If they're all showing that they need to develop in their probability standards, then I might decide to spend more days on probability than I originally had planned." On the other hand, Participant A, the most experienced teacher I interviewed, stated,

I understand absolutely why they're important, why those test scores are important, why they're in place for me, but where I am in my career, I got to be honest, I don't care. Nothing's going to change in the next year that's going to have an impact on me. I'm too old a dog and came too late to the race to really be super invested in this.

The practices of the teachers interviewed indicate that teachers feel well trained in running MAP reports and reviewing how students performed. They report they can accurately talk about how each student individually is performing. Yet, there was great disparity in how teachers reported actually using the data to influence classroom practices and to design meaningful learning opportunities for individual students. Teachers interviewed varied as to whether they change their instruction completely based on MAP data, use the MAP data for small group instruction, or did not use the data to guide their instruction. Most teachers also reported MAP is primarily used to target students who are academically behind and few said they use data to plan enrichment for students who need to be academically challenged. Therefore, the results of RQ1 indicate that teachers as a whole report only using MAP scores to remediate for students who are behind or to track progress, not to change their instructional plans or design meaningful learning opportunities for all students in their class.

RQ 2 Results

RQ2 asked, “How do teachers describe their engagement in professional learning opportunities for using MAP diagnostic assessment data to differentiate instruction?” I used participant responses to Interview Questions 3 and 4 to answer this question. From these, I derived five categories. The categories included in RQ 2 were positives of MAP, negatives of MAP, training, collaboration using data, and organization of data. The key themes for RQ 2 were teacher perspective and professional development, leading to two findings:

- RQ2 Finding 1 on Professional Development: professional development was inconsistent from building to building and teacher to teacher; and
- RQ2 Finding 2 on Peer Collaboration: teachers found professional learning communities and other collaboration efforts useful.

I describe each of these findings in detail.

Professional development. The participants in this study indicated that professional development was inconsistent from building to building when MAP was implemented and they had varying experiences in being properly trained. Only nine of the participants described participating in professional development. Participant J stated, “I missed the training because I was on maternity leave. So then coming back it was just basically like, all right, here’s what you’re doing. And this is the test.” Participant A also missed the training and stated,

I honestly don’t remember specific training. Well I shouldn’t say that. I remember we were supposed to have a training where we were going to be able to access the reports or something. But I feel like maybe the Internet was down that morning or something. And so that was that. I just remember sitting in a room and everybody had their Chromebooks, but most people couldn’t get on or something.

Participant G said she was not offered any training at all; she was hired after the building had already implemented MAP and said,

There was a training, but it was before I was here. My previous location we used STAR which is kind of similar and has a lot of the same reports. My husband was a teacher at a middle school and they used MAP heavily. We spent a lot of

evenings learning together and he taught me what he knew, and it helped me learn how to read all the reports and what were useful.

Interestingly, each building had a different implementation of MAP and varied regarding training. Both primary and intermediate building teachers indicated that when MAP first was implemented, it was only used to measure yearly student growth and testing was completed by the computer teacher. Participant D explained, “At the beginning students took the assessment in the computer lab with the computer teacher. I really didn’t have to do much but look at the results at the end of the year. But even then, I wasn’t looking at results like I do now.” Participant C stated, “We’ve had several follow up trainings where we look at data. I like when we meet with the principal and she helps me look at what is most important.” Participant H said, “Usually we are given team time during PD days to look at individual and grade level scores.” Only one of the participants said that there were opportunities during professional development to interact with data. Participant E said,

I don’t know when it was, but we were meeting in the tech room in the middle school and the woman that presented was phenomenal. She showed us all the things that we had that we were totally unaware were available. There’s a lot of data available that we didn’t know how to use or even that was there.

Instead, most participants agreed that initial training, and follow up training since, has revolved around how to login and use the system or how to run reports. Participant B stated, “We’ve never looked at real live raw data. Not for MAP. I can’t recall for MAP, you know for state testing, but not MAP.” Participant D reported,

I don't think it was necessarily as in depth as it could have been. A lady came to talk to us. Most of the training was how to look at results, and I still find most training tends to lend itself more to how to navigate the site. I'd prefer one that focuses just on using the information. Now, how do you take the data into your classroom? Show me hands on what can we do, not just tell me, and make it relevant to my grade level.

Peer collaboration. During the interviews, teachers described how much time they spend in professional learning communities collaborating with colleagues. Primary and intermediate teachers reported that grade-level teams are provided time to meet on a rotating basis. Participant C explained, "The entire first grade team can get together for four days at a time. We are able to meet every day for 40 minutes. This happens almost every week or every other week because it's on an ABCD schedule." Participant B said, "We only talk about MAP data after an assessment is given. That's when we primarily talk about it."

The middle school has more regular time for teams to communicate and collaborate, yet MAP is not often a topic of discussion. Participant L said, "Grades five to eight have a daily 40-minute team time with members of their grade level and meet once a week with their department." Participant K echoed that, just like the elementary teachers, "We probably only discuss MAP shortly after administering the test. And the focus is probably mostly on the projection of the percentage of our students that may pass the state tests." High school teachers are only required to get together once a month before school with their department. Participant F indicated that they too only discuss

MAP shortly after an assessment is given, if at all, and stated, “We’ve looked at it. But we really only talk about different things people have found. There isn’t really overlap in our individual classes, so we don’t get down into the details; it’s more about how we ran something or how we interpret it.” Participant A said, “Is MAP ever discussed or gone over as a group? I don’t think so.”

While professional development has been provided, teachers in this study reported that training has been geared toward navigating the MAP system and providing teachers with the knowledge to run reports and interpret the findings. However, teachers describe a lack of opportunity for teachers to be engaged in how to use the data to differentiate learning experiences that challenge all students in the classroom. There are also differences in the time allotted to teachers at different grade levels to interact with colleagues and discuss the data on a regular basis. Therefore, the results of RQ2 indicate that teachers have been engaged in professional learning opportunities and are very knowledgeable about navigating and finding reports of what students can and cannot do, yet no teacher talked about training in how to apply information from MAP to their daily lessons.

RQ 3 Results

RQ3 asked, “How do teachers describe partnering with students in their learning and using MAP diagnostic assessment technology to set learning goals, make instructional innovations, and achieve student learning outcomes?” I used participant responses to Interview Question 5 to answer this question. From these, I derived two

categories, sharing results with students and motivating students. The key theme regarding RQ 3 was student voice, resulting in a single finding.

- RQ3 Finding 1 on Goal-setting with Students: teachers do not use MAP consistently to set learning goals in collaboration with students; and
- RQ2 Finding 2 on Motivating Students: teachers found MAP useful as a motivation tool only sometimes or for some students.

I describe these findings below.

Goal-setting with students. Findings from this study indicate that while all teachers work with students, specific goals are not set using MAP data assessment. All 12 teachers interviewed discussed the organization of data to track student progress. Many of the participants indicated that they typically print the class report for easy access to the scores of all students and they print individual reports for students they are most concerned about. Participants A and F reported using a digital platform to store student results such as their online gradebook or within their Google Drive. Participant A placed the data in her online gradebook and stated, “We have the capability to keep notes in Progress Book. So, I always make a column with where they are so that I can pull that up and look. I can find the scores whenever I need them.” Participant F said, “I don’t usually print things out. I run whatever analysis I need and save that as a PDF to my Google Drive.” The rest of the participants print and keep all reports in a binder. Participant D stated,

I don’t print out the big giant MAP continuum because it is too many pages, but I like to have student sheets for everything I need to know. I also leave space where

I can take notes. Then I can keep track of what skills students need to work on and how they are progressing.

The other participants did not mention specifically taking notes about student performance, but most mentioned that they keep copies of each testing window report to see if students are growing. Participant G stated, “I print off the overall class report for each window - fall, winter, spring - and I keep the overall class report at the very front to compare.”

While all teachers had a system in place to keep track of student progress, not all shared results with students, and those who did varied in the degree to which they did so and goals set. At the elementary level, teachers indicated that they do more of a check in with students to show their growth and to set specific small goals of things to work on. Participant D said,

I would say, okay, so here’s where we are. This is the goal we are trying to reach by the end of the year. Let’s see how we’re doing. And as long as I start to see some growth, they get so excited. I never go into real specifics until I meet with them in small groups.

Participant H reported, “Most of my kids don’t understand the numbers and reaching a certain goal. It also adds more stress to the child, so I think about that when deciding to share scores or not.” Participant C said instead of giving scores from MAP, she creates skill goals. She said,

Not technically, like MAP data scores and that kind of thing. But I might talk to them about what things good readers do. And, you know, this is one of the things

I'm seeing. You know, are you having a hard time? I kind of almost question it so they can come up with the idea that they need to work in that area rather than me telling them.

As students get older, more teachers described being specific with their students about what the numbers mean, yet teachers interviewed indicated that they set MAP goals without students being knowledgeable about what their MAP score means. Participant L stated, "Students put pressure on themselves to reach a score that they don't even know how to reach. I say, okay, we're shooting for a 216 and they don't even know what that means." Participant I stated, "Before they take their winter MAP, I give them a card with their MAP score on it. I usually tell them to better their score by 5 points." While most teachers indicated they just ask students to increase the score, some teachers provide more specific details on what students can do to increase their score. Participant K stated,

I literally meet with each kid one to one. And I show them what their test results were, where they fell, and we talk about where they want to be by next time and we set a goal together. I make sure they know there is a reason they are taking the MAP test.

Participant K went on to say that she uses the MAP goal within the system, stating, "There is guidance on the MAP site that shows their projected growth, like what is expected. And so, we try to go at least to that level, especially if their Lexile levels are low." She said she guides students towards meeting or exceeding that goal. Participant I said she only shares the overall score and does not put much emphasis on the score or setting goals, stating, "They just see their overall score. They already put too much

pressure on themselves.” Other teachers do not share test results with students unless students request it. Participant L stated,

Sometimes they don't want it. And sometimes they do. And truthfully, if I offer it to them most kids want it, although they don't know exactly what I means. So, then I try to explain their personal score and then I talk to the class about areas as a whole we are lacking in and what we need to work on. But as an individual, just the score.

Participant G explained,

They actually ask me a lot about their score when they take it. So, I'll print off their student profile for them and have a little discussion about what all the numbers mean. I find that it makes them more interested in doing well. I don't meet with every kid each time we take the test, but sometime throughout the year we have at least one discussion.

Participant A indicated that she does not meet with each student just about MAP, but purposely sets yearly goals and then follows up with each child at the conclusion of the year. She stated,

One of the first days of school, I ask them, tell me what you've done in the past with your class. We don't talk about grades or anything, but what do they want to get from English this year? So, kids write that down and attach a MAP score goal as well. I keep that piece of paper until the end of the year and I give it back. Did you exceed? Is it the same? Do you feel you fell backwards? Sometimes they fall back. Sometimes they go miles ahead.

One of the frustrations shared by all teachers during the interview process is that MAP scores are based on how students do in the single setting. Participant F stated,

I'm not sure the score is always accurate. It may be the student who tries really hard come in and have a bad day. Other students have figured out that I have to wait long enough to do my clicks so that I don't get flagged.

Motivating students. To ensure students do their best, teachers use various different strategies, but, according to teachers in this study, it all comes down to how teachers motivate students to do their best. Participant C said, "I always tell them to do their best work. It helps when you have formed a trusting relationship." Participant L added, "Often I make a connection with the kids in class. So, if I tell them that this is a reflection of what I've taught you, then it sometimes feels like they put forth a bit more effort." Others, like participant G, expects the best. She stated,

I probably shouldn't say this, but I tell them they are going to take it until I'm satisfied that they gave an effort. Just the threat of that makes them try. I've only had to actually do that maybe once.

Participant I offer bonus points for students, stating,

Honestly, bonus points because a lot of the kids need bonus points. And so, I'll tell them if they can increase their score and take it seriously and work hard for me, I will increase their grade by up to 10 bonus points.

All 12 participants, in varying ways, reported working with students to set goals. Therefore, the results of RQ3 indicate that students are part of the process in establishing learning goals meant to meet or exceed expected growth. However, there was

inconsistency among teachers in how they used MAP to set goals with students, and goal setting strategies with students varies from teacher to teacher.

Evidence of Trustworthiness

Credibility is the researcher's ability to critically use a research design to measure and report what the study was intended to measure (Ravitch & Carl, 2016). In my study, I used a semistructured interview guide to provide all 12 participants with the same line of questions. In addition, I asked participants to review the transcript of the interview to verify that the data I used in this study were accurate; these member checks provided validity and established credibility (Ravitch & Carl, 2016). I also provided thick description and quoted participants verbatim, so readers can confirm the validity of my findings (Ravitch & Carl, 2016).

Transferability is the idea that a study is applicable or transferable to larger contexts (Ravitch & Carl, 2016). To provide transferability, I have described the setting, participants, their experience, and their content areas in enough detail that readers can decide on their own if my study applies to their own setting (Burkholder, Cox, & Crawford, 2016). I have provided clear explanations of my purposeful sampling strategy as well as the methodology used to transparently explain the process used to conduct this study. I have used thick description to describe participant's responses in detail, so readers can decide if these results are transferable to other situations.

According to Joppe (2000), dependability is established by providing sufficient description of a study that another can replicate it, and also by conducting the study in a way that leads to the same results over multiple iterations of the study with another,

similar sample. I have explained in detail the research steps I have taken from the start of the research to the reporting of the findings. I described my study noting the setting, sample, and methodology so that readers can understand the processes I used and replicate the study if desired. I also used a semistructured interview guide to ensure data collected are dependable and recorded interviews, took field notes, and carefully documented the coding process to provide dependable data used in the research findings.

Confirmability means that my study's findings are free from research bias (Ravitch & Carl, 2016) and could be confirmed by other researchers. The findings of my study are related to the themes I identified derived from the categories used throughout the coding process. I aligned the five themes with the three research questions. I created themes from carefully coding all 12 interview transcripts and using member checking to verify that the data used are validated responses from the 12 participants who provided insight from their practices of using MAP data.

Summary

In Chapter 4, I presented the results from this study. I described the setting, how I collected data, and the process I used for data analysis. Data interpretation, curricular changes, teacher perspective, professional development, and student voice were the five themes that emerged from the data. I presented the results of the three research questions that indicated that teachers as a whole are only using MAP scores to remediate for students who are behind or to track progress, not to change their instructional plans or design meaningful learning opportunities for all students in their class. I also found teachers reported that professional development was inconsistent when MAP was

implemented and may not have provided teachers with the skills necessary to use MAP to its full potential, and that goal setting strategies with students vary from teacher to teacher. I provided evidence of the trustworthiness of my findings and explained in regard to credibility, transferability, dependability, and confirmability.

In Chapter 5, I present an interpretation of the findings, describe limitations of the study, and provide recommendations for future research, implications for practice, and the study's conclusion.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this qualitative study was to better understand teacher practice of MAP implementation that had not yielded the expected improvements in student outcomes. The qualitative study was conducted using the narrative tradition and interviews. The qualitative design was chosen to describe what was occurring in the local setting that was hindering change (Burkholder, Cox, & Crawford, 2016). This study was relevant and necessary because there was little research on teachers' practice in using data to design instruction, find gaps, and plan action steps with current students in mind (McKay & Dean, 2017).

I presented the findings from the data in this study in Chapter 4. The first finding described how teachers interpreted MAP data after students had taken an assessment. All 12 teachers indicated that they spent time reviewing student scores after the MAP assessment, usually by looking at the overall class data and then analyzing individual student scores. The second finding described how teachers used MAP scores and reports to make curricular changes in their daily lessons. Teachers varied on whether they change instruction completely, used it to work with small groups, or did not use the data for lesson planning at all. The third finding described how teachers' perspectives of the MAP assessment influenced their use of MAP scores to make changes within their classroom. While MAP is an adaptive assessment, teachers had mixed feelings on how an adaptive assessment fits into the classroom, especially in the older grades. The fourth finding described how teachers engaged in professional learning opportunities. Teachers are very knowledgeable about navigating and finding reports of what students can and cannot do,

yet they did not describe during interviews how they applied this knowledge to their daily lessons. The fifth finding described how teachers worked with students to set learning goals. All 12 participants, in varying ways, worked with students to set goals. However, there was inconsistency among teachers in how they used MAP to set goals with students, and goal-setting strategies with students varied from teacher to teacher.

Interpretation of Findings

The findings of this study indicated that the district at large has implemented MAP and there is consistency in giving the assessment and reviewing the results of how each student did. Yet the assessment may not be efficiently used to the greatest extent. The inefficiency is evident in the varying ways teachers used data to plan instruction, the lack of opportunities within professional development to provide teachers with training on how to use the data in the classroom, and the differing views on how the assessment should be used with students to set goals. These elements are necessary for educational change (Fullan & Langworthy, 2013).

District-wide Implementation

First, the district has adopted an assessment that is used K-12. This is supported in the literature, and research has suggested that districts mandate diagnostic, adaptive assessments so there is consistency with assessment types, accurate student data, and to increase teacher buy-in, ultimately providing coherence and uniformity in what is taught (Betts et al., 2017; Harris & Reynolds, 2018). Yet, findings from this study indicated that most teachers primarily use the data to see how students are doing, not to change instruction. This is in alignment with research provided in Chapter 2: Teachers typically

choose the material according to what they believe is essential, not on what students may or may not need (Harris & Reynolds, 2018). To increase student learning, Liu and Xiong (2018) stated that knowledge of the specific needs of each student was needed.

However, findings from the study suggest most teachers are only paying attention to the data on students deemed as low performing to create intervention groups. The idea of only using adaptive assessments to track students was a theme in the literature review and research has indicated that if the assessments are used only to track students into specific placements and not for instructional design, the assessments could hurt student academic self-beliefs (Dumont, Protsch, Jansen, & Becker, 2017). A participant confirmed this by stating that she did not like the assessment because she worried it causes students undue stress, yet, she indicated she only used the assessment to ensure students qualified for the gifted class; she did not use the assessment to change her curriculum, essentially only using the assessment to track students. Also, teachers were unaware of the power of adaptive assessments in regard to asking higher level questions. Two of the three participants who mentioned that questions on MAP do not align with their state standards felt negative about the MAP test and indicated they felt that MAP should only ask questions based on the grade they teach. This is not in alignment with the research that stated adaptive assessments allow for true differentiation for all students and that teachers should use these assessments to provide students with instruction at whatever academic level is necessary (Siuty et al., 2018).

Implementation Process

Second, MAP was implemented at different times and with different methods. Three of the participants indicated that they received no training on MAP and only one participant indicated she had an opportunity to use data in the training. Also, time to meet with colleagues varied from building to building, and discussion of MAP data was not a primary topic when teaching teams do get together. This finding is in alignment with the research identified in Chapter 2 that concluded that training is one of the most critical elements needed for teachers to use data, but training is often not provided to educators on how to use the data to plan instruction. Educators must be provided with training that is applicable to the teachers' role and include hands on learning opportunities for teachers to practice using data to make decisions (Bocala & Parker-Boudett, 2015; Gurgur, 2017; Hora & Smolarek, 2018; Sorensen, 2018). This study was also conducted in a rural setting and research indicated that rural schools have great difficulty in providing professional development due to the lack of resources (Broad, 2015; Kimbrel, 2018). One participant indicated she needed training that was more applicable to her classroom situation to use MAP more intentionally. Providing more training that allows teachers to use data in the decision-making process may increase teachers' knowledge about using data to differentiate classroom all students rather than merely to track students or identify only those students who are behind (Harris & Reynolds, 2018).

Teacher-student Collaboration

Third, the ways teachers use MAP data to work with students to set learning goals were multiple and varied. Some teachers said they do not like sharing data with students

at all while others found sharing data with students beneficial. For many participants, even if they share MAP scores and set goals with students, they focus on the score on the test, which provides little information to students on what they need to work on to improve academically. Results of this study indicated that most teachers realize that when students understand their MAP score and are motivated by the teacher, students perform at higher achievement levels. This was supported in the literature review, with research suggesting that meeting the academic needs of all students increases engagement; the more engaged students are increases how they perform in the classroom and on high stakes tests (Knekta, 2017; Putwain, Becker, Symes, & Pekrun, 2018). Teachers who indicated they worked individually with students to set goals are the same ones who indicated students tried harder on the MAP assessment and felt they were able to get a true look at each student's academic ability; this idea is supported in the literature that student achievement increases when they set goals with their teacher (McCardle, Webster, Haffey, & Hadwin, 2017; Ritzema, Deunk, Bosker, & van Kuijk, 2016). However, only one participant specifically mentioned that she used the goal setting provided by MAP as a starting point for students. For goal setting to be effective, teachers must provide a more specific goal, rather than just a score on MAP, to improve outcomes for all students (Haas, Stickeny, & Ysseldyke, 2016; Hershkovitz, 2015).

Limitations of the Study

The information from this study was limited to interview responses from public school classroom teachers of ELA, mathematics, and science in a small, rural district in the midwestern United States during the summer of 2020. Providing a clear

representation of the limits of this study may help others understand the appropriate application of these methods and findings to future research. The results of this study were limited by the circumstances of the COVID-19 pandemic and its effects on educational instruction and processes during 2020 as well as by the methodological processes used to create a complete sample of teachers in the district.

COVID-19 Pandemic

There was one limitation that may have affected the results of this study. I conducted this study during COVID-19. This required me to conduct interviews remotely through Zoom rather than in-person. Also, teachers were focused heavily on whether the school district would be returning to in-person learning or if remote learning would continue. Due to timing of the study, interviews were conducted during the summer when teachers were not actively in school. Due to closed school-buildings and alterations to traditional on-ground instruction, MAP was not given in spring 2020. Therefore, teachers only shared their experiences from prior years using end-of-year data as well as their plans to use MAP data when they become available at the next term start. Much of the conversations focused on how teachers use data at the beginning of the year with little regard to how they then compare it to the results at the conclusion of the year. Because of the timing of the study and the disruption caused by the pandemic, teachers were not asked about what changes they make during the summer after seeing data for the entire year, only how they use the data to change instruction as they go along.

Sample

One methodological limitation of this study is that K-12 teachers of ELA, mathematics, and science were randomly selected from across the district. Participants from each building were selected as long as they met the criteria, but the study did not provide an equal number of participants from each subject. This outcome may have affected the study results since mathematics and science is topic specific at each grade level while ELA is more cyclical, which could influence why some participants could change their lessons while others felt they could not without running out of time to cover everything. For future studies, I will be more aware of how grade-level and subjects influence teachers' willingness to alter instruction, possibly by using more of a survey methodology to elicit more views from all teachers.

Recommendations

Recommendations for further research are based on the strengths and limitations of this study. I recommend that this study be replicated in a district that implemented MAP K-12 at the same time. The study indicated there was a large discrepancy in training that was provided to staff due to each building implementing MAP at different times. Replicating this study would allow a more extensive view of how professional development affects teachers' use of data to make instructional decisions.

Also, I recommend that this study be replicated in a larger district that has more teachers at each grade level than the present site. Several participants mentioned that they have no colleagues with whom to discuss data due to the small size of the district. There is often only one teacher who teaches a specific course. Larger districts require more

sections of classes and a larger number of teachers. Teachers who have others to work with may be provided more opportunities within their professional learning communities to work together to make instructional changes.

Finally, I recommend that this study be replicated with a different methodology to include more voices from teachers. While my study provided thick description using the narrative tradition to understand teachers use data to make instructional changes, collaborate with colleagues, and set goals with students, other methodologies such as using a questionnaire may elicit more responses that would provide a larger pool of data to answer the research questions. Results of this study indicate discrepancies from building to building in the use of MAP and the expectations for how teachers use the data. Having more than 12 responses could increase the quality of data to provide more information about how teachers overall are using MAP data to guide instructional practices.

Implications

Implications for Practice

Results of this study indicated that teachers need more guidance from the district and building administration on expectations for the use of MAP assessments to enhance instruction. Teachers feel that MAP is valuable, but there are mixed messages being sent to teachers on what they are supposed to do with the data once they have it. Participants shared that MAP was first adopted to provide data needed for teacher evaluations and that they did not give the assessment themselves or really know how to read the data, but over the years, the district expanded MAP because of the value the data has to influence

student achievement. Teachers interviewed said that they would like more training on how to use the data to learn how to use data to effectively make changes to their curriculum or reinforced the need for teachers to differentiate for all students in the class; teachers indicated they still feel accountable only to their state standards and are generally unwilling to provide instruction on topics outside those expected to be covered in their course.

Implications for Social Change

The study presents implications for positive social change. Findings suggested that teachers have the capacity and want to learn how to better use MAP data to guide their instruction. Interviews suggested that additional professional development would be welcomed. Training that promotes the purpose of adaptive assessments, and training with appropriate andragogical practices, could provide teachers with the skills necessary to understand how to take data given to them from MAP reports and revise their lesson plans. Such training might ensure all students are being challenged and equipped with the tools necessary to be successful. Teachers can challenge each student with the appropriate lessons by working with students to set specific learning goals. Teachers are receptive to this, and many are already setting goals, but additional training, as well as consistency from teacher to teacher, could have a positive effect on student success. Effective goal setting has the potential to enhance student accountability and increase student engagement to take ownership of their learning.

Conclusion

The use of data to influence classroom decision making is not a new concept, yet teachers remain data rich while lacking an understanding the role data has in instructional planning (Gurgur, 2017; Sorensen, 2018). Research is limited on how teachers use data to design instruction (Kippers et al., 2018). Results of this study indicated that even though the target district has a data culture in place and acts consistently in using an adaptive, diagnostic assessment to measure student growth, teachers vary on using the data to change instruction. Often, data are only used to track student growth and to form small groups for intervention for students who are behind. Professional development in the target district was reported by teachers in this study to have been inconsistent when MAP was implemented and may not have provided teachers with the skills necessary to use MAP to its full potential. Teachers reported that data reports are reviewed, and results are usually shared with students, but data are not used to target each students' learning needs and teachers vary on how they set goals with students. Results of this study indicated improvements to teacher supports that might increase the effectiveness of the MAP program. Teachers who increase their efforts to use data to differentiate learning for all students and include students in the decision-making process may be surprised by the growth and achievement that result when data informs goal-directed, relevant, and engaging learning.

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Appendix A: Semistructured Interview Guide

Date: _____ Grade: _____ Content Area: _____

Interviewee Code: _____

Thank you for agreeing to speak with me. I'm going to ask some questions about MAP testing and data use. Please answer with as much detail as you can. I'm going to audio record our conversation, so I can be certain of capturing your ideas accurately. After I get the audio transcribed, I will email you the transcript so you can review it and make any changes you think are needed. Okay? Let's start.

1. After students have taken their MAP test, what is your process in using the results to make instructional decisions?
 - a. Are there certain reports that you use more than others?
 - b. What role does MAP play as you follow your curriculum map?
2. How do MAP reports drive class schedules, routines, and student?
3. What professional development did you receive when MAP was implemented?
 - a. What opportunities did you have in the training to use data to practice making instructional decisions?
4. How do you use PLC time to collaboratively share and discuss MAP data?
 - a. How does your team (grade level or department) use MAP data to plan differentiated learning experiences?
 - b. Explain the process you and your team for documenting data and student progress over time?
5. What role do students play in using MAP reports to plan instruction?
 - a. How do you engage students setting personal learning goals?

b. How do you motivate students to take ownership of their learning?

At the conclusion of the interview, the participant will be thanked for his/her time and participation. I will make sure I have their email address so I can send them the transcript for their review, and also send them a summary of the study when it is completed.

Appendix B: Codes and Categories

Codes	Categories
11 years	Years Taught
14 years	
17 years	
17 years	
17th year	
18 years	
24 years	
25 years	
34th year	
40 years	
8 years	
Twenty years	
1st grade	
10th grade Geometry	
10th-12th science	
11th grade English	
1st grade	
1st grade	
4th grade math	
7th grade ELA	
8th grade mathematics	
Fourth grade	
Science and social studies	
Second grade	Interpretation of MAP Scores
Area that the kids are low	
Areas that they are struggling with	
Areas they are strong	
Base RTI groups using MAP data	
Break it down by standards	
Brightest star	
Certain areas and target	
Class breakdown by projected goal	
Compare the third at the beginning of the year	
Could be universal	

Data need to fine tune skill groups
Data to compare
Demands remediation
Depends on what time of year
Enrich and scaffold when necessary
Enrich specific students
Focus my instruction
Get some data from them
Have an IEP
Having something to compare to
Identify students who are struggling
Kids went down
Looked at the results
Looking at those numbers
Low in those areas
Moved in
Never identified
Other schools using MAP
Outlier who doesn't fit in a group, they will go to another teacher for assistance
Overall score
percent
Pick out components
Print out everyone's score
Relate to my classes
Similar range
Snapshot of who is on track
So many gaps
Something drastic has changed
Sometimes share students
Specific skills students need to be working on
strongest
Student progress
Surprised by some of the results
topics
Want to hit hardest
Weakest links
What interventions were they already getting

Where they were	
Working with those low level kids	
Don't spend a lot of time with different reports	Reports most beneficial
Entire group of students and then different colors	
For conferences	
Get an idea of where specific weaknesses seem to be good	
Growth measuring	
Growth summary with quadrant chart	
High growth	
How long they took to take the test	
Individual reports	
Learning continuum	
Low achievement	
Parent family report	
quadrant	
Report that shows how they've changed over time	
Resource to show parents	
See that there's something that I know we've covered	
Shows you which ones are most important that you work with	
Strikes as strange and worth looking into	
Student profile	
Student progress report	
subject	
Where everyone fell	
Whole class report	
	Use of MAP for curricular changes
Add or tweak things	
Adding a second dose	
Already know there's a problem	
Area where they struggled a little bit more	
Assess how I did overall as a teacher	
Been doing it so long	
Classes are so small	
Curriculum map is pretty solid	
Diagnostic reading classes and whatnot in my repertoire	
differentiate	
Doesn't ever alter the course	

Going to teach those higher standards
 Got a kid struggling, I kind of know where to go with that
 Great reflection tool
 Great tool for decision making when it comes to RTI and small groups
 Have altered instruction
 If all show they need to develop in probability standards, then deciding to spend more time than originally planned
 Makes sure I'm hitting reading comprehension skills
 Not going to say that I alter things necessarily
 Not so much as far as whole class teaching
 Nothing's going to change in the next year that is going to have an impact on me
 Piece of my classroom puzzle
 Racing to get everything done
 Small group
 Tailor it from there
 Take a look at where they were and where they're going
 Test helps pinpoint which kids need work
 This is what that student needs
 Too old a dog and came too late to the race to be invested
 Use it to make sure students remain on track
 What we do with our kids and the results we get
 Where I am in my career, I don't care
 Whole class is kind of clumped together

Based on those scores
 Clustered with a normal group of students
 Drive RTI grouping schedules, small classroom groups, CAFE goals, and individual math instruction
 Evenly distributed
 High kids that need to be pushed
 How they're grouped
 Mandatory class
 Mixed in with low and high students
 More for the intervention
 Not clustered
 Not used for scheduling or placement
 One classroom with high scoring students
 Student placement

Use of MAP for scheduling or student placement

Students can elect to take

Two classrooms of gifted

With the intervention

2 MAP trainings

Training

A lot of data available

access

Actual training

Before school

Brief overview

Computer labs

Couldn't work through our own data

Didn't have data yet

Didn't know how to use or that it was there

Had one meeting on it

How you could run the reports

I can't recall for a MAP

I wasn't at that training

Leaned towards navigating the system

Look at the data

Meet with the principal

Phenomenal woman presenter

Professional development day

Real live raw data

Really good in-service

SAT meetings

Several PD sessions devoted to MAP testing and data review

Show us all the things we had

Somebody trained us

Speaker come in

Spent a lot of evenings learning together

Talked to a lot of people around the district

Totally unaware were available

tutorials

Walk us through it

40 minutes

Collaboration Using Data

A day or two to meet with other teachers and talk about it

After an assessment

After people have analyzed
 All teach different things
 Couple hours periodically to meet and talk about it
 Data and gaps
 Department meetings once a month
 Design lessons
 Different teachers see different strengths
 differentiation
 Entire grade level
 Every second or third week
 Four days, team time
 How we interpret it
 How we ran something
 Isn't overlap in our classes
 Kids that are really low
 Look at different students over time
 Make time if needed to help
 Never discussed or gone over as a group
 Once a week on Science
 Sit down as a team and look at trends
 Small group help
 Stop by before school, after school, lunch
 Strategies on what works
 Talked about it
 Team time was given during PD to look at individual and grade level scores
 We are really good if someone has a question
 We have discussed it
 We've looked at when it comes time to it.
 Where our gaps were
 Work together to fill in gaps
 Working with intervention specialist, we pull out MAP scores to determine what's going on or to get better insight

Areas that jumped out
 compare
 Compare it
 concern
 Different patterns

Organization of Data

Don't have it written down anywhere
 Easily accessible in case of concern
 End of the year
 File folder in google drive
 First report card
 General biology when of end of year tests
 Huge notebooks
 Keep it in progress book
 Kept in a notebook
 Low end
 Make a column with where they are
 Make a copy of the students
 Measure their growth
 outlanders
 Parent teacher conferences
 Print more in-depth information
 Print out a couple different reports
 Print out the class breakdown
 Print report and highlight
 Print some things out
 Pull it back up for certain classes
 Run analysis
 Save as PDF

Almost question

Sharing results with students

Always very curious

Ask a lot of questions about what their score means and how they did

Don't meet with every student individually

Downward trend

Explain to my kids what percentile scoring meant

Give it back to them

I compare

I'll print off their profile for them

It's what you are learning

It's not my teaching

Keep that piece of paper

Little discussion about what all the numbers mean

Makes them more interested in doing well

Maybe you need to try again
 Might talk to the student
 Not as probably in depth
 Not talk about specific area
 Ok to make mistakes
 Printed it out but student didn't care
 Remember my score from last time
 Score pops up for them
 Sometimes it adds more stress to student
 Sometimes they fall back
 Sometimes they go miles ahead
 Take each student into consideration when sharing reports
 Test scores are important
 The higher level thinkers understand the numbers and reaching a certain goal
 They were all interested
 Try to answer those questions
 Understand why they're important
 What do you want to get from English this year
 What does it mean
 What things good readers do

Asked parents to send in notes

Motivating Students

Challenge each student to practice and do their best
 Don't bore you with going over stuff
 Figure out I have to wait long enough to do my clicks
 Go and talk to them
 Go back and check answers
 Have extra recess
 Kids not working very hard
 Matters is that you've done a good job
 More than just scores on the test
 Nobody can be done before an hour
 Not too much pressure
 Personal note on their desk
 Piece of candy
 Redo MAP
 See an improvement next time
 Student tries hard but has a bad day

Students in my classroom are much more than a number

Talk to the class before

Tell them they're going to take it until I'm satisfied that they gave an effort

They know they've messed up

This isn't accurate

Trusting relationship

Try to explain to always do best

What effort did you put in

Whatever kid's level is OK

Changed my teaching

Positives of MAP Tests

Data from it

Everybody at their level

Having kids in system

Helps students

MAP test show me I wasn't reaching the highest kids

More beneficial to have MAP than proficiency tests

More tangible and only deals with our kids

Much better handle on those low level kids

See trends

Valuable tool

Content that is covered on the map test doesn't directly relate to what they are learning in those classes

Negatives of MAP Testing

Doesn't align with what they've been learning

Doesn't diversify

Good through 10th grade

Rigor is already there

When it's that small of a group, I don't need a piece of paper to say this kid needs more
