ZEMAITIS, JULIANNE. Ph.D. Multiple Case Study of the Relationship Between Data Use and Evaluative Thinking in School Improvement Planning. (2022)
Directed by Dr. Jill Anne Chouinard and Dr. John Willse. 187 pp.

Despite acknowledgement in the data-informed decision making (DIDM) literature that data use is not a purely rational process, there has been little attention paid to the role of values and normative factors that underpin school improvement planning (SIP) processes and little consideration of the inherent evaluative nature of associated activities in K-12 educational contexts. Through interviews, observations, and the review of documentation related to SIP activities, this multiple case study explores data use practices and evaluative thinking within the context of two, Title I, targeted support and improvement (TSI) elementary schools in a single district in North Carolina. The findings suggest that SIP processes in these contexts are shaped by social and historical factors as well as the leadership philosophies and practices of principals. The findings also provide insight into how school SIP teams adapt current institutional policies and mandates as well as data tools and existing data infrastructures to balance adherence to requirements and for addressing local needs. Implications of this study are discussed in relation to the modernist orientations of evaluation that emerged in these SIP contexts. In subtle but important ways, this orientation narrows the focus of SIP teams to technical and rational understandings of what are ultimately complex social and political problems. Furthermore, the discussion highlights how this orientation to SIP processes limit opportunities for local educators to engage in evaluative thinking and critical reflection to promote nuances and rich understandings of local contexts, as well as more complete and balanced understandings of the impacts of SIP strategies or initiatives that are implemented.

MULTIPLE CASE STUDY OF THE RELATIONSHIP BETWEEN DATA USE AND EVALUATIVE THINKING IN SCHOOL IMPROVEMENT PLANNING

by

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A Dissertation

Submitted to

the Faculty of The Graduate School at

The University of North Carolina at Greensboro

in Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

Greensboro

2022

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DEDICATION

To my family, who have loved me without condition and believed in me through it all.

APPROVAL PAGE

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ACKNOWLEDGEMENTS

When I embarked on this journey, I could have never imagined the many twists and turns ahead, nor the invaluable community of support that would guide me and encourage me along the way. First, I would like to extend my deepest gratitude to my dissertation committee. Dr. Chouinard, thank you for reaching across the aisle to work with me as I straddled the lines between measurement, assessment, and evaluation and for sticking with me and guiding me throughout this study despite the distance and challenges that arose amidst the pandemic. Your continuous support and invaluable feedback have challenged and expanded my thinking in ways that have made me a better researcher and scholar. Dr. Willse, thank you for always bringing your methodological expertise and a sense of pragmatism to the table to keep me moving forward. Dr. Boyce, thank you for your continuous support; I truly admire the passion, humanity, joy, and love for the field of evaluation that you bring to your work. Dr. Archibald, thank you for providing insightful feedback and suggestions that pushed my thinking around evaluative thinking and how it might manifest in these contexts. Dr. Ayoo, thank you for your willingness to jump in and be a part of my committee and for your helpful suggestions during this process. I am also deeply grateful for all the faculty and staff in ERM who mentored, challenged, and supported me along the way. A special thank you to Dr. Micheline Chalhoub-Deville, Dr. Bob Henson, Dr. Richard Luecht, Jewell Pradier, Dr. Aileen Reid, Dr. Devdass Sunnassee, and Dr. Tiffany Tovey.

In addition to the faculty mentors who have supported me throughout this journey, I would like to thank my many peers, colleagues, and friends who have been there for me through some of the best and some of the most challenging times. A special thank you to Meltem Yumsek, my partner in crime during the first part of our program and my sister for life. Many

thanks and cheers to my ‘pandemic family,’ Jeremy Acree, Justin Long, Nasaa Enkhbold, and Mohammad Fereydouni. Thank you for being critical thought partners whenever I needed someone to bounce ideas off of and for lifting my spirits whenever the going got tough. Also, to my life-long friends, Summer Braun, Elizabeth Zarantonello, and Sarah Schlesser, who have been there through it all. I cannot thank you ladies enough for always lending an empathetic ear and cheering me on.

From the bottom of my heart, I would like to thank my family, who have loved and supported me in ways I cannot begin to describe. Mom, Dad and Taz, thank you for teaching me the value of hard work and for instilling in me the curiosity and drive to seek understanding, connection, and meaning in all that I do. Even in the face of immense obstacles and doubt, you all have empowered me to believe and persevere. To all of my extended family, both here and in memory, thank you for all of the love you have showed me and the sacrifices you have made that have allowed me to further my education and chase my dreams. I am forever indebted to each of you and hope to make you proud.

Finally, I would like to thank the district partners and school staff who made this study possible. May we continue to learn from each other and engage in critical partnerships so that we can ask the big questions about what matters in education and learn how to better meet the needs of our students and educators in practice.

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LIST OF ABBREVIATIONS

Abbreviation	Meaning
AIG	Academically and Intellectually Gifted
AY	Academic Year
AYP	Adequate Yearly Progress
CSI	Comprehensive Support and Improvement Schools
DIDM	Data-Informed Decision Making
EC	Exceptional Children or Students with Disabilities (SWD)
EL	English Learners
ESSA	The Every Student Succeeds Act
ESEA	The Elementary and Secondary Education Act
ET	Evaluative Thinking
GLP	Grade-level Proficiency
ILT	Instructional Leadership Team
MCL	Multi-Classroom Leader
MTSS	Multi-Tiered Systems of Support
NCDPI	North Carolina Department of Public Instruction
NCLB	No Child Left Behind
PBIS	Positive Behavioral Interventions And Supports
SBLT	School Based Leadership Team (i.e., SIP team)
SEL	Social and Emotional Learning
SIP	School Improvement Planning
SPG	School Performance Grades
TSI-AT	Targeted Support and Improvement – Additional Targeted Support Schools
U.S. DOE	United States Department of Education

CHAPTER I: INTRODUCTION

There exists an inextricable link between data use and accountability policy in the United States. Educator engagement in data-informed decision making (DIMD, also referred to as data-driven or data-based decision making) (Jimerson, 2016; Marsh, Pane & Hamilton, 2006), is a key feature in contemporary federal accountability policies that are intended to promote school reform, instructional improvements, and student achievement (Mandinach, 2012; Schildkamp, 2019). Since the enactment of the *No Child Left Behind Act* (NCLB) of 2001, federal accountability mandates have imposed requirements on schools and states that promote engagement in systematic inquiry, with notable emphasis on the collection, analysis, reporting and response to findings derived from student achievement outcomes (Crone, Carlson, Haack, Kennedy, Baker, & Fien, 2016). Furthermore, federal provisions of the *Individuals with Disabilities Education Act* of 2004, which allowed response to intervention processes to be used as a part of the identification and progress monitoring processes for students with disabilities (Jimerson, 2016; Jimerson, Burns, & VanDerHeyden, 2016), positioned data-based frameworks for decision making and "a team-based approach for leading, planning, and evaluating intervention effects" (Jimerson et al., 2016, p. 2) squarely into the professional practices of educators.

The focus of contemporary accountability policies on data use has led to more widespread discussions related to how educators embed data use into their professional roles as well as how they engage in systematic inquiry and reflective practice as they transform data into information and actionable knowledge to better serve their students (Coburn and Turner, 2012; Cramer, Little & McHatton, 2014; Schildkamp, Lai & Earl, 2013; Wayman, Spikes, & Volonnino, 2013). As McFadden and Williams (2020) discuss in the Australian education

context, such processes of synthesizing, deriving meaning, and determining the most appropriate course of action are inherently values-engaged and, therefore, require teachers to render evaluative judgements and act as evaluators in their professional roles. This becomes even more apparent in the context of current accountability policies that mandate educator engagement in School Improvement Planning (SIP) processes to identify/diagnose issues, inform intervention strategies, and monitor progress toward locally specified goals. More specifically, the current accountability model in North Carolina, where this study is conducted, requires underperforming schools to engage in data use and evaluation as a part of a continuous improvement model for school improvement. Specifically, as outlined in the consolidated state plan approved by the NC's State Board of Education (NCDPI, 2017), all districts should implement Multi-Tiered Systems of Support (MTSS), which they describe as:

> …a problem-solving school improvement framework of evidence-based practices in instruction, assessment, and curricula alignment that addresses the needs of all students. MTSS allows educators to analyze the overall health of the educational system by examining the system, implementation, and outcome data sets. (p. 121)

The use of data-based problem solving and establishing data and evaluation systems are two of six core components of MTSS. The North Carolina Department of Public Instruction (2016a) created a guidance document for school improvement planning that states the following:

> Given the importance of data-based problem solving within an MTSS model, the need for a data and evaluation system is clear. In order to do data-based problem solving, school staff need to understand and have access to data sources that address the purposes of assessment. Procedures and protocols for administering assessments and data use, allow school staff to use data to drive decision making. In addition to student data, data on the

> fidelity of MTSS implementation (including fidelity of implementation of all instructional practices) allow school leadership to examine the current practices and make changes for improving MTSS implementation. (p. 16)

As such, North Carolina's accountability plan makes it clear that data systems and data use practices are foundational to both the implementation and evaluation of MTSS, and by extension the school improvement planning processes that unfold within schools in the state that are in the process of establishing MTSS. Furthermore, this same document goes on to highlight the importance of continuously monitoring the progress of school improvement efforts. Specifically, it states that "[e]valuating progress is part of the [MTSS] process, hence lack of monitoring could adversely affect the ongoing cycle of improvement" (NCDPI, 2016a, p. 19). As such, this study will endeavor to explore the relationship between evaluation practices and thinking and school improvement efforts through the lens of data use practices within school improvement planning teams.

Purpose

Although there is an emerging body of research on how data-driven decision making unfolds in K-12 contexts and the factors or conditions that effect this process (Kowalski & Lasley, 2008; Marsh, Sloan McCombs & Martorell, 2010; Moss, 2007; Schildkamp, Lai, & Earl, 2013; Spillane, 2012), relatively little attention has been paid to the role values play in this process (Brighouse, Ladd, Loeb, & Swift,2018) and the extent to which educators (i.e., classroom teachers, school support staff and administrators) must engage in evaluative activities while undertaking school improvement activities. The lack of attention to normative factors and the role of values in the data use literature is likely an artifact of the underexamined assumption that knowledge construction about 'what works' in education can (and should) mirror that of

other science-based fields, such as medicine, agriculture and technology (Slavin, 2002). Instead, it will be argued that the context-dependent and contested nature of education in and of itself requires educational stakeholders to constantly grapple with questions that are values-engaged and that require judgements about what matters in education - from the identification of issues and establishment of goals and targets to the selection of indicators and means of monitoring progress. Therefore, when educators engage in systematic inquiry as a part of SIP activities to improve their practices and the quality of education they are providing to their students, they are implicitly assuming an evaluative role. As such, it becomes critical to consider how and in what ways K-12 educational institutions might facilitate or impede individuals' and groups' abilities to engage in rigorous and meaningful evaluation practice at the local (i.e., school) level as a part of these activities. Furthermore, capacity building activities intended to support the work of SIP teams must go beyond data and assessment literacy to building these teams' capacity to do and use evaluation to serve their local needs and ultimately improve their professional practice and serve their students.

Guiding Theoretical Frames

In the context of this inquiry, data use in K-12 settings will be conceptualized as both a context-dependent, situated practice embedded in professionals' roles, as well as a sociotechnical 'sensemaking' process that is shaped by individual, collective, and institutional worldviews, resources and capacities. Specifically, data use within SIP teams will be characterized as what Spillane & Miele (2007) term "work practice," or the patterns that emerge from the interactions between individuals and their environment over time as they engage in their professional role. At the heart of this conception will be a focus on what Mandinach and Gummer (2016) refer to as data literacy, or a practice that "combines an understanding of data with standards, disciplinary

knowledge and practices, curricular knowledge, pedagogical content knowledge, and an understanding of how children learn" (p. 14). Therefore, the focus of this study will be on data use practices that SIP teams routinely engage in, how these practices intersect with educators' professional knowledge and roles.

Furthermore, this study will adopt a sociotechnical perspective of data use (Piety, 2011), meaning that data use work practices (i.e., the acts of noticing, interpreting, and making implications from data) will be assumed to occur where data infrastructure and tools within organizations (e.g., data components, linkages, quality, technology features) intersect with the organizational and political realities of the context (e.g., norms, routines, leadership and power structures). This framing highlights the reciprocal interaction that occurs between and among educators and the social structures of the educational context in data use situations and suggests that "simply extracting actions or strategies from their place and time is insufficient for understanding work practice" (Spillane & Miele, 2007, p. 59).

Taking these conceptual understandings of data use as a foundation, this inquiry will assume a systems lens that acknowledges the myriad of social, political, institutional, collective and individual factors that shape data use on SIP teams. As stated by Coburn and Turner (2011):

> Data use is a phenomenon that spans boundaries of disciplines, implicating issues of measurement and assessment, issues of learning and cognition, issues of organizational context and change, and issues of power and politics, among others. (p. 227)

With this pluralistic, dynamic and integrated conception of context in mind, this inquiry will draw upon Young (2006) and presuppose that the challenges of engaging in effective data work practices on SIP teams are both rational and normative in nature – i.e., the capacity for SIP teams to engage in meaningful data use practices is moderated by rational factors related to technical,

logistic and practical affordances or limitations as well as normative factors or "the non-rational aspects of the system: norms, values, and capacity situated in role definitions and hierarchy" (Young, 2006, p. 545). It is this duality of influence from both rational and non-rational or normative factors on data use practices that provides an opening for the exploration of how SIP team members are attending to such factors in their own data use work practices and are, therefore, indirectly engaging in evaluative thinking.

Research Questions

With these guiding frames in mind, this research study will seek to answer the following questions:

1. How do individuals and groups at the school level (i.e., classroom teachers, school support staff, as well as school administrators) engage in and use data to support School Improvement Planning (SIP) processes?
    a. What are the mediating factors that influence this process?
2. What is the relationship between school improvement efforts and evaluative thinking (i.e., situated, systematic, principled, and critically conscious reflection on the valuing processes enacted to arrive at evaluative judgements or decisions)?

Relevance

This study will seek to extend the "teacher as evaluator" conception put forth by McFadden and Williams (2020) and explore the relationship between data-informed decision making (DIDM), evaluative activities, and evaluative thinking in the context of SIP teams. Because DIDM occurs within dynamic educational, political and social systems and contexts, specific attention will be paid to exploring educator communities of practice and networks (Wenger, Trayner, & de Laat, 2011) that support assessment and evaluation activities embedded

within DIDM activities. More specifically, this study will explore how educators engage in SIP processes, with particular attention paid to the role values play in this process and the extent to which they engage in evaluative thinking in practice. This study will focus on gathering a snapshot of how evaluative activities are embedded within SIP process and the extent to which evaluative thinking is exhibited by the educators engaged in SIP processes at the school level. Undertaking such a study is expected to highlight the critical, but often overlooked, evaluative activities that teachers and school support staff assume in their professional roles. Furthermore, it is hoped that this inquiry will highlight the need for evaluation capacity building in schools and districts, especially in light of current school improvement practices that assume the ability for educators and educational administrators to engage in evaluative thinking in order to facilitate meaningful and contextually-relevant SIP efforts. In what follows, I will define some of the key terms that will be used throughout this study.

Clarification of Key Terms

Evaluation

As those in the field recognize, there is no one definition of evaluation. Instead, as suggested by Dahler-Larsen (2012), definitions of evaluation can be categorized as being conceptual-analytical, methods-focused or purpose-focused in nature. From the conceptual-analytical lens, evaluation has been characterized as "the process of determining the merit, worth, or value of something, or the product of that process" (Scriven, 1991, p. 139) or as *praxis*, i.e., a socially embedded way of being (Schwandt, 2002). Interestingly, these definitions do not address the use of evaluations. However, methods-focused definitions of evaluation, such as the following definition from Rossi and Freeman (1985) suggest that evaluations are undertaken in an effort to render judgments and promote improvement via the application of social research

methodologies: evaluation research is the "systematic application of social research procedures in assessing the conceptualization and design, implementation, and utility of social intervention programs…[It] involves the use of social research methodologies to judge and improve the planning, monitoring, effectiveness, and efficiency of health, education, welfare, and other human service programs" (p. 19). Furthermore, as might be expected, purpose-focused definitions of evaluation attend even more directly to use. For example, Weiss' (1998) belief that at its core, evaluation is intended to provide information for action and assert that "[e]valuation is the systematic assessment of the operation and/or the outcomes of a program or policy, compared to a set of explicit or implicit standards, as a means of contributing to the improvement of the program or policy" (p. 4) speaks to the centrality of use in this conception.

As such, this inquiry will place *use* at the center of the difference between evaluation and related modes of inquiry. Placing use at the center of the distinction between the evaluation and research distinction, and therefore at the heart of evaluation practice, is evidenced in early discussions within the field. Specifically, Cronbach and Suppes' (1969) claimed that although both evaluation and research are types of "disciplined inquiry", evaluation is a "decision-oriented" inquiry whereas research is "conclusion-oriented" in nature (p. 20). Therefore, in the context of this study evaluation will be understood as an inherently "practical craft" (Alkin & King, 2017, p. 569) that goes beyond basic research in that it seeks more immediate and local knowledge construction and application. Furthermore, evaluation will be conceptualized in a broad and general sense as a transdiscipline or "an analytical process in all disciplined intellectual and practical endeavors" (Scriven, 1991, p. 1). Specifically, drawing upon the conceptualization put forth by Scriven in the fourth edition of the *Evaluation Thesaurus* (1991), evaluation will be understood as a situated practice involving the "logical and scientific tasks"

(p. 5) of data gathering via the selection, collection, clarification, and verification of relevant metrics, values and standards as well as the synthesis of evaluative information in ways that facilitate the rendering of evaluative conclusions. Therefore, evaluation must be understood as more than data-gathering or data-reduction; instead, it must also engage evaluative thinking, or a metacognitive process that "combines critical thinking, creative thinking, inferential thinking, and practical thinking" (Patton, 2018, p. 21) to facilitate the rendering of evaluative judgements. Thus, evaluation is more than a process of rendering judgements based on conjectures of taste/preference or subjective value-judgements. Rigorous evaluation requires critical, contextually sensitive and socially conscious systematic inquiry that supports the rendering of rigorous, logical, and justifiable evaluative conclusions in a given context.

Evaluative Thinking

Although the concept of evaluative thinking is not new in the field of evaluation, it has enjoyed renewed attention in recent years with a special issue of *New Directions in Evaluation* dedicated to the topic in 2018 (Vo & Archibald, 2018, Eds). In this special issue, Patton (2018) argues that the dominant perspective in the evaluation field that evaluative thinking (ET) is akin to critical thinking is too narrowly defined and misses important aspects of the construct. Specifically, equating the two concepts misses the role of critical consciousness (Freire, 1970) or the development of a "deep, meaningful, realistic, and reality-based understanding of one's world" (Patton, 2018, p.14) required in evaluative thinking. Instead, Patton (1018) argues that evaluative thinking can be more accurately conceptualized as a combination of critical thinking, creative thinking, inferential thinking, and practical thinking. Furthermore, research suggest that evaluative thinking can be characterized as a facet of society/culture (norm), a professional value (moral/ethic), a competency (skill), and an aspect of evaluation practice (a phenomenon) (Vo,

Schreiber & Martin, 2018). In alignment with this multifaceted nature of evaluative thinking outlined by Vo, Schreiber & Martin (2018), Buckley, Archibald, Hargraves, & Trochim (2015) have previously defined evaluative thinking as

> …critical thinking applied in the context of evaluation, motivated by and attitude of inquisitiveness and a belief in the value of evidence, that involves identifying assumptions, posing thoughtful questions, pursuing deeper understanding through reflection and perspective taking and informing decisions in preparation for action. (p. 378)

While considering the various definitions of evaluative thinking and operationalizing this construct, it is important to clarify that the rendering of evaluative judgments does not equate to engagement in evaluative thinking. As Vo et al. (2018) note, cognition and application unveil opportunities for evaluative thinking via the identification and critique of "perceptions and beliefs that are shaped by values as well as support the systematic derivation of an entity's value" (p.38). As such, evaluative thinking requires something akin to meta-cognition while individuals and groups are acting in these spaces such that they are explicitly attending to and reflecting on the values and valuing processes that are espoused and enacted within their local context.

For the purposes of this research study, evaluative thinking will be conceptualized as situated, systematic, principled, and critically conscious reflection on the reasoning and cognition that underpin valuing processes enacted to arrive at particular evaluative judgements or decisions in a given context. The systematic nature of evaluative thinking arises from definitions of evaluation that characterize it as systematic assessment (Weiss, 1998) or the systematic application of social research procedures (Rossi & Freeman, 1985). Furthermore, the situated nature of evaluative thinking emerges from Schwant's (2002) conception of evaluation as a

proaxis or socially embedded way of being as well as Vo et al.'s (2018) argument that it is framed by the norms within a particular society or culture and/or the morals and ethics of particular professional fields of practice. Finally, the critically-conscious and reflexive nature of evaluative thinking draws upon Patton's (2018) definition, which balances practical reality-based understandings with deeper and more reflexive understandings that incorporate critical consciousness (Freire, 1970).

It is theorized that evaluative thinking can be manifest as a mode or norm of engagement via the work practices of educators in these contexts and as a component of educators' professional ethics and practices. Furthermore, it is posited that evidence of evaluative thinking will be most evident when there are opportunities for critical reflection related to SIP processes associated data use practices as well as how these teams attend to and reference values and valuing processes during the decision making and action planning stages of the process.

Data & Data Use

In the context of this study, data will be conceptualized broadly such that it will include both formally and informally collected data of various types. Since the focus will be on evaluative thinking in the context of SIP activities, the type of data that is being used will be less important than *how* it is being used in this context. Furthermore, because the primary focus of this study will be on evaluative thinking, although the nature of the data is not of particular importance, the extent to which data is systematically identified, selected, analyzed, and interpreted will be of concern. This distinction stems from the distinction previously made between evaluative judgements and evaluative thinking. Specifically, it will be assumed that the values-engaged nature of data use practices requires individuals and groups to engage in evaluative judgements while carrying out SIP activities. However, the extent to which evaluative

thinking is manifest in these contexts depends on the extent to which SIP members systematically identify and scrutinize the evaluative judgements inherent in their work.

Data-informed Decision Making

In this inquiry, SIP activities will be framed as a type of data-informed decision making process. As such, literature related to data-informed decision making (DIDM), data-based decision making (DBDM), and data-driven decision making (DDDM) in K-12 contexts will be used to identify models of data use that undergird SIP activities. Because these terms are often used interchangeably, the semantic choice will be made to use DIDM in lieu of the other terms. Although these three terms are often used to describe the same processes and activities in the literature and in practice, framing this process as the use of data to *inform* decisions better captures the fact that information and knowledge resulting from the data use process are rarely, if ever, the sole consideration in the decision-making process. On the contrary, additional factors such as individual and collective values, beliefs, and priorities as well as feasibility, capacity and resource availability are often considered when rendering decisions and determining future courses of action. Furthermore, the DIDM will be conceptualized broadly in the context of this study and should be interpreted such that it subsumes other terms for inquiry-based practices and the use of data from a variety of sources, including formal and informal, qualitative and quantitative, assessment and observational data.

Assessment, Measurement and Testing

Inconsistencies in usages and ambiguities about the meaning of the terms 'assessment', 'test', and 'measurement' are widespread (Kubiszyn & Borich, 2007), particularly in discussions of educational policy (Mislevy, 2017). For example, Gray (2002) acknowledges that "…the term assessment is often used synonymously with testing and measurement" (p.58, emphasis in

original). As such, the following definitions, which are based upon those provided in the *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, National Council for Measurement in Education, 2014), Kubiszyn and Borich (2007), and Mislevy (2017), will be used in this inquiry:

- Measurement: provides a quantitative framework for translating test or assessment observations onto a scale that allows for subsequent interpretations and inferences about the knowledge, skills or abilities the assessment is designed to target.
- Test (or examination): an instrument, evaluative device or procedure that collects systematic samples behavior in a domain of interest that are scored according to a standardized process; a particular assessment instrument.
- Assessment: can refer to both an instrument (i.e., a test) for *measuring* the characteristics or performance of individuals, programs or other entities; or a systematic method (i.e., a process/procedure) of *gathering information* about the characteristics of people, objects, or programs. The term assessment instrument will be used interchangeably with test and assessment process will be used more generally as the process of gathering or preparing data for subsequent use in the decision-making process. Furthermore, comprehensive assessment processes will be defined as those that precede evaluative judgements via the integration findings from multiple measurement procedures as well as other indicators in order to generate local knowledge that can then be used to inform decision making processes and render evaluative conclusions.

Although these definitions are by no means exhaustive, the hope is that they will provide a helpful reference and will minimize confusion between these terms in the subsequent discussion.

Outline of the Dissertation

The following chapter is a literature review focusing on exploring the philosophical and political, and practical foundations of contemporary SIP activities within U.S. institutions. This review will include a discussion of the historic foundation of educational accountability policies, with particular attention paid to the impact of principals of scientific management, as well as a discussion on the theories guiding best practices related to data use and DIDM in schools, which sets the foundations for the structures and practices of SIP teams in today's schools. The literature review will conclude with the description of a conceptual framework that integrates evaluative thinking into the contemporary models guiding SIPs in today's schools. Following the discussion of the current state of literature, the focus of the present study will be outlined, along with the research questions guiding this inquiry and the anticipated contribution to scholarly work related to school improvement in schools. The subsequent chapter will outline the proposed methodological approaches for this inquiry, namely a multiple case study (Creswell, 1998) that is descriptive in its intent (Yin, 2009). It will describe the epistemological and methodological foundations that will undergird this study as well as more practical procedures for case selection and recruitment. Where appropriate, additional details will be provided in relation to particular instrumentation, data analysis and data quality procedures. This chapter will then conclude with a proposed timeline for the inquiry.

CHAPTER II: LITERATURE REVIEW

The review that follows will first outline literature related to data use and data informed decision making (DIDM) in schools that support school improvement efforts. This discussion will include the nature of the data leveraged in K-12 contexts and its uses, as well as the predominant models of data use in the literature that set the foundations for theories of effective data use and best practices related to school improvement planning (SIP) activities. Then, since data use is conceptualized as an inherently situated practice, the literature will turn to key factors in the literature that impact data use processes in practice, namely: educational policy, institutional context, school culture and leadership structures, and individual and collective data capacity and valuing. Finally, a conceptual framework for the study will be presented by overlaying literature related to evaluative thinking onto a working theoretical model for how SIP teams are expected to work in contemporary schools.

The Nature of Data in K-12 Contexts

Before diving into a discussion of the predominant models of data use in K-12 settings, it is important to explicate what is meant by the term data in this context. Review of the literature on data use in schools and data-driven decision making makes it readily apparent that what counts as 'data' varies across contexts and levels within educational systems, with variations emerging within and across schools, districts, and even professional communities of practice (Snodgrass Rangel, Bell, & Monroy, 2019). As Mandinach and Gummer (2016) assert, data can broadly be conceptualized as discrete empirical pieces of evidence that are given meaning and transformed into information via consideration of context. However, in general, what constitutes data in educational institutions can be broadly categorized as formal or informal data, research results, and 'big' data (Schildkamp, 2019).

Formal data includes quantitative or qualitative data collected about educational stakeholders (e.g., students, parents, school administrators, classroom teachers, community members) that is collected in a *systematic* way. Examples of formal data include that collected via assessments as well as structured observations, surveys, interviews, and focus groups. Much of the research on data-informed decision making in schools and models of data use focus on this type of data (Mandinach, Honey, Light & Brunner, 2008; Marsh, 2012; Marsh, Pane, & Hamilton, 2006; Schildkamp & Poortman, 2015). Furthermore, many studies on data use in school settings focus even more narrowly on formal assessment data, which can be further partitioned into data from externally developed assessments (i.e., data from standardized state assessments and standards-aligned district interim or benchmark assessments), periodic data from periodic commercially available diagnostic assessments, school-wide assessments (i.e., assessments administered across groups of students within schools that are aggregated and analyzed over time to guide school and teacher decision making) and more locally-developed classroom-based assessments (Supovitz & Klein, 2003; Wayman, Wilkerson, Cho, Mandinach, and Supovitz, 2017).

On the other hand, informal data is collected as a part of everyday practice via observations and dialogues that unfold within the learning environment. Although this type of data is collected outside of formal assessment contexts, it is interesting to note that this type of data has been described as unfolding within an 'assessment-for-learning' instructional approach "part of everyday practice by students, teachers and peers that seeks, reflects upon and responds to information from dialogue, demonstration and observation in ways that enhance ongoing learning" (Klenowski, 2009, p. 264, as cited in Schildkamp 2019). As such, informal data is

more intuitive in nature and often forms the foundation for professional judgements that are made in practice (Vanlommel and Schildkamp, 2018, as cited in Schildkamp 2019).

The last two types of data (i.e., research data and big data) are less infused into the work practices of educators. Specifically, data from research results includes information from scientific research studies that is considered to inform actions or interventions within the local context. In the context of SIPs, this type of data includes evidence-based practices (EBPs) that are reviewed to inform the selection of interventions or actions to take in an effort to address issues identified during the school's needs assessment. Although this type of data would be expected to be instrumental in the SIP process, the extent to which individual educators and SIP team members individually engage within and consider the implications of this data are less clear. The final type of data, 'big data' is defined by its volume, variety and the velocity with which it is updated (Laney, 2001, as cited in Schildkamp, 2019) often used at a more organizational level for prediction and modeling. Although this is an important source of data at higher-levels of educational institutions, the distal nature of such data from the everyday work practices of SIP teams suggests that this source of data will likely not be instrumental in SIP activities at the school-level.

Data Use in K-12 Institutions

In light of the variety of data that can be leveraged for decision making with schools, much of the focus of educators as they engage in the data use processes must be on the selection and synthesis of multiple sources of data to meet particular needs or to inform particular decisions that need to be made (Abrams, Varier, & Jackson, 2016). In this way, data *use* – not the data itself – is of primary importance when trying to understand data-driven decision making in K-12 contexts. Much of the literature related to data-driven decision making is predicated on

the fact that data use is a highly contextual processes that manifests in how individuals and groups of educators actively engage in the process of sensemaking. However, Schildkamp (2019) suggests four general types of data use in these contexts draw upon the broad categories of use discussed in the field of evaluation (Alkin and Taut, 2003; Alkin & King, 2016). Specifically, Schildkamp (2019) suggests that instrumental use occurs when direct actions are taken at the school or classroom level as a result of insights from data; conceptual use or enlightenment occurs when data results in changes in the thinking of teachers and educational administrators; strategic data use (i.e., legitimative or persuasive use) occurs when data is leveraged in particular ways to garner power or attain specific goals; and symbolic use occurs when the data use process is used in a superficial way. Furthermore, this body of literature suggests that at the school level data uses can be broadly categorized as follows: (1) diagnostic uses to identify/clarify instructional or organizational issues, (2) uses that allow decision-makers to weigh alternative courses of action, (3) uses that inform daily practices, and (4) uses that facilitate the management of meaning, culture and motivation (Knapp, Copland, & Swinnerton, 2007).

Furthermore, Coburn's (2001) sensemaking theory is foundational to understanding how data use occurs in K-12 contexts. Specifically, this theory posits that within the context of data-driven decision making "…action is based on how people notice or select information from the environment, make meaning of that information, and then act on those interpretations, developing culture, social structures, and routines over time" (p. 147). Throughout the data use process, users must "[balance] expectations regarding their use with what inferences they [are] able to make from the sources" (Abrams, Varier, & Jackson, 2016, p. 21). As such, effective data use is predicated on educators' knowledge of particular formal and information data sources and the quality of the information they are able to provide for particular purposes. In relation to

knowledge of data, some studies have shown that it is beneficial for educators to understand basic measurement principles (i.e., distributional characteristics, percentile ranks, cut scores, standard error of measurement, domain and skill mapping, etc.), analytical procedures, and assessment concepts and receive ongoing professional development related to these topics, are instrumental for data usage (Bettesworth, Alonzo, & Duesbery, 2009). However, knowledge of data is not sufficient. Instead, in order to effectively use data to inform decision making, educators must develop data literacy or what has been defined in the literature as

> …the ability two transform information into actionable instructional knowledge and practices by collecting, analyzing, and interpreting all types of data (assessment, school climate, behavioral, snapshot, longitudinal, moment-to-moment, etc.) to help determine instructional steps. [This] combines an understanding of data with standards, disciplinary knowledge and practices, curricular knowledge, pedagogical content knowledge, and an understanding of how children learn. (Mandinach and Gummer, 2016, n.p.)

Therefore, data use in K-12 contexts cannot not be understood in isolation; instead, this process of principled, systematic inquiry must understood as a process that engages the individual and collective knowledge and experiences of educators and educational administrators and is responsive to the local context (e.g., school climate, instructional resources, content standards, curriculum guidelines).

Data Use Models

Review of data use and data-informed decision making (DIDM) literature suggests that there is no single, all-encompassing model of data use that guides research in this field. Instead, there are several features that are common to most of the data use models presented in the literature. The first key feature of several of these models is their attention to the role of

institutional context (Mandinach et al., 2008; Marsh et al., 2006; Schildkamp & Poortman, 2015; Coburn & Turner, 2012). Next, the majority of these models assume an explicit purpose or goal that data will be leveraged to evaluate (Cramer, Little, & McHatton, 2014; Schildkamp & Poortman, 2015). Thus, these models make clear that the sensemaking processes is embedded must be conceptualized as being embedded in local and institutional realities. However, it is important to note that the nature of the data use purpose or problem framing is not necessarily a straight-forward process and often requires deliberation. For example, in their discussion of data-informed leadership, Copland, Knapp and Swinnerton (2008) suggest that data leaders should be "open to going beyond the initial boundaries of a given question or problem, and reframing the issues in ways to help the organization and its inhabitants to 'see' different possibilities" (p. 156).

In relation to the sensemaking processes depicted in these models, overall, this process can be characterized as the transformation of empirical pieces of data to information and then to knowledge via procedures that place boundaries of inclusion and exclusion upon this sensemaking process. Specifically, these models suggest that data becomes actualized when potential stimuli is noticed, attended to, selected, and collected by individuals and groups engaging in the data use process (Coburn & Turner, 2012; Mandinach et al., 2008; Marsh, 2012; Schildkamp & Poortman, 2015). Then, the data collected should be vetted to determine data quality and appropriateness in relation to the intended data uses and associated inferences that will need to be made (Schildkamp & Poortman, 2015). Once the quality and information features of the data are determined to be sufficient for the given data use purposes, segments of data are then interpreted and transformed into information via organization, summary and analysis procedures (Mandinach et al., 2008; Marsh, 2012; Schildkamp & Poortman, 2015). It is

important to note that the transformation of data into information is a social process that are carried out and negotiated by individuals and groups. As Brown and Duguid (2000) contend:

> The ends of information, after all, are human ends. The logic of information must ultimately be the logic of humanity. For all information's independence and extent, it is people, in their communities, organizations and institutions, who ultimately decide what it all means and why it matters. (p. 18)

Finally, is what Fullan (2020) refers to as 'knowledge building' or the process of making information valuable by situating it within a particular social context. At this stage of the process, information is transformed into knowledge when it is synthesized or combined with other data and/or the existing understandings and experiences of data users (Mandinach et al., 2008; Marsh, 2012; Schildkamp & Poortman, 2015). This process does not occur devoid of values. Specifically, Mandinach et al. (2008) note the need to prioritize knowledge in advance of applying this knowledge to make decisions and Marsh, Pane & Hamilton (2006) highlight the need for this knowledge to be actionable in light of contextual realities. In the language of evaluation, this transformation of data into knowledge implicitly requires considerations of boundary judgements, or "… what aspects of a situation are and ought to be part of the picture we create of what is being studied and evaluated as well as what other aspects are and ought to be left out" (Schwandt, 2018, p. 131). As such, individual and collective worldviews or 'social and personal constructs' (Kagan, Caton, Amin, & Choudry, 2004, p. 8 as cited in Schwandt, 2018) establish the limits of facts and values in individual and collective sensemaking processes. The knowledge that arises within this sensemaking process is akin to that described as evaluation knowledge by Alkin and Taut (2003), which is distinct from research knowledge in that it does not prioritize scientific rigor and generalizability but instead provides "…the opportunity to

ensure useful, context-specific, yet systematic data-based evaluation processes and findings that are tailored to stakeholder needs" (Alkin & Taut, 2003, p. 10).

Beyond the sensemaking process, all data use models also include decisions, responses and actions that are conceptualized as the application of new knowledge arising from this sensemaking process (Mandinach et al., 2008; Marsh, 2012; Marsh et al., 2006; Schildkamp & Poortman, 2015). Furthermore, the majority of these models do not stop at the point of data use or decision making. Instead, most include the assessment and/or evaluation of the outcomes and impacts of the decisions, responses or actions implemented (Mandinach et al., 2008; Marsh, 2012; Schildkamp & Poortman, 2015; Cramer et al, 2014). Finally, the cyclical in nature of these models and their inclusion of feedback loops (Mandinach et al., 2008; Marsh, 2012; Marsh et al., 2006; Schildkamp & Poortman, 2015; Cramer et al, 2014), which speaks to the expectation for continuous learning to occur through data use processes.

Factors Impacting Data Use Practices in K-12 Settings

The following sections outline some of the key factors that emerged in the literature related to data-informed decision making and data use in K-12 settings that influence how and in what ways educators engage with and use data in their work practices. As Young (2006) contends, "building a rational system of data driven instruction requires agenda setting that engages the non-rational aspects of the system: norms, values, and capacity situated in role definitions and hierarchy" (p. 545). Since data use practices are neither linear nor purely rational processes, understanding how contextual factors at various levels of the education system impact SIP team members' use of data is essential to understanding how evaluative thinking might fit into these practices. The following sections will explore the current state of the literature on the influence of contextual factors on educators' use of data in relation to the following categories:

(1) educational policy context, (2) institutional context (i.e., local educational agency or district contexts), (3) school culture and leadership, and (4) individual and group-level data valuing and capacity.

The Impact of Educational Policy

Although the quest to use data to inform educational decision making is not new, the explicit focus since the early 2000's on positioning education as a 'rigorous,' evidence-based field led to a fixation on systematic data-driven decision making that became a phenomenon in and of itself. With this shift in educational policy, the comparison and benchmarking of school performance based on standards-based assessments have become key mechanisms for driving educational improvement (Huber & Skedsmo, 2016). Therefore, when seeking to understand how data is used in today's schools it is critical to consider socio-political as well as organizational influences on how data and assessment are intended to be used in K-12 schools in the United States.

Data Use in Contemporary Accountability Policies

Contemporary discussions about data-driven or data-based decision making for school improvement are tightly intertwined with notions of educational accountability, and test-based or performance-based models of accountability in particular (Coburn & Turner, 2012). Current educational accountability policies in the U.S. provide a loose framework that simultaneously specify the need to measure and monitor student's academic performance outcomes while also affording flexibility in relation to how outcomes targets are set and measured and how data is used to render decisions intended to promote student achievement. Coburn and Turner (2012) argue that, in theory, accountability policies provide organizing principles or 'logics' of action, which outline particular goals and appropriate means of attaining the stated goals. In this way,

accountability policies and mandates at higher levels of systems set the stage for educational policies at more local (i.e., district and school) levels. Thus, despite variations in the logistics of how educational policies are manifest within the microcosms of schools, local institutional policies should be expected to align with the underlying logic of the higher-level accountability policies.

More specifically, contemporary educational policies, such as the *No Child Left Behind* (NCLB) Act of 2001 and the most recent reauthorization of the *Elementary and Secondary Education Act* (ESEA) (i.e., *the Every Student Succeeds Act (ESSA)* of 2015), have centered the demonstration of educational effectiveness via student outcomes in the form of academic achievement (via students' attainment of particular performance levels) and growth (via group level attainment of Adequate Yearly Progress, AYP, targets) in relation to particular content areas (i.e., reading, math and science). The focus of educational accountability policies since the early 2000s on outcomes, as opposed to inputs, grew out of a more widespread shift in federal governance toward accountability via performance-management (i.e., strategic planning for performance and routine progress monitoring) (Putansu, 2020) and a global movement toward evidence-based policy and practice (Huber & Skedsmo, 2016). Specifically, since the passage of NCLB, educational accountability has relied heavily on the results of standards-based tests to determine educational quality and flag underperforming schools for remediation efforts (Huber & Skedsmo, 2016).

Multiple studies suggest that how educators decided to implement the mandate to "use data" is influenced by the nature of the accountability pressures (Firestone and Gonzáles, 2007; Snodgrass Rangel, Bell, & Monroy, 2019). Specifically, research on data use in K-12 contexts has shown that schools in states that have a history of strong state accountability and testing

systems tend to engage in more extensive data use practices and that these activities are centered around the use of outcome data, and assessment results in particular, as a result of the historic emphasis on performance assessment data in educational accountability systems (Marsh, Pane, & Hamilton, 2006). Furthermore, research suggest that policy constraints that prioritize particular types of data and suggest particular 'data use logics' that then guide educators thinking as they make sense of data in practice (Seidel Horn, Delinger Kane, & Wilson, 2015). Therefore, not only do educational policies impact the extent to which educators engage in data use practices, but they also impact how educators engage in this process. For example, additional research conducted by Garner, Kahn Thorne & Seidel Horn (2016) suggests that pervasive emphasis on student assessment results in contemporary educational accountability politics can limit the ways in which educators engage with data by encouraging them to seek actions to remediate disparities in student learning without looking further into equity issues and the root causes of these patterns.

Important Shifts in Current U.S. Educational Accountability Policies

Although standards-based assessment remains a staple in current U.S. educational accountability policies and still support these purposes, the most recent reauthorization of the *Elementary and Secondary Education Act* (ESEA), the *Every Student Succeeds Act* (ESSA, 2015), slightly shifted the nature of the accountability mechanisms inherent in this policy by introducing key provisions that provide states with the flexibility to establish more balance between standardized academic outcomes and contextually sensitive indicators that are supportive of continuous improvement efforts. Specifically, ESSA requires that states utilize five indicators to classify the performance of schools, which includes: (1) academic achievement in reading and math, (2) another academic indicator (often growth), (3) four-year graduation rates

for high schools, (4) an indicator of progress toward English Language Proficiency (ELP), and (5) a measure of school quality or student success (e.g., school climate, student or teacher engagement, student access and performance in advanced coursework). In an analysis of the ESSA state plans submitted to the Department of Education, the Center for American Progress (Batel, 2017) found that the fifth indicator selected by states fell into the following categories: early warning signs, persistence indicators, college- and career-readiness indicators, and enrichment or environmental indicators. Although, by law, the fifth indicator cannot account for more than 20% of the performance metric, its inclusion nonetheless affords states the opportunity to expand the conception of school quality and student success and greater flexibility in how they chose to conceptualize school performance that signals a slight shift from traditional test-based accountability systems (Marion & Lyons, 2016). At a conceptual level, this change has slightly shifted the inherent logic that has underpinned federal accountability policies for decades – namely, that the monitoring and reporting of performance data and implementation of rewards and sanctions based upon performance outcomes (i.e., standardized assessments) is not sufficient to promote educational excellence and improvement.

Beyond these changes to the requirements for state accountability metrics, ESSA has also added a requirement for schools identified by the state as requiring comprehensive support and intervention or targeted support and intervention (hereafter referred to as CSI and TSI schools, respectively) to develop and implement evidence-based school improvement plans (SIPs) in collaboration with their local district (The Education Trust, n.d.). Although this legislation establishes federal requirements for the process of identifying these schools, it gives states and local educational agencies (LEAs) or districts some flexibility in terms of how they will go about supporting schools identified as needing improvement and/or their local districts (Dunn &

Ambroso, 2019). In the non-regulatory guidance document *Using Evidence to Strengthen Education Investments*, the U.S. Department of Education (U.S DOE, 2016a) highlighted the importance of engaging in a process of inquiry that integrates more general research knowledge in the form of evidence-based practices (EBPs), with more localized knowledge via needs assessments and context-sensitive discernment of the relevance of evidence-based practices (EBPs) and local capacity. Specifically, they state the following:

> Ways to strengthen the effectiveness of ESEA investments include identifying local needs, selecting evidence-based interventions that SEAs [state educational agencies], LEAs [local educational agencies], and schools have the capacity to implement, planning for and then supporting the intervention, and examining and reflecting upon how the intervention is working. These steps, when taken together, promote continuous improvement and can support better outcomes for students. (U.S. DOE, 2016a, p.3)

Taken together, these changes suggest that ESSA's revised accountability framework provides renewed focus on the need to balance monitoring and reporting with contextually sensitive data interpretation and uses within school improvement processes.

The Impact of Institutional Context

ESSA's focus on the supporting role of states and districts in the school improvement process has elevated the need to attend to how the systems, structures, values, and norms at these levels impact educators' ability to leverage data for school improvement planning at the local level. No longer is information about performance outcomes deemed sufficient to promote accountability and support educational reform initiatives; instead, more local inquiry into learning contexts, instructional processes and outcomes is warranted along with more careful and contextually engaged discernment of the courses of action taken in response. As a brief from the

Learning Policy Initiative notes in their discussion of what they call "next generation accountability systems," capacity building and locally relevant, actionable knowledge creation must be at the center of ongoing educational improvement efforts (Adams, Ford, Forsyth, Ware, Olsen, Lepine, Barnes, Khojasteh, & Mwavita, 2017). Districts and schools must, therefore, work to cultivate the capacity to identify and implement interventions that will better support the learning of *their particular students in their particular context*.

Review of the literature related to data use in K-12 contexts indicates that many of the predominant data use models in this field acknowledge the role of institutional context on the process of data-informed decision making (Mandinach et al., 2008; Marsh et al., 2006; Schildkamp & Poortman, 2015; Coburn & Turner, 2012). Furthermore, empirical research in this area suggests that institutional structures that promote data accessibility are critical in the ability for educators to engage in data-informed decision-making processes (Gerzon, 2015; Marsh, Pane, & Hamilton, 2006). Of particular concern in this regard is the technical capacity of informational systems and structures at the district level and the timeliness of data access (Marsh, Pane, & Hamilton, 2006). Related to this need for cohesion at a technical level, research suggests that a clear and cohesive vision for education and the decision-making process at the district level is essential (Petersen & Dlugosh, 2008). Specifically, districts need to establish a clear vision and structure for how using data in the service of learning (Firestone and Gonzáles, 2007; King & Amon, 2008; Lange, Range, & Welsh, 2012), lest they run the risk of reducing data use opportunities that have the potential to facilitate organizational learning to "grist for the accountability mill" (Firestone and Gonzáles, 2007, p. 153). Furthermore, a consistent and cohesive vision across educational system creates the opportunity for the creation of "interschool networks" (Datnow & Park, 2008) that share resources and tools to support organizational

capacity building and data use processes. However, cohesion and access to information is fruitless if educators and educational leaders are powerless to enact changes as a result of the information and knowledge gained. Thus, the guidelines established by local educational agencies or LEAs (i.e., districts) must afford some level of flexibility, e.g., in relation to curriculum pacing pressures and their perceived flexibility (Marsh, Pane, and Hamilton, 2006). Finally, district leadership (i.e., district superintendents and administrators) need to become advocates for schools and teachers that are not meeting performance targets by actively connecting them with state and local supports and resources (Peterson & Dlugosh, 2008).

It is also interesting to note that researchers studying data use in educational contexts have drawn upon the work of Carol Weiss from the field of evaluation to frame data use as an organizational process (Copland, Knapp and Swinnerton, 2008; Firestone & Gonzáles, 2007). Specifically, Weiss' (1995) assertion that interests, ideologies, and institutional context always influence data-informed decision making is foundational in Copland, Knapp and Swinnerton's (2008) discussion of data-informed educational leadership. Furthermore, Firestone & Gonzáles (2007) drew upon Weiss' (1998) discussion of evaluation use to frame data use as an organizational process that occurs through various internal mechanisms that focus on use to guide actions, facilitate enlightenment, and mobilize support as well as external mechanisms that focus on uses for external legitimation and triggering action. Framing data use as an organizational process highlights the importance of the institutional structures established at district and state levels to support educators' use of data for school improvement at a local level. Furthermore, it prompts critical consideration of the formal mechanisms or structures established to facilitate data use and messages communicated as institutions establish operational frameworks for institutionalized data use procedures.

The Impact of School Culture and Leadership Structures

Attending to the culture of schools and districts is another critical element in the study of data use in educational settings. Review of the literature on data use in K-12 contexts suggests that school organizational characteristics related to school culture have a significant impact on how data is used in schools. Notably, results from Schildkamp, Poortman, Luyten, & Ebbler's (2017) large-scale survey study of teachers suggested that the factor representing school organizational characteristics (i.e., school vision and norms, leadership, and support structures) in a hierarchical-linear model significantly influenced the extent to which educators engaged in data use for accountability, school improvement and instructional purposes.

Furthermore, research on the features of educational cultures that support or inhibit data use in schools suggests that the nature of accountability established at the school level has a significant impact on data use practices. Specifically, whether or not a school adopts a culture of accountability or a culture of organizational learning fundamentally impacted what educators in these contexts consider to be data and how it is used (Firestone and Gonzáles, 2007). Similarly, research shows that cultures of distributed or mutual accountability within schools promotes collaborative data use (Young, 2006). Furthermore, norms of support, openness and collaboration (Jacobs, Gregory, Hoppey & Yendol-Hoppey, 2012; Marsh, Pane, and Hamilton, 2006) are deemed essential for effective data use. As Copland, Knapp, & Swinnerton (2008) argue, ultimately a culture that establishes "processes or cycles of inquiry as the foundation for data-informed decision making in schools and school districts" (p. 154).

Role of Leadership

Leadership structures at schools and districts have been shown to have a profound impact on how data is used in K-12 educational settings. Review of the literature suggests educational

leaders must play an active role in prioritizing data use for school improvement (Marsh, Pane, and Hamilton, 2006) and should endeavor to establish protected time that allows educators to "explore how to move from data to evidence that will inform instruction" (Gerzon, 2015, p. 6). Educational leaders need to demonstrate a commitment to authentic data use by allocate time and resources for teachers to engage with data in meaningful and collaborative ways (Lange, Range, & Welsh, 2012).

In relation to the roles of educational leaders within school improvement teams, current research on the features of productive data cultures also suggest that establishing collaborative norms and structures requires educational leader to cultivate communities of shared practice that have a clear and cohesive vision of data use in schools (Marsh, Pane, and Hamilton, 2006) and expectations for data use (Gerzon, 2015). To this end, school and district leaders must develop a sound and cohesive vision of educational quality (Peterson & Dlugosh, 2008) that can set the foundation for agenda-setting in the system (Young, 2006) and 'problem framing' in data use situations (Copland, Knapp, & Swinnerton, 2008; Seidel Horn, Delinger Kane, & Wilson, 2015). Furthermore, during the data use process, it is important for educational leaders to assist in the assessment of data quality and evidence and intentionally invite alternative or divergent perspectives and explanations into the sensemaking processes (Copland, Knapp, & Swinnerton, 2008). Overall, local leaders of the SIP processes should endeavor to establish a culture of data use throughout their schools and in collaboration with other school sites and district support. Specifically, leaders should treat data as a central feature in collective problem solving to support improved learning outcomes, facilitate effective data use practices and discussions, support staff capacity to use data in practice, as well as acknowledge and incentivize instances of data use (Gerzon, 2015).

At an intrapersonal level, school data leaders should foster trust among educators who are working collaboratively with data. Specifically, the goal should be to cultivate data teams where members can trust that: they share similar high standards for students for student achievement with their peers, other educators will respect them and their expertise, their engagement in the process of interpreting and making decisions with data will be reciprocated with the same level of commitment from other members, that issues illuminated in the process will be viewed as collective problems, requiring collective solutions (Young, 2006). Furthermore, school leadership needs to demonstrate their trust in the educators they work with by modeling collaborative data-driven decision making and empowering their teachers and staff to play an active role in decision making at the school level (Lange, Range, & Welsh, 2012). Furthermore, school leadership play essential roles in communicating the knowledge and implications for actions that emerge as a result of the data use processes to various stakeholder groups while also attending to the political realities, values and reporting requirements and facilitating reflection, feedback, and further inquiry to promote individual and collective learning in these contexts (Copland, Knapp and Swinnerton, 2008).

The Impact of Individual and Collective Capacity to Use Data

The role of individual and collective capacity to use data and inform school improvement effort cannot be understated. Multiple studies in this area of research suggest that individual and collective data use knowledge and skills are critical prerequisites for engaging in sustained and effective data use practices as a part of school improvement planning (Datnow & Hubbard, 2016; Seidel Horn, Kane & Wilson, 2015; Marsh, 2012; Marsh, Pane, & Hamilton, 2006). As Bettesworth, Alonzo, & Duesbery (2009) put it: “lack of formal training on how to evaluate

programs and student data and how to apply assessment information or the new data-mining tools to the school improvement process is a serious challenge" (p. 288-289).

Knowledge of data encompasses foundational assessment knowledge as well as knowledge about the technical aspects of locally-relevant data sources (e.g., data quality, inclusion/exclusion criteria, sampling, level of aggregation, missingness); whereas, data literacy would entail the ability to collect new forms of data, conduct analyses and synthesize data, and then draw inferences to make sense of data in-context to inform actions or decisions (Marsh, 2012). Research has shown that workshops and ongoing professional development related to basic statistics and measurement concepts are instrumental for data usage (Bettesworth, Alonzo, & Duesbery, 2009). Furthermore, studies conducted on the hiring considerations of district superintendents suggests that accountability pressures to use data for instructional decision making have increased the importance of applicants' knowledge of how to assess student learning and use data (Mandinach & Gummer, 2016; Peterson & Dlugosh, 2008). Although this is a step in the right direction, assessments are only one source of the multiple sources of data that educators attend to in practice (Jacobs, Gregory, Hoppey & Yendol-Hoppey, 2012) and assessment literacy is, therefore, just a component the construct of data literacy that educators must develop.

In relation to the nature of the data capacity building that should occur, it is important that these professional learning opportunities focus on assessment literacy as well as skills related to data analysis and synthesis (Marsh, 2012). Furthermore, these capacity building activities should occur across all levels of the educational system and be differentiated according to the knowledge and skills required for particular individuals and groups as they engage in the DIDM process (Gerzon, 2015). For example, in their discussion of data-informed leadership,

Copland, Knapp and Swinnerton (2008) suggest that leaders in particular need "the capacity to extract and share useful meaning from organizational experience" (p. 156) in order to make the knowledge from data use processes actionable. However, classroom teachers must on their own experiences and/or knowledge of professional knowledge (e.g., curricular content, standards, instructional strategies) to move from data insights to actions (Jacobs, Gregory, Hoppey & Yendol-Hoppey, 2012). Finally, is important that these data capacity building activities simultaneously support and nurture educators' senses of sense of self-efficacy and agency (Bettesworth, Alonzo, & Duesbery, 2009) and empower them to become researchers of their own practice (King & Amon, 2008). It is only in the presence of individual and collective knowledge, capacity, and motivation that systematic inquiry and data use for school improvement planning can become sustainable and support continuous learning.

Data Valuing

As previously alluded to, another important piece of the data use puzzle is stakeholders' interest in or motivation to use data to inform their practice and promote school improvement, or what could be conceptualized as evidence of data valuing. Cousins, Goh, & Clark's (2006) described data valuing as "…deeper appreciation for the power and utility of evaluative inquiry through concrete examples of how data and locally created knowledge can feed into a decision mix" (p. 172). Furthermore, they found that "data use leads to data valuing" (p. 174) and that leaders (i.e., principals) were instrumental in modeling and facilitating this process among their school staff.

Data valuing has also been indirectly discussed in this body of literature as educators' preexisting motivation or interest to engage in data use practices. Specifically, Herman (2016) argues that "there must be capacity and *commitment* to well use assessment at all levels" (p. 10,

emphasis added) to facilitate use in K-12 contexts and this notion can easily be extended to all types of data that are leveraged to support school improvement planning activities. Furthermore, in Copland, Knapp and Swinnerton's (2008) discussion of data-informed leadership, they note that data use practices must engage "leaders' values, expertise, theories of action, and availability of data" (p. 158). Similarly, multiple studies suggest that how educators decide to implement mandates or expectations to "use data" is highly dependent on their "intrinsic desire to evaluate and improve one's practice and performance" (Marsh, Pane, & Hamilton, 2006, p. 9) as well as their beliefs about assessment and data use practices (Firestone and Gonzáles, 2007; Snodgrass Rangel, Bell, & Monroy, 2019). For example, in the study done by Marsh, Pane, & Hamilton (2006), educators' *perceptions* of data quality greatly impacted their willingness to utilize the data and any resulting information or knowledge to inform decision making. Specifically, the 'objective' or technical quality of the data was not sufficient to facilitate use, instead the perception of the value attributed to the data by potential data users was deemed more critical.

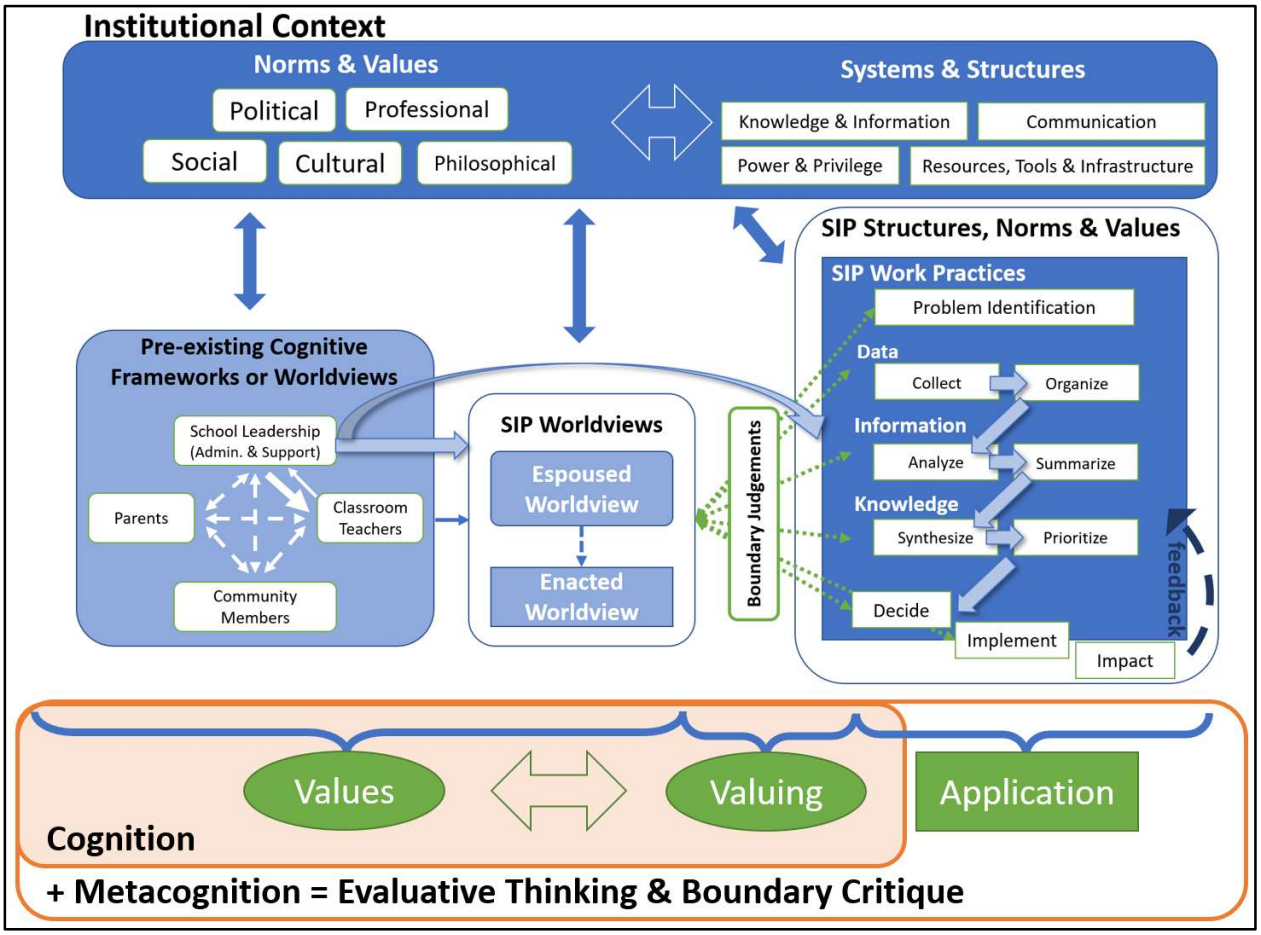
Attention to data user and leaders beliefs, attitudes, and values (Firestone and Gonzáles, 2007; Marsh, Pane, & Hamilton, 2006; Snodgrass Rangel, Bell, & Monroy, 2019), as well as the role of leaders in modeling facilitating data valuing among other educators (Copland, Knapp and Swinnerton, 2008; Cousins et al., 2006), suggests that data valuing in the context of school improvement is something that is collectively constructed and dependent on both individual and collective experiences, attitudes, norms, and values. As such, individual and collective vetting of data in relation to its quality and relevance for a given purpose is an essential part of the data use process. Furthermore, as previously noted in the discussion of data use modes, this vetting process can be conceptualized as the implicit engagement of educators in boundary critique as they draw upon their beliefs about the nature of the data and the extent to which it can support

the inferences they would like to make in their given context. As the theoretical framework presented below will make clear, this study assumes that more careful attention to and consideration of individual and collective beliefs, values, and attitudes about data sources and their appropriate or legitimate use in a given context is one way in which evaluative thinking occurs in the context of data use for school improvement planning.

Theoretical Framework

The theoretical framework for this study (Figure 1) acknowledges the relationships between context, individual and collective cognitive frameworks or worldviews, and the work practices of school improvement teams and suggests how these dynamics can be viewed through the lens of evaluative thinking.

Figure 1. Theoretical Framework for the Relationship Between SIP Activities and Evaluative Thinking



This framework is based on the conception of data use as a dynamic, context-dependent, and situated practice. As such, it will be characterized as what Spillane & Miele (2007) term "work practice," or the patterns that emerge from the interactions between individuals and their environment over time. Within this conceptual framework, the work practices occurring within SIP teams will be based primarily on Mandinach, Honey, Light, & Brunner's (2008) conceptual framework for Data-Driven Decision Making. Their depiction highlights the skills engaged while leveraging data to inform school improvement decisions (i.e., the collection and organization of information, the derivation of information via analysis and summarizing, the generation of local

knowledge through the synthesis and prioritization of information, deciding on and implementing actions, and determining impacts). Despite the linear depiction of the SIP work practices presented in the conceptual framework above, "sense-making is not a straightforward or exclusively rational process" (Schildkamp, 2019, p. 264). Therefore, these processes should be understood as dynamic, iterative, socially situated practices that are enacted and negotiated between SIP team members. As such, the reciprocal interaction that occurs between and among SIP members and the context these interactions are embedded within are paramount in understand how data use and systematic inquiry unfold in these contexts.

The cognitive frameworks or worldviews held by SIP members as well as those that are espoused and enacted by the SIP team play a central role in the conceptual framework guiding this injury. The critical role of cognition and cognitive frameworks in sensemaking processes is ubiquitous in data-based decision making and data use literature (Allal, 2012; Coburn, 2001, 2005; Cramer et al., 2014; Diamond & Cooper, 1997; Garner, Thorne, & Seidel Horn, 2016; Seidel Horn, Kane, & Wilson, 2015; Snodgrass Rangel, Bell, & Monroy, 2019; Spillane, 2012). According to sensemaking theorists such as Coburn (2005), pre-existing cognitive frameworks or what has been referred to as worldviews (Porac, Thomas, & Baden-Fuller,1989 as cited in Coburn, 2005; Weick, 1995), 'epistemic stances,' (Seidel Horn et al, 2015) or 'working knowledge' (Kennedy, 1982 as cited in Coburn, 2005) form reference points and or lenses through which individuals or groups attend to or select information, make sense of it in context and react. Furthermore, pre-existing cognitive frameworks are informed by and influence organizational routines (Feldman & Pentland, 2003) and activity structures or "patterned ways tasks get carried out in group interaction" (Seidel Horn et al, 2015, p. 214) that contribute to sensemaking in SIP teams.

Another key feature of this conceptual framework is the reciprocal nature between worldviews and context – i.e., culture, social, political, and institutional structures and routines. Pre-existing systems and structures within the institutional context influence SIP team's worldviews and work practices. For example, in relation to systems of power and privilege, Coburn (2005) found that principals played a significant role in teachers' sensemaking of a reading policy by moderating their access to policy ideas, participation in the social processes of interpretation and adaptation, and establishing the conditions for teacher learning. Similarly, research on effective data use data use highlights the importance of school and district leadership setting a clear and cohesive agenda for data use in the system (Young, 2006) and establish productive 'problem frames' in data use situations (Seidel Horn, Delinger Kane, & Wilson, 2015). In the conceptual framework guiding this study, the strong influence of the worldviews held by educational leadership on the collective worldviews of SIP teams and the SIP norms, systems and structures is depicted by the thick light blue arrows leading from the interaction between educational leaders' and teachers' worldviews and the SIP worldviews and work practices. Less power and influence in these interactions is depicted by dashed arrows in the conceptual framework such that non-educators (parents and community members) have influence but it is limited in comparison to that of teachers and educational administrators who are on the SIP teams. Likewise, pre-existing resources, tools and infrastructures within the institutional context are expected to heavily influence SIP work practices. As Mandinach & Schildkamp (2020) note in their review of the data-based decision making literature, the embeddedness of data use practices within complex systems leads to multidimensional interactions that can be characterized as (data X information X needs X values) interactions as well as (Person x Data x Tool x Context) interactions. The former set of interactions speaks how

institutional norms and values impact data use processes; whereas, the latter set of interactions highlights the fact that data use is a "sociotechnical process" (Piety, 2011) where SIP members' sensemaking process is intertwined with the data tools and infrastructures that exist within the organization.

Furthermore, because individual and collective worldviews have a reciprocal relationship with the norms and values at play in a given context as well as the associated systems and structures in place, to engage in principled and informed data use necessitates attention to context and the value dimensions surrounding school improvement team practices. In a conceptual piece reviewing the logic of school reform strategies over time, evaluator Carol Weiss (1995) highlights the role of institutional context on educators' responses to share decision-making initiatives. Specifically, she argued that "the four 'I's of school reform" (i.e., individuals' interests, ideologies, and information, as well as institutional norms and culture), or what will be termed the 'non-rational' factors that inform data-driven decision making, have profound impacts on the feasibility of reforms aiming to increase teachers' decision-making power; as Weiss (1995) contents: "In order to overcome the 'drag' of the institution, reformers may need to develop ways to increase the stake that teachers realize they have in reform, to attach the reform to enduring values that motivate them, and to provide information and ideas that increase the salience of the new policy and give direction for making it work in the school setting" (p. 588). The importance of institutional context has also been widely discussed in data use literature and has been incorporated in various models of data use (Coburn & Turner, 2012; Ebbeler, Poortman, Schildkamp, & Pieters, 2017; Mandinach, Honey, Light, & Brunner, 2008). Drawing upon these models, the conceptual framework for this study will highlights the role of institutional context in SIP structures, norms, and values. Specifically, the norms and values of

schools' and districts' and the associated systems and structures in place at these levels of the educational organization will be considered particularly relevant for this inquiry. Furthermore, drawing upon the work of Ebbeler et al. (2017), the *perceived* impacts of institutional factors by those engaged in data use processes will be considered particularly relevant since cognitive frameworks or the worldviews held by those engaged in SIP teams are assumed to be foundational to data use practices.

Finally, the conceptual framework for this study assumes that boundary judgements are embedded within SIP work practices. These boundary judgements are social constructions that arise as members of the SIP team make implicit and explicit decisions based on their pre-existing cognitive frameworks about what can be assumed, what should be included or excluded from consideration, and what has value throughout the data use process. As Schwandt (2015) notes:

> Every evaluative inquiry is 'bounded' in the sense that particular facts and values bearing on determining the value of the intervention under consideration are either included or excluded from analysis. Certain criteria of performance, for example, are considered more or less relevant, and certain kinds of evidence of performance are considered more or less important. These boundaries or choices are not naturally given (e.g. as features of the context) but social (and personal) constructions that define what is to be taken as germane to the analysis of value. (p. 463)

Due to the profound influence of institutional norms and values on data use practices, this conceptual framework will assume that the systematic inquiry undertaken by SIP teams is value-engaged and is, therefore, evaluative in nature.

Finally, drawing upon the work of Vo, Schreiber & Martin (2018), evaluative thinking will be depicted as (the interplay between values, valuing, cognition and application. However,

as the bottom portion of the framework shows, for the purposes of this study, the values-engaged cognitive processes underlying the construction of pre-existing worldviews and valuing process are treated as distinct from metacognitive processes that are engaged to critique these cognitive procedures and their applications. Furthermore, since evaluation is an inherently relation endeavor that navigated via social relations and avenues of trust (Symonette, 2004), evaluative thinking will be conceptualized as both a collaborative as well as individual processes (Schwandt, 2018).

Summary

Although there is an emerging body of research on how data-driven decision making unfolds in K-12 contexts and the factors that affect this process (Kowalski & Lasley, 2009; Marsh, Sloan McCombs & Martorell, 2010; Schildkamp, Lai, & Earl, 2013; Spillane, 2012), relatively little attention has been paid to the role values play in data use practices (Brighouse, Ladd, Loeb, & Swift, 2018) or the extent to which educators (i.e., classroom teachers, school support staff and administrators) engage in evaluative activities while undertaking SIP efforts. Nonetheless, the context-dependent and contested nature of education in and of itself requires educational stakeholders to constantly grapple with questions that are values-engaged and require judgements about what matters in education during the data use processes they undertake - from the identification of issues and establishment of goals and targets to the selection of indicators and means of monitoring progress. Therefore, when educators engage in systematic inquiry to make decisions that improve their practices and the quality of education they are providing to their students, they are assuming an evaluative role.

CHAPTER III: METHODOLOGY

This study sought to extend the "teacher as evaluator" conception put forth by McFadden and Williams (2020) and explored the relationship between data-informed decision making (DIDM), evaluative activities, and evaluative thinking (Vo & Archibald, 2018, Eds.) in the context of school-level School Improvement Planning (SIP) activities. More specifically, the focus was on: (1) understanding how school improvement planning (SIP) processes are imbedded in and inform the work of teachers and educational administrators within schools, (2) exploring stakeholder engagement in evaluative thinking as a part of the SIP process, and (3) considering the ways in which school leadership build evaluation capacity and facilitate engagement in evaluative thinking as a part of this process. As my review of the literature noted, SIP activities are embedded within an educational system that views them as both a mechanism of accountability for underperforming schools and as an opportunity to more directly attend to local priorities and information needs to support school improvement. As such, research in this area must pay particular attention to the interplay between the institutional systems and structures that frame the work of SIP teams and individual. Such research should also attend to the collective interests, ideologies, and epistemological stances that shape this process.

This study involved a multiple case study (Creswell, 1998; Stake 2006) of two School Improvement Planning (SIP) teams. Within-cases analyses for each site and subsequent cross-case analysis allowed for the exploration of the key questions guiding this study within two contexts. Although both sites resided within a single school district, each site had its own distinct manifestation of institutional systems, structures, norms, and expectations. By design, this inquiry endeavored to illuminate the nuances of how SIP teams within particular institutional and political contexts engaged in SIP activities as a part of their professional roles as well as the role

evaluative thinking played in these processes. Employing a multiple-case design allowed for the understanding of this process via its manifestation within SIP teams that are embedded in politically important institutional contexts (i.e., schools identified as requiring comprehensive or targeted support and intervention).

Theoretical and Epistemological Assumptions

A review of the literature related to data use in K-12 contexts makes clear that sensemaking theories (Coburn, 2001; Spillane, 2012) serve as a foundation for data use theories and practices in this context. At the heart of sensemaking theories is the role of attention, selection, interpretation, and inference by individuals and groups as they seek to make sense of data *in situ* and render data-informed decisions to support educational improvement. Therefore, at a foundational level, this study assumed a primarily interpretive lens, focusing on how individual actors within SIP processes interpret and construct meaning as they carry out SIP-related activities (Merriam, 2009). Tenants of the constructivist paradigm underpinned the framing of this study via the deliberate focus on understanding the multiple meanings of phenomena through the vantage point of SIP participants and their subjective lenses.

Furthermore, the present study assumed an overarching critical stance toward understanding how SIP process are embedded in and inform the work of teachers and educational administrators within schools and how evaluative thinking is manifest in this process. Specifically, knowledge was conceptualized as "a social phenomenon itself, having substantive – constitutive relations to personal identities, social practices, institutions, and power structures" (Carspecken, 2008). As such, the explicit focus of this research on how society and culture or the "the beliefs, values, and attitudes that structure the behavior pattern of a particular group of people" (Merriam, 2009, p. 27) influence actions and conceptions within schools made

the assumption of a critical stance appropriate. Furthermore, because the review of the literature highlighted the role of sociocultural and institutional context, as well as collaboration and negotiation among individuals and groups throughout the data use process, this research inquiry drew upon this critical stance and specifically assumed a social *constructionist*, as opposed to a constructivist, paradigm. Social constructionism aligns with constructivism in that it assumes that individuals construct their realities; however, it endeavors to account for the role culture takes in shaping these conceptions or constructions (Crotty, 1998). In references to this distinction, Schwandt (1994) states:

> Contrary to the emphasis in radical control constructivism, the focus here is not on the meaning making activity of the individual mind but on the collective generation of meaning as shaped by the conventions of language and other social processes. (p. 127)

Although only a slight shift from constructivism, approaching this study through a social constructionist lens was better aligned with this study's framing of SIP work practices as situated and socially constructed/negotiated activities.

Researcher Positionality

Within the context of case study research, the impact of the researcher's prior experiences and knowledge, values and worldviews cannot be ignored. From how the researcher frames the inquiry and designs the study to the role they assume as they collect data and report results, the positionality of the researcher profoundly influences case study research. Stake (1995) contends that within the context of case studies, the researcher must acknowledge the inability for case descriptions and findings to be separated from the researcher. According to Stake, "[t]he researcher is the agent of new interpretation, new knowledge, but also new illusion" (p.99). With

the importance of researcher positionality in mind, it is important for the researcher to reflect on their own experiences and entry into the inquiry at hand.

In relation to my own positionality, my personal identity, educational background, and applied professional experiences have shaped how I have approached this inquiry. Firstly, I undertook this study from the vantage point of a young, cis-gendered, white woman. In relation to my educational background, I am a first-generation college graduate with a Bachelor of Arts in Psychology and a Master of Science in Educational Research Methodology. My love of math and statistics and my desire to work in education steered me to the field of educational evaluation, measurement, and assessment. My pursuit of graduate coursework that spans these disciplines has led me to believe that evaluation should serve as an umbrella for these fields. As such, I approached this inquiry with the belief that evaluation should be used to frame and vet the assumptions underlying the use of measurement data, assessment results, and other indicators to determine quality and inform the decision-making process.

In relation to my professional experiences, I have had a variety of graduate assistantship and internship positions that ranged from program evaluation to psychometrics to higher education assessment. However, for the last few years I have worked as an intern within the accountability, research, and evaluation department at a large public school district. This position has provided me with insight into the nature of data and assessment use for accountability and evaluation purposes at the district level. However, this experience has also highlighted the apparent disconnect between much of the reporting done at the district level and how data is used within schools. Prior to this study, I had very limited understanding about how school improvement processes unfolded within schools, what key priorities were driving school improvement efforts, what local data systems existed at the school level to assist them with data-

informed decision making, and how specific school-based teams functioned to support the regular operations of the school and school improvement efforts more specifically. Therefore, this inquiry was situated from the perspective of someone who has formal schooling in educational evaluation, measurement, and assessment and has some experience working with school data at the district level but has not spent much time in schools. As a result, I approached this inquiry seeking to better understand the complex and dynamic contexts that are our schools.

Research Design

Multiple case study methodology was utilized to construct diverse, rich, contextually-sensitive descriptions of the institutional and sociocultural contexts of schools as they relate to the work of local SIP teams and to discover how SIP team members individually and collectively engage in evaluative thinking as they engage in this process. As such, the school improvement planning process was the focus of the study, or what Stake (2006) refers to as the "quintain" (pronounced kwin'ton), and the cases are of instrumental interest because they are manifestations of this processes that provide further insight as a result of the commonalities and the particularities of the cases.

Bounding the Case

For the purposes of this study, the case was bound in several ways. First, cases in this study were selected to be both politically important and typical (Miles & Huberman, 1994). More specifically, the sites for this study included schools that were identified as needing targeted support and improvement (TSI schools), which is a relatively common categorization of schools within current accountability contexts. For example, during the 2018-19 academic year (AY) around 60% of schools in North Carolina and district where this study was conducted were categorized as TSI schools. What made these politically important was the added ESSA

requirement for CSI and TSI schools to develop and implement evidence-based school improvement plans (SIPs) in collaboration with their local district (Education Trust, n.d.). Next, cases were bound within a single state and school district. Bounding the case in this way not only assisted with feasibility and access, but also allowed for attention to and description of the overarching institutional context at the state- and district-level that these cases were embedded within. Additionally, both cases were from elementary schools that served Pre-Kindergarten through fifth grade students. This decision was based upon prior conversations with district-level staff, who suggested that the generally smaller number of school staff at this level would assist with buy-in and provide a more complete understanding of SIP activities in these contexts. Finally, the case was bound by the structures and activities relating to school improvement planning within the schools. However, since as Stake (2006) points out "[a] case is a noun, a thing, an entity; it is seldom a verb, a participle, a functioning" (p.1), the decision was made to make formal school improvement planning teams (i.e., school-based leadership teams or SBLTs) and their work on their school improvement plans (SIPs) the unit of analysis. However, in an effort to provide as complete a description of each case as possible, flexibility was afforded in relation to the case boundaries. Specifically, as the studies unfolded at both sites, the decision was made to slightly expand the boundaries of the cases to include structures and activities that were not formally a part of the SIP teams but were deemed to be important parts of this process according school staff, who acted as key informants through this process. Specifically, this led to the inclusion of other school-based teams (i.e., Instructional Leadership Teams and professional communities of practice) in the boundaries of the cases.

Case Selection and Sampling

The selection of the case study sites occurred via a combination of convenience and stratified purposeful sampling. First, the district was selected according to convenience. As previously noted, I worked as an intern in a school district for several years and decided to apply to conduct this study within this district so that I could leverage my understanding of the district context when interpreting the school-level results. Once the district was selected, accountability results from the 2018-19 AY were used to identify TSI schools. Specifically, TSI-AT status was used in this identification process. As noted in NCDPI's TSI and CSI workbook, the 2018-19 TSI-AT schools were those schools that had at least one student subgroup that received a group letter grade score at or below the highest performing Comprehensive Support and Improvement Low Performing (CSI-LP) school's School Performance Grade score, based on the 2017-18 data (NCDPI, 2019a). In total, approximately 60% of the elementary schools in the district (i.e., grades K-5 or PK-5) were identified as TSI-AT schools. Then, in an effort to identify schools within this group that were not too different from each other, only Title I schools with relatively average enrollment during the prior academic year, in comparison to other elementary schools in the district, were included in the sampling frame. In total, 21 schools were identified on this initial list of schools and their enrollment roughly ranged from just under 400 students to just over 500 students.

Site Recruitment and Opportunistic Case Selection

Administrators and key support personnel (i.e., the principal, assistant principal, curriculum facilitators, data managers) and the chair of the school leaderships listed on these schools' websites were contacted via email in late October 2021 to invite them to participate in the study. This email included an overview of the study purpose, what participation would

entail, and an invitation to set-up a 15-minute introductory meeting if they were interested. My university account was used for recruitment instead of my district account to prevent school staff from feeling undue pressure to participate in the study. A second reminder email was sent roughly a week later. Only one school expressed interest in participating and wanted to schedule an informational meeting from this initial email.

As a result of this initially low response rate, I reached out to some of my district colleagues to seek their assistance with recruitment. One of these individuals worked in an assessment-related position at the district but was previously an elementary school principal in the district. After sharing my list of schools with them, they offered to reach out to the principals they knew at those schools via email to encourage participation. In total, they reached out to five principals on my behalf. Two of the principals expressed interest and one was selected for this study (i.e., Case 1). Around that same time, another colleague mentioned knowing the principal at a school that was initially excluded from the sampling frame because it had about 20 fewer students than the initial enrollment minimum. However, due to the low response rate, I asked this colleague to reach out on my behalf; this school became another one of the schools included in this study (i.e., Case 2). This shift in recruitment strategy made the case selection more opportunistic in nature (Miles & Huberman, 1994).

In all, a total of four schools expressed interest in participating. Informational meetings were subsequently held with school contacts at these sites to further discuss the study. In the end, a total of two schools were included in the study. At the other two sites there was insufficient buy-in to collect enough data to gain a thorough understanding of the cases and warrant their inclusion. It is also important to note the self-selection dynamic that existed within this recruitment strategy and that the participating schools did not receive any compensation for their

participation beyond general feedback about SIP processes across the district resulting from the study. Furthermore, some administrators at schools that were targeted for recruitment expressed that they did not want to participate because they felt their SIP processes were not sufficiently established. As such, it is likely that the sites that agreed to participate and ultimately provided sufficient access to be included in the study have more well-developed SIP procedures, structures, data use practices, and data tools and infrastructure than other schools that were not interested in participating.

Data Collection

In an effort to construct as holistic and accurate a description of the two cases as possible, a variety of data collection methods were used throughout the course of this study. More specifically, this inquiry relied on data collected via the review of SIP-related documents and artifacts, observations of SIP team and associated team meetings, and virtual interviews with members of the SIP teams. The following subsections will provide additional details about these data sources.

Document Review

The documents reviewed during the course of this study included artifacts that provided additional information into the school's background and context, NCStar school improvement planning documents, and additional site-specific documents and artifacts that were determined to be relevant to the school improvement planning processes as they unfolded at these two sites.

Background Information

Information from the school's homepage, "About Us" page, staff introductions, as well as school leadership team information and by-laws were reviewed. These provided information about the school mission, vision, leadership team and overall school climate. Prior school

accountability results for the last four years that were in publicly available data sets on NCDPI's website (i.e., school performance grades, lists of low performing schools, and lists of CSI and TSI schools) were also reviewed as a part of this process (NCDPI, 2019a; NCDPI, 2021a; NCDPI, 2021b).

Official SIP Documentation

Public information on schools' current school improvement plans and processes were one of the main sources of data collected selection. Specifically, this included the review of schools' the NCStar digital platform, which is the state specific Indistar® platform developed and hosted by the Academic Development Center. As NCDPI states on their website (NCDPI, 2022c):

> NCStar is a web-based tool that guides a district or school team in charting its improvement and managing the continuous improvement process. NCStar builds accountability as well as helps schools track their improvement plans. NCStar is premised on the firm belief that district and school improvement is best accomplished when directed by the people, working in teams, closest to the students. (n.p.)

Within the NCStar platform, the Comprehensive Progress Report and Meeting Minutes available were reviewed to identify key school improvement priorities, examples of data use instances, decisions or actions that were made in consultation with data, and/or capacity building activities that might have occurred in these contexts.

Additional Documentation & Artifacts

Publicly available guidance documents from the state and district website related to school improvement planning were reviewed as a part of this study. Furthermore, following my district-level request to conduct this study, district staff shared artifacts (e.g., PowerPoint presentations, guidance documents) that were used within the district to do Multi-tiered Systems

of Support (MTSS) and school improvement planning (SIP) training. Furthermore, site-specific documentation that related to school improvement planning efforts and activities were requested and reviewed throughout the course of this case study. These documents included staff data portals and documents related to self- assessments related to school improvement planning. This additional documentation was more readily available at Case 2 than it was at Case 1. However, in an effort to not put an additional burden on staff at these sites, the decision was made not be too persistent in requesting copies of these supplemental materials and documents for review. Table 1 summarizes the documents reviewed at each site.

Table 1. Summary of Documents and Artifacts Reviewed Across Case Study Sites

Context	Description of documents and artifacts reviewed
Case 1	*Background information from the district website:* school history, school leadership team membership & by-laws, principal and assistant principal backgrounds, welcome video, Title I communications for families, behavioral expectations, data in district dashboards
	NCStar system: "Our Direction" page (i.e., vision, values, mission, overview of key indicators), comprehensive progress report (47-page document outlining SIP activities for the last five years – i.e., from the 2017-18 AY to the 2021-22AY), 11 meeting minute documents between September 2021 and May 2022
	Additional documents: meeting agenda for SIP meeting observed and PowerPoint slides from one of the PLC meetings observed
Case 2	*Background information from the district website:* school history, school leadership team membership & by-laws, principal background, Title I communications for families, data in district dashboards
	NCStar system: "Our Direction" page (i.e., vision, values, mission, overview of key indicators), comprehensive progress report (19-page document outlining SIP activities for the last six years – i.e., from the 2016-17 AY to the 2021-22AY), 20 meeting minute documents between September 2021 and May 2022

Case 2 (cont.)	*Additional documents:* Data Console (i.e., attendance, teacher characteristics, student characteristics, re-rostering page, teacher working conditions), PowerApp for Check-In, Check-Out (CICO) behavioral support initiative, copies of the comprehensive needs and FAM-S assessments
District & State	*Background information from websites:* Publicly available school report cards and state accountability designations for schools for the 2018-19 AY; school improvement planning and MTSS documentation provided on the district and state websites; District Strategic Plan
	Additional documents: MTSS training materials provided by district staff

Interviews

At both sites, interviews were conducted with school administrators, classroom teachers from tested grades (i.e., grades 3-5) and untested grades (grades K-2), as well as key support staff (e.g., curriculum facilitators, MTSS or multi-classroom leaders (MCLs), special education teachers) that participated in the school improvement planning efforts. The principals at both schools helped select a variety of team members who were on the school improvement planning teams and associated leadership teams that represented a variety of perspectives and backgrounds. During this consultation, I also requested principals recommend a collection of teachers with what they perceived to be varying levels of engagement, experience, and data literacy or use capacity. In total, seven individuals were contacted for interviews at each site. All seven were able to participate at Case 2 but only five did so at Case 1. Specifically, at Case 1, one individual did not want to participate because they felt they were too new on the team and another individual was not able to be interviewed due to scheduling challenges. Table 2 shows an overview of the staff recruited and interviewed at each site.

Table 2. Summary of Interviews Across Case Study Sites

Context	Description of interview participants
Case 1	The principal
(N=5)	Two classroom teachers: 3rd & 4th grades
	Two school support staff: one special education teacher, and one teacher assistant who was also family of current students
Case 2	The principal
(N=7)	Four classroom teachers: kindergarten, 1st, 3rd, & 5th grades
	Two school support staff: curriculum facilitator and grades K-2 MTSS lead, and the grades 3-5 MTSS lead

All interviews were conducted via a password-protected virtual meeting and recorded for later transcription and analysis. The interviews with administrators lasted approximately 40 to 60 minutes, whereas the interviews with staff lasted about 30 minutes on average. In relation to content, these interviews asked participants about their professional backgrounds and asked them to reflect on and share their experiences engaging in school improvement planning activities. More specifically, they were asked about the nature of their involvement in school improvement planning efforts, their understanding of the main goals and priorities of the school improvement planning team at their school, the nature of the data or information they draw upon while making decisions on their team, how they determine the relevance of specific data or information in these teams, and the perceived impacts of the school improvement planning process at their school. Questions were the same for school administrators and other staff, with the exception of one question. For administrators, this question asked about the structure and function of the SIP team and for other school staff it asked how they got involved in SIP activities. A copy of the protocol can be found in Appendix A.

Observations

Although site visits and in-person observations were not feasible due to the pandemic, virtual observations of team meetings allowed for relatively unobtrusive non-participant observation in these sessions. The goal of these observations was to provide insight into (1) how data was used collectively during SIP meetings and for what purposes; (2) what types of tools or resources were available/utilized during these data use processes; (3) what extent the behaviors exhibited by SIP members during these sessions were indicative of evaluative thinking; and (4) the role leadership played in facilitating evaluative thinking and evaluative capacity building during these meetings.

Although the initial plan was to only observe the school-based leadership teams at these two sites, discussion with school leadership revealed that these teams were not the "hubs" of school improvement planning at both sites. As such the decision was made to observe the formal school-based leadership team at Case 1 and Instructional Leadership Team at Case 2. In addition to these teams, observations were also conducted during select grade-level Professional Learning Community (PLC) meetings at each site which were focused on the comprehensive review of recent assessment results. In total, I was able to conduct two observations of the main school leadership team meetings at Case 1 and one at Case 2. The access I was able to get at the two sites in relation to their PLC's differed substantially. At Case 1, I was able to conduct five observations of PLC meetings but for Case 2 I was only able to observe two. However, since the nature and purpose of the PLCs were only tangentially related to the work of school improvement planning teams and were primarily insightful for understanding data use occurring within the school beyond the scope of the SIP teams, more concerted efforts were not made to do more PLC observations for Case 2.

In relation to instrumentation, an observational protocol (Appendix B) was developed that had the following sections: meeting attendees and engagement, meeting activities, behaviors related to evaluative thinking, impressions of the SIP team, and data use instances. The evaluative thinking section was based on the Evaluative Thinking Observational Checklist (Buckley, 2011) that focused on identifying instances when meeting attendees did any of the following: (1) pose questions about claims and assumptions; (2) reflect on self-generated claims and assumptions, (3) describe logic or thinking to others, (4) illustrate ones thinking with models or diagrams, (5) seek evidence for claims and hypothesis, (6) articulate the relationship between proposed strategies an intended claims, (7) suggest alternative methods for validating claims, (8) demonstrate flexibility and willingness to improvise in pursuit of understanding, (9) demonstrate a belief in the value of evaluation [mindful, systematic, and contextually-relevant data use practices], and (10) engage enthusiastically in evaluative [data use] activities. However, due to the unanticipated variety of the meetings that were observed, every section of this protocol was not relevant for every observation. As a result, information from the protocol was organized and reviewed in the context of a more general framework that focused on who was in attendance, the main topics of discussion, the sources of data discussed or used, any decisions made, any specific evidence of evaluative thinking, and general notes on meetings activities.

Data Analysis

In alignment with the qualitive data analysis best practices outlined by Merriam (2009) and Maxwell (2005), by design, informal data analysis occurs throughout the cases study process. As such, this study was "shaped by the data that [was] collected and the analysis that accompanies the entire process" (Merriam, 2009, p. 171). However, the more formal review and analysis of the data collected in this study drew upon the qualitative forms of data analysis for

case study research outlined by Stake (1995). More specifically, categorical aggregation strategies were first used to organize interview data into meaningful collections of information – e.g., SIP team functioning/structure, capacity building activities, data tools and systems, communities of practice, expressed attitudes and beliefs. Then, data from documentation and observation were directly interpreted and situated in reference to these main categories. The direct observation and categorization formed the basis for the institutional and two case descriptions. Although each of these were carried out individually, as recommended by Stake (2006) in his book on multicase research, they were then reviewed wholistically to look for patterns and correspondence across the two cases and overarching institutional context to arrive at contextually bounded case findings or *naturalistic generalizations* (Stake, 1995) in light of the questions guiding this study.

Data Quality

As Stake (1995) reminds us, within case study research "…we deal with many complex phenomena and issues for which no consensus can be found as to what really exists – yet we have ethical obligations to minimize misrepresentation and misunderstanding" (p. 108-109). Due to the qualitative nature of this multicase study, data quality was ensured via specific steps taken to promote the trustworthiness or "credibility of a description, conclusion, explanation, interpretation or other sort of account" (Maxwell, 2005, p. 106). Specifically, to ensure consistency between the data collected and the findings presented, detailed records were kept about the case selection, data collection, and data analysis procedures of this study. Furthermore, multiple data sources and methods were triangulated to ensure that each of the case descriptions "present a substantial body of uncontestable description" (Stake, 1995, p. 110). The collection of a variety of sources via several data collection methods allowed for "a broader and more secure

understanding of the issues" (Maxwell, 2005, p. 93-94). Specifically, the iterative nature of the data analysis procedures allowed for the revision of interpretations throughout the course of the study and minimized the potential that the findings reflect systematic biases or limitation of specific methods.

CHAPTER IV: CASE DESCRIPTIONS

Institutional Context

The schools selected for this case study are located in a relatively large school district in the North Carolina serving students from over a hundred schools across vastly different urban, suburban, and rural communities across the area. According to the latest strategic plan in the district, it has some of the highest performing schools in the state and some of the lowest performing schools. Academic performance outcomes have also shown significant gaps by race, ethnicity, socioeconomic status, disability, gender, and English language status. In their strategic plan, district leadership convey both a sense of urgency to act swiftly and boldly, as well as a hopefulness that they can do better by *all* students. As part of its plan, the district has set specific goals related to increasing organizational efficiency at the district level, decreasing achievement between black and Hispanic students and their white peers, and increasing the number of students proficient in reading at the end of third grade, receiving credit for Math 1 by the start of sixth grade, seniors completing career pathways, and schools exceeding their growth targets.

Making progress towards these goals requires educators across the district to meet the diverse learning needs of students, as well as those who face considerable social and economic challenges. The challenge is that there is a sizable population of English Learners (10% of the students in the district) and more than 100 different languages spoken as a first language among students across the district. There is also a high proportion of Economically Disadvantaged (ED) students, with roughly 65% of students across the district living below the poverty threshold as of Spring 2021. Since the pandemic, the prevalence of students experiencing chromic absenteeism (i.e., students who are absent for 10% or more of the days that they have been in membership at a school) has also grown substantially and has disproportionally impacted schools

that already had higher rates prior to the pandemic (this includes the two case study schools). An overview of student demographics for the district, including and the case study schools during the 2021-22 AY are outlined in Table 3.

Table 3. 2021-22 AY District and Case Study School Enrollment Characteristics

Student subgroups	District	Case 1	Case 2
Enrollment	> 40,000	~ 450	~ 300
Race/ethnicity			
Asian	5%	10%	< 1%
Black	40%	70%	25%
Hispanic	20%	15%	20%
White	30%	5%	50%
All others	5%	5%	5%
English Learners	10%	20%	5%
Economically Disadvantaged[a]	65%	75%	40%
Chronically absent			
2019-20 ay	10%	15%	10%
2020-21 ay	25%	50%	30%
2021-22 ay[b]	35%	50%	35%

Note. The values in this table have been rounded in an effort to protect the anonymity of the district and cases included in this study, as such the race/ethnicity values might not sum to 100%.

[a]The most recent data for the percent of ED students was from the 2020-21 AY. Also, the district statistic was reported as the student poverty rate as of April 1, 2021. Although these statistics seem to be comparable, operational definitions for these terms were unavailable.

[b]As of April 2022.

School Designations

Title I Status

The two schools selected for this study represent two cases from over 50 Title I elementary schools in the district in the 2021-22 Academic Year (AY). In the district, just under

70% of the elementary schools were designated as Title I schools. According to the legislation, "Title I is designed to provide all children significant opportunity to receive a fair, equitable, and high-quality education, and to close educational achievement gaps. (ESEA section 1001)" (U.S. DOE, 2016b). Of note is district policy that all Title I funds be allocated to schoolwide programs, as opposed to targeted assistance for particular students who are deemed to be failing or at risk of failing to meet the state's academic achievement standards. Therefore, schools in the district are tasked with using these funds to implement initiatives designed to improve educational programs for the entire school. As of the 2020-21 AY, all Title I schools in the district served populations of students where roughly 50% or more of the families were considered low income.

Accountability-Based Designations

North Carolina's accountability model assigns school performance grades (SPGs) such that 80% of schools scores are based on their total achievement score (i.e., grade-level proficiency on academic achievement assessments in reading and math, 4-year cohort graduation rates, EL progress, end-of-course performance in biology, ACT/WorkKeys performance, and math course rigor) and 20% is based on schools' growth score (i.e., composite accountability growth score in reading and math). Due to disruptions in state testing during the pandemic, the last time low-performing schools were identified was in 2019, based on testing from the 2018-19 AY (NCDPI, 2021b). At this time, just under half of the elementary schools in the district were identified as "recurring low-performing" schools, meaning during the last three years (i.e., in 2016-17, 2017-18, and 2018-19) these schools had a 'D' or 'F' school performance grade (SPG) and did not meet their growth targets at least twice. Both of the schools selected for this study were classified as such; however, Case 2 was classified for two of the prior three years, whereas Case 1 was considered a low-performing school for all three years.

In addition to identifying low-performing schools, NCDPI also identifies schools as needing comprehensive support and improvement (CSI) and targeted support and improvement (TSI) in accordance with the *Every Student Succeeds Act*. In North Carolina's accountability system, CSI schools are either high schools with a four-year cohort graduation rate less than 66.7% or the lowest 5% of Title I schools in the state, when ordered according to school performance grades for all students (NCDPI, 2021a). The list of CSI schools is revisited every three years. In the district, nine of the 125 schools in the district or about 7.5% were identified as CSI schools in 2018-19 AY. No CSI schools were included in this study.

The other key classification for this case study was based on the performance of student subgroups. Specifically, schools are identified as Targeted Support and Improvement-Additional Targeted Support (TSI-AT) schools if any student subgroup has a score less than the highest "All Students" subgroup achievement score among the CSI schools in the identification year. As previously mentioned, around 60% of the schools in the district were identified as TSI-AT schools. Of these schools, about 75% had just one underperforming student subgroup, 10% had two, and about 15% had three or more underperforming subgroups. Furthermore, the Students with Disabilities (SWD) subgroup was underperforming in nearly all of the schools in this group. The next most common underperforming student subgroups, with between 15% – 20% TSI-AT schools having underperforming student subgroups in these categories, were: economically disadvantaged (EDs), English Learners (ELs), and the black student subgroup. All other student subgroups (i.e., Hispanic, Asian, multiple races/ethnicities) were underperforming in less than 5% of the TSI-AT schools. Similar trends occur when looking only at the TSI-AT schools that serve students in elementary grades, except in relation to ELs such that only about 5% of TSI-AT elementary schools have underperforming EL subgroups.

Although both case study schools were identified as recurring low-performing schools in 2018-19, neither met the criteria to be classified as CSI schools. In relation to the performance of student subgroups at these schools, both schools were identified as TSI-AT schools for the performance of their SWD subgroup. Furthermore, it was most notable that Case 1 had underperforming groups of ED and black students, whereas Case 2 had underperforming groups of ED, EL, and Hispanic students. Table 4 summarizes these statuses.

Table 4. Accountability Statuses of Case Study Schools

Status	Case 1	Case 2
2018-19 Recurring Low Performing	Yes	Yes
2018-19 TSI-AT School	Yes, three subgroups	Yes, four subgroups

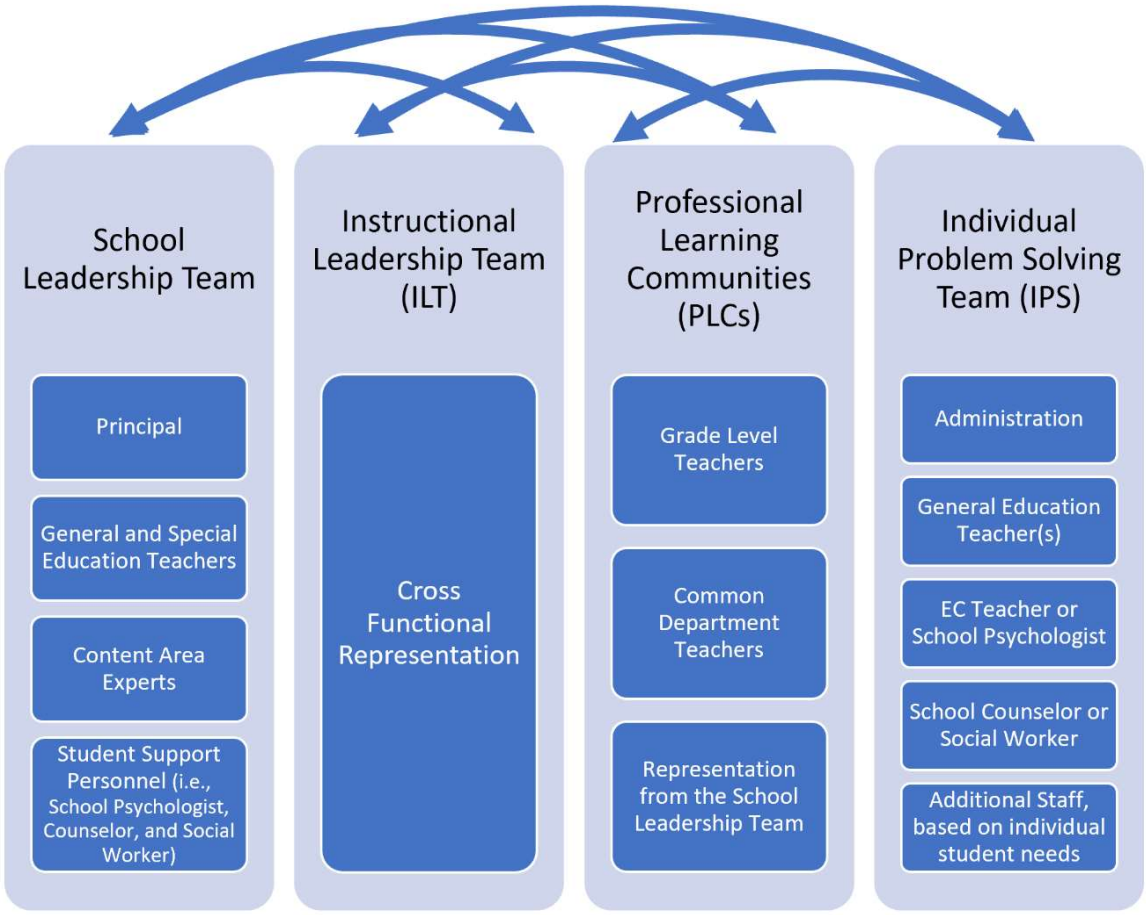
Multi-Tiered System of Support (MTSS) & Associated Teams

As of 2020, all schools in North Carolina were required to establish "a multi-tiered framework, which promotes school improvement through engaging, research-based academic and behavioral practices" (NCDPI, 2016a, p. 13). The six essential components that comprise the MTSS Framework are: (1) leadership and shared responsibility, (2) three-tiered instructional/intervention model, (3) data-based problem solving, (4) data-evaluation, (5) communication and collaboration, and (6) capacity building and infrastructure for implementation. Although the mandate for NC MTSS arose from policies governing services for children with disabilities (NCDPI, 2016b), MTSS serves as a vision for how schools should work as an integrated, data-informed system to meet their students' needs. In this way, MTSS essentially lays out specific teams, structures, and processes for identifying needs and addressing them through an intentional, research-based system of supplemental and intensive supports. MTSS is intended to support both students who are struggling in relation to academics, behavior

or social-emotional outcomes, and/or attendance via remediation and/or intervention as well as students who are not. In this way, MTSS functionally serves as a framework to ground school improvement processes and direct school efforts towards potential barriers to delivering quality core instruction and/or appropriate and effective remediation and/or interventions.

In training materials for school administrators and teachers who are implementing MTSS, the district outlines key features and practices that are related to the implementation of MTSS within schools. Although many of the details covered in these training materials is beyond the scope of this study, some key information in these trainings related to district expectations for the overall school improvement planning process and data-use practices. First, these trainings highlighted the need to link support teams (i.e., the School Leadership Team, Instructional Leadership Team, Professional Learning Communities, and Individual Problem-Solving Teams) to support effective MTSS implementation (Figure 2).

Figure 2. Reproduction of District Training Slide: Linking Support Structures for MTSS School Implementation

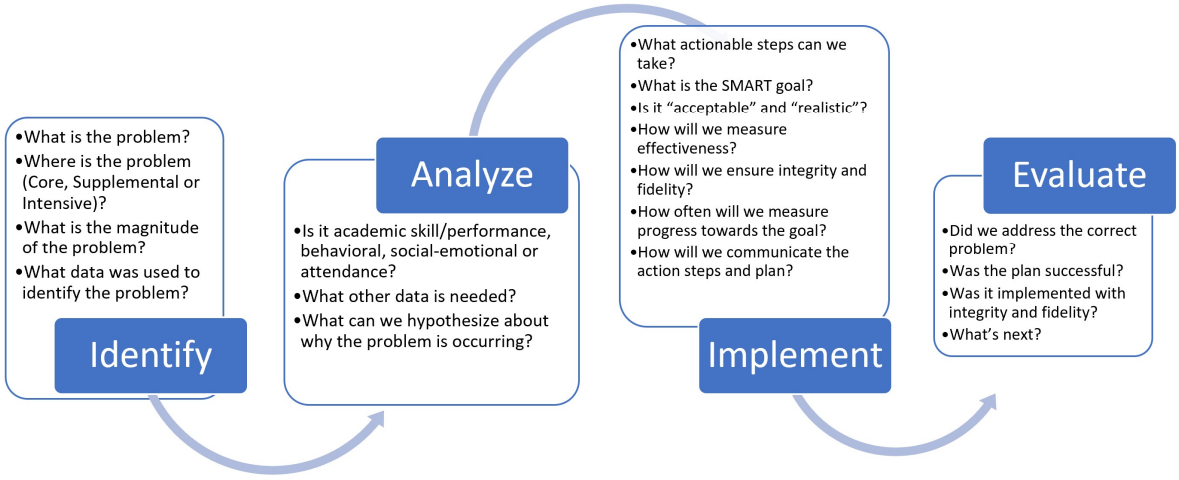


The next key feature of MTSS that is of interest in this study are the features of a comprehensive assessment system that should be in place to support effective MTSS practices. Specifically, training materials outlined different types of assessment that schools should be regularly reviewing as a part of their MTSS processes, including outcome, interim, universal screening, diagnostic and formative assessments.

The final key feature of MTSS of interest is the vision for problem solving and data use that it lays out. Specifically, in the district's model of data-informed decision making or problem solving, data should be used to identify a problem, determine why the problem is occurring,

devise and implement a plan, and then monitor and evaluate the effectiveness of the implementation plan. As Figure 3 shows, this model can be further simplified as: (1) Identify, (2) Analyze, (3) Implement, and (4) Evaluate. Using this model, schools in the district are tasked with identifying strengths, disparities, access and needs within their overall student population, grade-levels, content areas, student-subgroups, and individual learners.

Figure 3. Reproduction of District's Problem-Solving Model

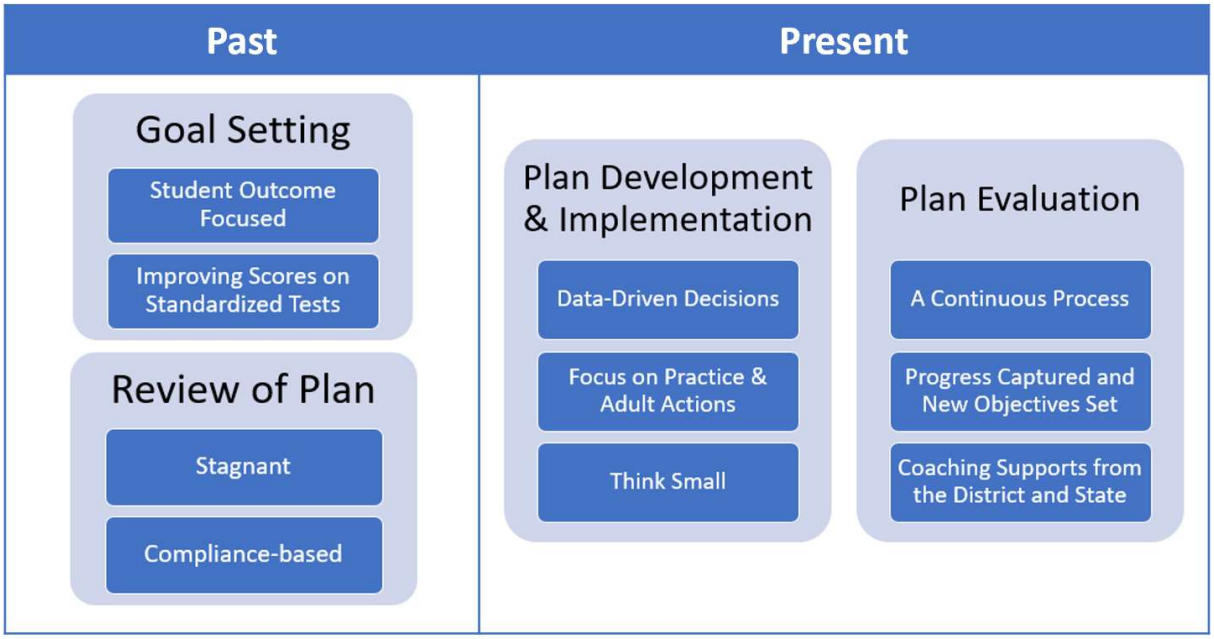


Tools and Resources to Facilitate School Improvement Planning

As previously mentioned, NCStar is an online system utilized by schools in North Carolina to document collaborative plans for school improvement. As noted in school improvement planning guidance documentation from the state (NCDPI, 2016a), schools that are identified as low performing are required to use NCStar to plan and monitor their school improvement plans. Furthermore, the state's accountability plan notes that this plan allows schools to organize their plans around a section of "over 100 research-based effective practices (indicators) and allows schools flexibility to personalize their school improvement plans to meet their distinct needs" (NCDPI, 2017, p. 11).

Guidance documentation on NCDPI's website mentions that NCStar is not intended to be a 'traditional' school improvement plan, but rather a tool that "builds accountability as well as helps schools track their improvement plans" (NCDPI, 2018, p. 11), while simultaneously facilitating transparency and collaboration among school staff, district staff, school board members and families. The shift in vision for school improvement planning that NCDPI adopted along with the usage of the NCStar system is depicted in Figure 4 below. As it depicts, this tool is intended to empower school and district staff to work collaboratively and incrementally to identify challenges or barriers to MTSS implementation in their context, devise and implement feasible and actionable courses of action to address these issues, and then continuously monitor and evaluate their progress throughout the year.

Figure 4. Reproduction of Infographics Depicting Traditional and New School Improvement Planning Visions Upon the Adoption of NCStar (NCDPI, 2018, p. 12).



Guidance documentation from NCDPI (2016a) related to school improvement planning summarizes this new process with a continuous and iterative 3-step model for school

improvement planning, i.e., assess, create, and monitor (NCDPI, 2016a). In their description of this model, the state provides specific information about data recommendations and considerations during each of these steps, summarized in Table 5.

Table 5. Summary of NCDPI's Data Recommendations for SIP Stages (2016a, p.17-18)

Stage	Recommendations
Assess	Multiple qualitative and/or quantitative data sources related to students and implementation should be reviewed and triangulated. Student Data: • Demographics (e.g., enrollment, attendance, drop-out rate, ethnicity, gender, grade level) • Student Learning (e.g., standardized tests, teacher observations, benchmark data, formative assessment data, percentage of students receiving intervention, student response to intervention data) • Student Engagement Data- (e.g., Office Discipline Referral (ODR), In-School and Out-Of-School Suspension Data, classroom-managed behavior data, attendance data including tardies and absences) Implementation Data: • School Practices (e.g., program and practice implementation, schedules, procedures) • Perceptions/Beliefs (e.g., teacher surveys, student surveys, climate and culture surveys, focus groups)
Create	Data that "allows school improvement teams to identify root causes for problems and take action to address them." Teams should ask the following questions at this stage: (i) What data must be analyzed to determine the level of implementation? (ii) What instruments must be created to gather the data? (iii) Who will make the data available?"
Monitor	Data that allows for "ongoing assessment and checking to see the impact of each objective and its corresponding tasks."

As this table shows, data needs at the "Assess" stage are substantial and require schools to attend to both internal and external factors as well as both student performance and outcome

data as well as implementation of the MTSS approach. Noting the importance of a thorough and situated understanding of the school, this document states:

> The basis of any strong school improvement plan is a thorough, unrelenting assessment of the current state of the school. Often, the true impact of a school's efforts on student learning is diffused over time. A need-driven approach to school improvement planning requires a review that considers both internal and external factors associated with the school. (NCDPI, 2016a, p. 16)

Furthermore, data at this initial stage also sets the course for data use at the subsequent stages. As such, data systems that are put in place for the needs assessment at the start of the process should be carried through during the implementation of the MTSS initiatives and used to monitor progress on targeted outcomes.

Indicators of Effective Practice

In an effort to support this overall vision of school improvement, the NCStar system provides schools with a platform to document and share their progress on over 130 indicators that represent research-based effective practices (NCDPI, 2019b). These indicators are organized into the following five dimensions: (A) Instructional Excellence and Alignment, (B) Leadership Capacity, (C) Professional Capacity, (D) Planning and Operational Effectiveness, and (E) Families and Community. Within these indicators, twelve are identified as "key indicators," and are the focus of the school improvement plans in this study and across the district. A list of these key indicators is included in Appendix C.

Evaluating Implementation

As noted above, schools are expected to actively monitor their progress towards the twelve key indicators in NCStar and evaluate their progress towards implementing MTSS. To

assist schools in this process, schools use the North Carolina Facilitated Assessment of MTSS – School Level assessment tool (FAM-S). This tool was designed to measure progress towards school-level implementation of MTSS across the six essential components of MTSS. NCDPI recommends that the FAM-S be administered towards the end of the academic year (i.e., April – June) via a facilitated administration that is led by members of the district MTSS team. Its results are intended to help school and district staff "identify and prioritize implementation steps" (NCDPI, n.d. a, n.p.).

Case 1 Description

School Background

Case 1 is situated within an historic semi-urban school a few miles outside of the city center. The school was originally founded as one of the public schools for the children of textile workers at local mills and the building where the school was housed was built almost a century ago. Beyond the historic roots of this school, Case 1 serves a large population of diverse students. Specifically, according to the most recent data reported by the district, roughly a fifth of the students speak English as a second language and among these students there were more than 20 languages spoken as a first language. Furthermore, a considerable proportion of the students at this school are from black and Hispanic families and roughly three fourths of the students at this school are economically disadvantaged. Staff reports suggest that there is also a relatively high population of EC students at this school.

Case 1 is also one of several "restart" schools across the district that started piloting the opportunity culture school model during the 2018-19 AY. The overarching goal of the opportunity culture reform model is to attract high-performing teachers to some of the lowest-performing schools in the district and to increase their reach and impact by having them take on

leadership, training, and co-teaching roles. The opportunity culture model endeavors to provide more students access to excellent teachers, compensate teachers according to how many students they are impacting, ensure teacher pay is tied to regular budgets, ensure alignment between teachers' authority and responsibilities, and provide structured times for teacher planning, collaboration and development. However, it is left up to educators how best to implement the opportunity culture model within their school.

The implementation of this new school structure and administration is a part of the "restart" model for underperforming schools across the district and gives these schools greater flexibility and specific exemptions like those of charter schools. As a restart school, Case 1 is required to prepare annual reports for NCDPI in December outlining implementation of the reform model as well as progress on "Flexibility Outcomes" or "[s]chool defined metric [or] outcome used to identify progress in the implementation or evaluation of the flexibility" (NCDPI, 2022b, n.p.). Based on a review of Case 1's school improvement plan, the specific flexibility applied is related to their academic calendar (i.e., "Restart Calendar Flexibility"), which they leverage to add additional paid workdays to teachers' calendars to improve retention and recruitment and integrate three full weeks of professional development time into their academic calendar, during which they hold parent teacher conferences as well as trainings intended to improve teacher and staff data use capacity as well as knowledge of academic and social and emotional learning (SEL) outcomes.

School Administration

The principal at Case 1 joined the school as a first-time principal roughly four years ago but has worked at the district in several capacities for more than twenty years (i.e., as a classroom teacher, curriculum facilitator, ELA Coordinator, and as key support staff on various

district-level projects and grants). They also spent several years teaching abroad. In addition to this practical experience, the principal also completed a Doctor of Education in Educational Leadership and was a part of the first cohort of an assistant principal program within the district that was designed to build leadership capacity that was centered around building cultures of equity, efficacy and cultural competence in schools to promote student achievement. The Assistant Principal at this school is another experienced educator who also has a Doctor of Educational Leadership and more than twenty years of experience in education as an early- and middle-grades classroom teacher, curriculum facilitator, testing coordinator, and administrator. The professional background and training of the administrative team this school is palpable at the school and informs their commitment to building the teaching and leadership capacity of school staff to drive school improvement planning. As the principal stated in their interview:

> I think I'd say instruction is the area I focus on... I mean, it is more my background and … that's what we're here to do. Like, yes, I want to make you... not necessarily better, but like good people in the world. But we also need to make sure you've got what you need academically.

The unrelenting focus on instructional leadership and improvement at this school is also complimented by a desire to promote more diverse leadership across the school to better reflect the community and student population. In service of this mission, the principal mentioned nominating teachers to serve as grade-level representatives who they believe "could use that push… could use that opportunity to use their voice" and help make sure there was greater representation from teachers of color and visiting teachers on the school's leadership teams.

School Staffing

School Support Staff

One of the key features of the school staff at Case 1 is the amount of school support staff dedicated to positive behavioral interventions and supports (PBIS) and social-emotional learning (SEL). Specifically, this school has two full-time counselors, a social worker, a youth development coordinator, and an external behavioral consultant who support this work. Persistent needs for SEL, counseling, social work services for students and families as well as challenges related to student behavior, prompted the principal to hire a robust staff to help meet these needs. In particular, the principal expressed a clear commitment to having two full-time counselors, regardless of how the school finances needed to be structured to accommodate these positions. Case 1's social workers roles include "…following up on dental clinics, and clothing needs, and home needs and everything else" that students and families might need. Furthermore, during the principal's second year, the decision was made to hire a Youth Development Coordinator, a new role that was described as "quasi between what a counselor and social worker would do, [but] obviously not with all that schooling." This individual acted as general support personnel, a community liaison, and a first responder when students were experiencing social or emotional issues or demonstrating unacceptable behavior. As the principal stated:

> We realized that first year, that with the SEL needs in the school and the low achievement (current achievement levels), there just ends up being a lot of frustration and kids who would walk out... And, you know, my assistant principal and I can't always get right there.

Furthermore, an external behavioral consultant who is paid through Title I funds provides key PBIS support services to various teams across the school. Specifically, their role includes

reviewing and revamping PBIS systems and structures to ensure that the MTSS layers of support are being applied regularly and are integrated into the work of classroom teachers and the School-based Leadership Team and its subcommittees (i.e., the Academic, Behavioral or SEL/PBIS, and Community & Culture subcommittees). Documentation at the school also shows that the behavioral consultant has also supported the school in the following ways: (i) conducted classroom observations to identify student and staff support needs, (ii) collaborated with the SEL team to develop research-based materials to be implemented by teachers and the Youth Development Coordinator, (iii) lead bi-annual staff training sessions focuses on the implementation of PBIS strategies, and (iv) worked with the Climate and Culture subcommittee to help them identify and implement family & staff engagement strategies by leveraging "climate and cultural data," mainly from the school's Teacher Working Conditions (TWC) Survey results and ClassDojo (an app used to communicate with families and log student behavior).

As previously noted, several staff mentioned the relatively high population of EC students at this school. As a result, the school has three EC teachers to work with these students. Furthermore, as of last year, the school also has and MTSS lead who works alongside the school counselor to determine how best to meet the needs of student who might require additional supports or intervention based on their academic performance on assessments.

Multi-Classroom Leaders (MCLs)

Although the implementation of the opportunity culture model can include up to three new positions at schools, at Case 1 the principal decided to forgo two of the positions but added Multi-Classroom Leaders (MCLs). According to the reform model, the primary function of this role is to be a teacher leader and strategic manager, making decisions about the roles and goals of

their team of teachers based on individuals' strengths, content knowledge and professional development goals as well as student performance and support needs. Furthermore, the MCLs are expected to lead reviews of student outcomes and collaborate with their team of teachers to identify and implement strategies to improve instruction and learning. The MCLs at Case 1 are split across K-1, 2-3 and 4-5 grade-level bands and are responsible for leading grade-level PLCs and data-review meetings with classroom teachers. They are also permanent members on the school improvement team (i.e., SBLT).

Staff Characteristics

In relation to teacher demographics, more than half of Case 1's teachers are teachers of color. This is important because one of the principal's priorities is building leadership teams within the school that reflect the demographics of the teaching staff as well as the students and community served by the school. In terms of the staff's years of experience, around 15% more of the teachers at this school have less than five years of experience when compared to the district overall. In relation to teacher credentials and licensure, roughly 25% of their teachers have a Master's degree and less than 1% were National Board Certified, which are both below the district percentages overall. In relation to teacher effectiveness, the most recent ratings on North Carolina Educator Evaluation System (NCEES) from the 2018-19 AY report cards (NCDPI, 2022a) indicated that roughly 65% of the teachers at this school are considered "Effective" or "Highly Effective," compared to more than 80% of teachers in the district overall.

School Resources

Although not specific to this school, staff turnover is also a challenge that school administration and leadership teams at Case 1 are aware of and trying to address. Specifically, their school improvement plan noted that although teacher retention was higher than usual last

year (i.e., during the 2020-21 AY, when most of the instruction was remote due to the pandemic), turnover spiked to almost double the usual rate during the subsequent year. Furthermore, the principal noted the unfortunate reality that emphasizing staff growth and development can often lead to more turnover as staff pursue new leadership roles within the school leading toward administration or pursue educational opportunities that take them elsewhere. When discussing the recent staff turnover at their school for individuals in the MCL position, the principal said: "I mean, it is a good opportunity to help grow people. But that doesn't always help keep the consistency with what we're trying to do here." To address these challenges, the school's improvement plan specifies that they leverage calendar flexibility afforded to them as a restart school to provide their teachers with more paid days per year to increase their salaries and encourage retention and recruitment. The plan also notes Title I funds are used by this school to pay their MCLs and behavioral consultant to specifically work with staff to make sure they feel supported as they work with students and the community.

School Leadership Teams and Structures

The following sections highlight some of the key leadership teams that are engaged in decision-making and school improvement efforts at Case 1.

Instructional Leadership Team (ILT)

At Case 1, the Instructional Leadership Team (ILT) includes the school administration (i.e., the principal and assistant principal) along with the MCLs "just by nature of what their role[s] [are]." According to the school improvement plan, this team meets weekly to "to look at school improvement goals and determine areas of focus as we use the continuous improvement cycle." For example, this team might look at academic trends and outcomes from assessments and monthly classroom walkthroughs that they conduct to identify trends in student outcomes

and opportunities for improvement for individual teachers and grade levels. One teacher noted that the effectiveness of this team over the last couple of years and has a positive impact on the school improvement process.

Although this team functions semi-independently of the SBLT at this school, it also functions as a subcommittee of the overall leadership team. Specifically, during SBLT meetings members of the ILT team might share specific information related to their work (e.g., findings from walkthroughs and/or plans of action), invite others to provide feedback, and/or ask SBLT representatives to bring specific information and updates back to their grade level teams. However, much of the work of this subcommittee is embedded in the work practices of the administrative and MCL positions.

The School Based Leadership Team (SBLT)

According to their bylaws, the school-based leadership team at Case 1 includes roughly a dozen staff from various roles across the school (i.e., administration, classroom teachers and school support staff). The principal at Case 1 has chosen to fill the administrator position on the team. Moreover, all of the school's MCLs are required to be on the team by nature of their position. The remaining members of the team are staff who are nominated to serve two-year terms as representatives from the following groups: K-5 classroom teachers, classified staff (i.e., teaching assistants, custodians, cafeteria staff and clerical staff), instructional support personnel (i.e., guidance, speech, EC, EL, AIG and other certified personnel), specials teachers (i.e., art, music, physical education), and parents. Interviews with school staff suggest that most of the members of this team have five or more years of experience in the school.

It is interesting to note that in relation to staff representatives, the only stipulations at this school are that there be four representatives in total for all K-5 classroom teachers and one

representative for all other staff groups. However, there are no specific requirements about the number of representatives needed for specific grade level bands (e.g., K-2, 3-5) or the extent to which the group of staff representatives need to be reflective of the school's overall staff or community. However, the by-laws do provide more specifics about requirements of the parent representatives on this team, namely that these representatives

> … shall reflect the racial, geographical and socioeconomic composition of the students enrolled in the school and … [i]f the election does not result in a representative group of parents, the principal may appoint additional parents to the team as needed. Those names must then be brought to the largest group of parents for approval.

However, as previously noted, the principal has made concerted efforts to promote "...more balanced... representation throughout the building, in making [these] decisions" on the SBLT.

Staff on the SBLT described the primary purpose of the SBLT in general as "work[ing] on how the school is run." It accomplishes this by being the centralized decision-making body for the various strategies (e.g., policies, funding allocations, professional development initiatives, other capacity building activities) intended to improve students' academic, behavioral, and attendance outcomes. According to the team by-laws, the leadership Team is responsible for the following:

1. developing, monitoring, assessing and amending the School Improvement Plan (SIP),
2. promoting policies and procedures within the school designed to promote improved educational outcomes, school safety and community relations,
3. "facilitat[ing] decision-making based on available data,"

4. building their capacity to address parent and staff concerns as well as improvements related to curriculum, school climate, classroom management, parental involvement, “two-way communication” and co-curricular activities, and
5. consulting with the principal to make strategic budgetary decisions related to staffing, professional development and instructional materials.

The planning and implementation of action steps related to these key responsibilities of the SBLT are primarily carried out under the direction of a team Chairperson and three team subcommittees – i.e., the academic subcommittee, behavioral (as known as the SEL or PBIS) subcommittee and community & culture subcommittee. As of last year, subcommittees started to become embedded within the SBLT to ensure that progress is made on the main objectives of the school improvement plan and that activities or new initiatives related to the three focus areas of MTSS (i.e., academics, PBIS, and attendance) are regularly reviewed and coordinated by a central leadership team. Following the initial creation of these subcommittees, each of these groups have assumed the primary responsibility for breaking down the key indicators they are working on and analyzing "how we are meeting each goal and what we are putting into place.”

In terms of subcommittee membership, there are four members on the academic subcommittee (i.e., the lead EC teacher and three MCLs), two to three members on the community & culture subcommittee and two members on the behavioral subcommittee. In the interviews, SBLT members mentioned that individuals self-selected which subcommittee they would serve on based on their interests and/or roles. The principal also noted that aligning subcommittee work with teachers’ pre-existing professional roles and responsibilities can protect teachers’ time and allow for more strategic actions to be taken based on key priorities and essential responsibilities. This also allowed for reasonable expectations to be set and more

concerted actions to be taken to support teachers' regular responsibilities and subcommittee responsibilities.

Professional Learning Communities (PLCs)

The professional learning communities (PLCs), which are led by the MCLs, occur weekly and are organized by grade level. These teams make the majority of decisions about how to collectively address widespread issues or challenges that arise from review of student assessments/academic performance on standards. During these meetings, MCLs guide classroom teachers through the review of formative assessment data (i.e., common classroom assessments and exit tickets) as well as more summative assessment data from benchmark, diagnostic and interim data. According to the school's SIP plan, the more formative assessment data was used for "small group instruction planning and implementation." Furthermore, according to interviews, the more summative assessment data is used to help teachers determine small group needs for reading and math instruction. Although teachers could access student assessment results online, often times MCLs reported compiling the results from students in different classes into Excel sheets for their PLC teams so that they could identify collective strengths or areas for improvement that they could then discuss as a group and collectively decide how to address key areas of concern. Although similar data was reviewed within the ILT, within the PLCs teachers only looked primarily at data within their grade level. To supplement these discussions, MCLs were also required to meet with each teacher individually to discuss specific student performance. According to the school's SIP plan, PLC time is also used as an avenue for information sharing and a platform for professional development. For example, this time might be used for follow-ups with the behavioral consultant related to MTSS and student supports, trainings on new tools, or coaching related to core curriculum and instruction.

School and Team Cultures

The culture of the SBLT is undergoing significant changes under the new principal. Specifically, the Chair of the SBLT is taking a more active role in leading the work of this team. Specifically, they have started collaborating with school administration to set agendas and facilitate team meetings (i.e., distribute meeting agenda, start/end meeting, assign meeting roles, ensure meeting minutes are kept, open discussions on current issues, promote discussion and decision making through consensus building, summarize key decisions/actions taken during meeting and action steps to be taken before the next meeting, and solicit feedback about meeting effectiveness from team members). In addition to taking a more "hands-off" approach to leading the team overall, the principal is also extending this approach to the work of the subcommittees. Specifically, interviews suggested that although the principal is actively supportive of new ideas and initiatives that the team comes up with and encourages them during implementation, they are not going to “chase [the team members] down on it because [the principal] would like it to be something they do." With this shift towards more distributed leadership, some SBLT members express that staff is starting to advocate for themselves; specifically, one team member explains: "I think people are… becoming more comfortable speaking up about what we need because now ... we have more buy-in from teachers.” However, providing staff with the time and space to take ownership and lead the school improvement plans on the SBLT has not been without its own challenges. Specifically, the principal acknowledges the challenge of stepping back and allowing teachers to take the lead so that they can take ownership and build their leadership capacity. This is particularly difficult given the principal’s perception that many of the staff are already overwhelmed with their regular roles and responsibilities and their desire to jus handle SBLT and other SIP activities on teachers’ behalf to lessen their burden.

The perception that there is greater buy-in among members of the SBLT is not unanimous at this school. Some team members say that attendance has been "a little spotty" this year as a result of the pandemic, which has in turn led to some challenges in communication. This is particularly challenging when members of the SBLT who are also on other leadership teams (i.e., the ILT) or grade-level teams are absent from the monthly meetings. In such cases, the feedback loops that are supposed to be built into the system by virtue of the crossover in team membership are hampered since information does not travel as well via meeting summaries or emails. In this context, what is discussed and decided on by some of the subcommittees "doesn't necessarily funnel back through" to those on related teams across the school. For this reason, some team members suggest that there should be representation from every grade level at every SBLT meeting and that there should be alternates when the usual grade level representatives are not able to attend. Some staff think this would prevent some grade levels from being "kind of left out in the cold [in relation to] … what the school is trying to accomplish." On a related note, one team member believes that there should be grade level representation on all subcommittees in order to "just make everything more cohesive" and another member thinks that the SBLT meetings should function more like staff meetings with more active engagement from the wider school community but with voting limited to official members and representatives. However, the desire for more widespread knowledge and perspective sharing during these meetings is juxtaposed by the stark reality that teachers within these school feel overwhelmed and it has been incredibly difficult to maintain staff motivation and engagement in what seems to be an everchanging context within schools. The following quotes from school staff capture the essence of this reality:

> Teachers, I think across the nation, feel that... our job descriptions have completely changed. And so we are doing a job that we did not sign up to do. And so keeping teachers motivated and excited to come to work, and excited to be in a space where their job looks completely different from what they want it to look like is hard.
>
> I would say the biggest thing is when it's time to go home, everybody's ready to go home, and they don't want to stay after school for something.

Impacts/Decision-making Power of School Leadership Teams

The primary power of the SBLT at this school is manifest in the instrumental role it plays in the design and implementation of the school improvement plan and in the recommendations they provide to the principal related to professional development activities and strategic resource allocation to support school improvement efforts. However, as indicated in the team's by-laws, the principal holds the legal authority to make critical budgetary decisions related to staff development, instructional materials and staff positions that underpin the activities the SBLT designs and implements. Although this team is only officially serving in "an advisory capacity," how the principal chooses to run this team dictates the extent to which they have actual power to influence and inform critical decisions made at the school. At this school the principal's commitment to a more "hands-off" approach on the team and its subcommittees is seemingly giving the team more direct decision-making power and creates a more distributed decision-making process within the school. As the principal notes, it is important for school staff to know that he/she "doesn't just sit in [his/her] office and come up with the budget… there is some opportunity for somebody else to give feedback." In this way, one of the main impacts of the school improvement planning process is that it built trust between school staff and administration so that decisions are not just top-down and opportunities for feedback are provided. Furthermore,

one member of the team notes the instrumental role that the subcommittee structure plays in facilitating this process. This individual comments that with the shift away from the "admin-based" decision making process that was in place previously and "… with this new structure in place, every teacher [is] more [able to] have a voice now." Furthermore, this member of the SBLT suggests that promoting more teacher leadership is more critical than ever for the sustainability of the team's efforts. "We can provide more of that opportunity for teacher buy-in, because that that's huge, you know, especially when everything is so stressful all the time these days… People want to know that they're being heard."

In relation to the main impacts of the SBLT and the school improvement process overall, several team members highlight how this team serves an informal knowledge building and information sharing role. Some note how participating in this team helps school staff understand the logic behind specific decisions that are made and provide broader perspective on "how it all fits together." Another individual notes that participating in the team gives them more awareness of what was going on in the school and has allowed them to better understand other staff member's perspectives based on their vantage points and experiences.

> It definitely opens your eyes, because you may not … know what's going on in the school from you just being in your classroom, but listening and talking with other teachers, as well as the principal and MCLs allows you to be more aware of what's going on.

It is from within this context, with expanded understandings of what is happening in the school and the priorities of various stakeholders, that the SBLT and its subcommittees come together to collaborate and identify new strategies or opportunities to help improve their school.

Although administration and staff at Case 1 highlight some notable positive impacts of the SBLT and school improvement planning process overall, the principal expresses some

overarching discontent with the process. Specifically, they believe that district mandates related to the goals and directions of the school improvement plans have acted as barriers to more authentic engagement in school improvement planning process because they reduce the autonomy of the school and ability to focus on school-specific/local-issues. As one individual stated:

> In all honesty and transparency, I think that it's [the school improvement planning process is] not what you would intend in [terms of] the very basics of like school improvement because so much is driven by the district, [which] still tells us certain areas to work on. You know, this year's like, "You have to have a goal related to this, this and this, and this. And then that all has to align with what your Title I plan has and your Restart [plan]..." I get all of those pieces [but] I don't think they always lend themselves to looking at the data as in depth as we might prefer.

School Improvement Planning Goals

Although the district sets specific parameters for all improvement plans and specifies the nature of the goals schools should be setting, every school in the district is given the opportunity to determine the specifics of their own goals. The goals established by Case 1 on their school improvement plan focus on decreasing chronic absences; increasing the proficiency of their black students on math, reading and science end-of-grade (EOG) assessments; increasing the school's overall composite SPG; increasing teacher capacity through job-embedded coaching; and reducing the amount of instructional time lost by implementing virtual assignments and instruction during inclement weather days and quarantines/isolations.

Data Sources and Information Leveraged in Decision Making

At this school much of the data used for decision making roughly fall into three categories: (1) assessment data, (2) administrative data, and (3) locally constructed or informal data. Table 6 shows an overview of the nature of these data sources and associated tools and infrastructure organized by data type and MTSS goal areas.

Table 6. Specific Data Sources, Tools, & Infrastructure by MTSS Goal Area at Case 1

Data type	MTSS goal area	Data source specifics	Data tools & infrastructure
Assessment data	Academic supports	• State Standardized End-of-Grade and Beginning-of-Grade Assessments • District-Developed Interim Assessments • National Benchmark Assessments • Progress Monitoring Assessments • Classroom, curriculum-embedded assessments	• Vendor Reporting Dashboards • PowerSchool, Performance Matters (Interim Testing Platform) • District-Developed Power BI Dashboards • District-Provided Standard Treatment Protocols
Administrative data	Attendance supports	• Records of Student Attendance	• PowerSchool, Student Information System
	Behavioral (SEL or PBIS) supports	• Incidents+ Records of Serious Behavioral Infractions	• Incidents+ in Educators Handbook, Aggregate Data Pulls by Administration
Locally constructed or informal data	Behavioral (SEL or PBIS) supports	• ClassDojo Records of Minor Incidents (i.e., Daily Behavior Points) • Student Survey of Trusted Staff • Informal Student Feedback During SEL Lessons with school counselors • Observational Feedback from Behavioral Consultant	• ClassDojo Reports, Class and Aggregate Data Pulls by Administration • "Mentor List" • Formal Feedback and Recommendations Provided to Staff from Behavioral Consultant Regarding Implementation of PBIS and SEL Supports

As this table shows, there are a variety of data sources leveraged at this school to support their school improvement efforts. The following sections provide additional details and describe how these sources are leveraged as well as specific systems and structures in place to support the collection, analysis and interpretation of this data so that it could be leveraged as a part of decision making.

Academic and Assessment Data

Academic and assessment data is an essential part of the discussions and decision making processes across many of the teams at this school. Specifically, one of the main uses of assessment data is to identify individual and small group support needs in reading and math based on student, class and/or grade level performances on national benchmarks like NWEA and diagnostic assessments (e.g., DIBELS). The other main assessments used at the school level are progress monitoring assessments for students receiving supplemental and intensive supports (e.g., FastBridge, MathWorlds, and SPIRE or the Specialized Program Individualizing Reading Excellence). These assessments are used in accordance with the "Standard Treatment Protocols" shared by the district, which outline particular instructional materials and activities to be carried out with students in small groups (i.e., typically groups with six or fewer students) over the course of six weeks. In relation to instructional planning and implementation, MCLs sometimes guide grade level classroom teachers through the review of common formative assessments, lesson exit tickets, as well as curriculum-embedded assessments (e.g., Zearn or Numberworld for math and Waterford for reading) during PLC meetings to help them make informed decisions about how to improve their whole group instruction. Finally, although the school improvement plan notes that district-created interim assessments can be used for similar purposes, a couple staff this school expressed the belief that the usefulness of these assessments is limited since they

are only intended to determine student proficiency on standards taught during a particular period and are not comparable over time.

Data Tools & Infrastructure for Assessment Data

In general, staff this school typically access and review assessment data on an 'as needed' basis by accessing the vendor-provided reporting systems for the assessments. Teachers only have access to their students' data on these platforms; however, MCLs pull data for all teachers in their respective grade levels and then aggregate results by grade to provide summaries about areas for strength and improvement for each grade. Although the principal notes that they are aware of and have used some district created Power BI dashboards to look across various academic data points for individuals and groups of students, no teachers mention using such tools during the course of their interviews and the use of such tools does not appear to be standard practice among school staff.

Administrative Data

There are two main sources of administrative data that are used at this school for decision making, namely: attendance data and behavior records from major infractions or incidents. Student attendance data is used along with academic and behavioral records as a part of an "early warning system" at the school level to identify students who might need additional MTSS supports. One of the SBLT members who was interviewed mentioned that they typically review the attendance data monthly in tandem with their SBLT meetings. In addition to these regular reviews, the team plans to review attendance data at the end of the year to determine the prevalence of chronic absenteeism in the school and whether they have met their specified attendance goal. However, based on staff reports, there does not seem to be a standard approach

for addressing attendance issues specifically or a standard course of action because student and family situations often vary substantially from one case to another.

The next piece of administrative data that is used at this school are records of major behavioral infractions or incidents that were logged in a system called "Incidents+" within a platform called Educators Handbook. This system is used by the school's staff to record serious behavioral incidents or actions and included information about why students might have been acting out, what they did, when it happened, and how the school staff responded to the incident. Reports suggested that this data is also pulled monthly by the principal to be reviewed by the SBLT behavioral subcommittee.

Data Tools & Infrastructure for Administrative Data

These administrative data sources are logged in district-wide data systems designed for these particular purposes. Based on staff reports, the principal usually pulls records from these systems monthly to share with the appropriate SBLT subcommittees or as needed to school staff who are reviewing student performance as a part of the early warning system process.

Locally Constructed or Informal Data

The last main type of data used at this school can be described as locally constructed or informal data, which is collected by teachers and support staff. Broadly speaking, much of this data is used to support the behavioral aspect of MTSS and is often used to identify and respond to instances when students might need positive behavioral interventions and supports (i.e., PBIS). Specifically, this type of data includes information about minor incidents that is obtained from an app called ClassDojo, a "mentor list" based on student reports of which members of the school staff they feel most comfortable with and trust most, observational data collected by the behavior consultant to give teachers feedback on the implementation of PBIS, as well as

informal student comments during SEL lessons that can inform how classroom teachers and other staff provide behavioral supports to individual students.

Data Tools & Infrastructure for Locally Constructed or Informal Data

One of the main data tools in this category is called ClassDojo, which is used to collect and review records of student behavior. One teacher described this platform as “a social media platform for schools.” Teachers at this school use this app to communicate with students and parents about what is happening in the classroom and how students are doing. Teachers also use this platform to award or deduct behavior points according to the extent to which students follow the behavioral expectations at the school. The behavioral consultant trained classroom teachers to use this platform to document minor behavioral issues as a part of the behavioral aspect of MTSS. Once the data is in the system, teachers report being able to use the app to view the behavioral data to look for trends in student behavior. An added benefit of this particular platform is the resources it provides to teachers for communicating with families whose first language is not English. Specifically, ClassDojo has the ability to translate correspondences into a multitude of languages and one of the school’s teachers said they use it to help them communicate with parents and that "there has not been a language that I needed that it didn't help me with."

The next source of data is the creation of a local “Mentor List” for students at this school to facilitate more immediate/direct support of students experiencing behavioral issues. Specifically, this year staff at Case 1 have compiled a list of which three teachers students feel most comfortable with in the school to assist them with identifying which teachers might be readily available to students at any given time if they are experiencing behavioral challenges. As one teacher stated:

> …when [students] do feel uncomfortable, or when they do need someone to come and calm them down. Now we know who they're going to respond best to, and who they're going to be most honest with about what's going on. And that's been extremely helpful… We were able to go on the Excel sheet and see, okay, this teacher is available[who] they respond well to then let's see if they can go have a productive conversation.

Specific details about how this list was created were not provided, but in general it seems as though it was completed via an online format involved asking students directly who they trusted most in the school.

The next data source is collected by the behavioral consultant, who conducts classroom walkthroughs at various timepoints throughout the year and then provides feedback about the school-wide implementation of behavioral supports and interventions during the SBLT meetings. The information from this feedback is then used to inform decisions about how to address areas for growth and was also reported back to grade level staff by their representative and/or MCLs.

The last source of data that was mentioned is informal student comments shared during SEL lessons with the school counselors. Specifically, when the guidance counselors go into classrooms to do lessons on things like mindfulness, kindness, and strategies to calm down and re-center, some teachers mention leveraging the informal information provided by students during the course of these sessions to determine students' behavioral support needs. One teacher stated:

> Hav[ing] time to sit and just listen to the things that the students are saying, it gives me really good feedback on what that student might need at different times in the day, and how I can better support them.

Although there is not a systematic process for collecting this type of informal data, having teachers in the room during these sessions naturally creates an opportunity for them to informally gather specific information to help support their students.

Data and Assessment Knowledge and Capacity

Review of the school's improvement plan, observations of SBLT and PLC meetings as well as interviews with school staff all suggest that data and assessment review and use is a well-established expectation and practice in this school and that it is consistently used to inform decisions at the school-, grade-, classroom- and individual-/student-level. Though the proliferation of data this school is beneficial in many ways, the principal noted that it is sometimes a double-edged sword, particularly when it comes to assessment data. "We have almost more data than we can use… I do think, you know, some of what we have is more usable, and user friendly than others." Therefore, the primary challenges appear to be streamlining and reducing the duplication of efforts related to data collection and assessment. Specifically, there is a desire for the ability to provide more feedback on district assessment mandates for both interim and benchmark assessments. The principal notes that they have had little use for the district-created interim assessments, particularly since the introduction of the benchmark assessments last year that they found to be very indicative of student performance on the EOGs. Additionally, in relation to the assessments that are more summative in nature and removed from classroom instruction (i.e., interims, benchmarks and EOGs), the principal rhetorically asks what standard comparisons like "percent proficient" really tell them in the way of actionable information.

Furthermore, in relation to streamlining data collection and use, the principal mentions that they are aware of district tools for aggregating and reviewing various pieces of data simultaneously (e.g., Power BI dashboards) but notes that they don't use them extensively and

there is no observational evidence that these particular tools are used by the SBLT or MCLs and classroom teachers during PLCs. Also related to streamlining data collection to facilitate use, the leader of the EC team states that they prefer to use the online versions of some of the instructional materials because these versions have data collection tools built-in, which make it easier to regularly review and analyze student data and track progress. However, this teacher also notes that the availability of these online materials and benefits for data collection is not always known or utilized by all teachers in the school. As a result, this teacher highlights the importance of communicating to teachers that there are now online versions of many of the instructional materials they are using to promote more efficient and regular data use.

Data Valuing and Capacity Building

Interviews with staff make it clear that most individuals believe that data is critical for making more informed and strategic decisions at this school. As one individual stated:

> If you're not looking at the data, then you're kind of just making an off-the-wall, rash decision that might not best represent the whole or the issues. So I think the data is very important to look at, to make sure that you're addressing the root of the problem and not just making some sort of blanket kind of solution.

Furthermore, the principal has been "trying to really push them [i.e., members of the SBLT] to bring the data" to their meetings to inform their discussions and has actively been trying to build data use capacity on the team by "trying to really model sort of how they really can be helping to make decisions in the building, [but] it's still a work in progress."

Despite this high level of data valuing expressed by the principal, it is important to note that the staff at this school do not believe that the value and credibility of all data sources are

equal for various purposes. Table 7 highlights some key beliefs and statements made by staff about the credibility and usefulness of particular data sources.

Table 7. Summary of Expressed Beliefs by Case 1 Staff About the Credibility and Usefulness of Particular Data Sources

Data source	Beliefs about credibility and appropriate use
Assessment data in general	The principal noted that the academic and achievement data they rely on (i.e., EOGs, interim assessment results, NWEA benchmarks) "are all considered best practices by the district [and] by MTSS measures, so that gives a decent amount of credibility to me."
NWEA benchmark assessments	Based on first year implementation and local reviews of the results, multiple staff members believed these assessments are useful for determining student growth (especially within the year) and to predict whether students will be proficient on the EOGs at the end of the year.
Diagnostic assessments (e.g., DIBELS)	One staff member mentioned that these are useful for looking at student growth, especially within the year
Progress monitoring assessments (e.g., FastBridge)	One of the EC teachers at the school mentioned that although the amount of progress monitoring information provided is often overwhelming, it can be very helpful for pinpointing specific challenges for student and can promote more equitable and differentiated support and interventions.
District-made interim assessment	Multiple staff members commented that these are only really useful for determining student proficiency on standards for that period but are not useful for determining growth, making comparisons over time, or predicting future proficiency The principal also thought that with the introduction of benchmark testing last year, these became even less useful.
Attendance data in district system	Although the principal noted that sometimes teachers do not take accurate attendance, they believe that it is generally a pretty reliable data source for their purposes.

Case 1 Summary & Key Points

Case 1 is embedded in a semi-urban, Title I, opportunity culture elementary school with experienced leadership and support staff who are committed to meeting both the behavioral and academic needs of their students and teachers. As a part of opportunity culture reform model, the school has Multi-Classroom Leaders (MCLs) who work as strategic managers and capacity builders with grade-level groups of teachers, primarily through PLCs, as they assist classroom teachers to reflect on their instructional practices and lead reviews of student outcomes. The MCLs are also permanent members of the school improvement team (i.e., the school-based leadership team or SBLT).

At this school, the SBLT is responsible for engaging the school community in school improvement efforts organized around key indicators mandated by the state. Over the last year, the work of this team has started occurring primarily via the academic, behavioral (i.e., SEL or PBIS) and community & culture subcommittees, which focus on key areas that are organized around current SIP activities and are loosely align to the MTSS focus areas. Although this team officially serves in an advisory capacity as they make recommendations to the principal and other school leaders via discussions and formal feedback, the principal's more "hands off" approach on this team has allowed staff to feel more ownership for this process. However, some members of the team expressed challenges that prevent this process from being as collaborative and grounded in local needs as they would like it to be.

One distinctive feature of this case is the principal's active commitment to promoting more representative and distributed leadership on the school improvement planning team. This case highlighted how persistent challenges among the student population at this school related to attendance, behavior and social and emotional supports have become even more difficult as a

result of the pandemic. Furthermore, some staff express considerable challenges with morale and communication challenges arising from the pandemic as well as the actions they have been taking on the SBLT Community & Culture subcommittee to address these challenges. Furthermore, this school has prioritized investment in staff and data tools to support positive behavioral interventions and supports in addition to the regular data use practices that are led by MCLs during grade level PLCs to making instructional decisions and decisions related to student supplemental support needs.

Case 2 Description

School Background

The school for the second case study (Case 2) is another school with strong historic ties in the community. It was established through the consolidation of two elementary feeder schools that were constructed in the buildings of formerly segregated high schools in the area. Over the last few decades, enrollment at the school grew substantially until new schools in the area cut its enrollment by more than half. Currently, this school serves around 300 students in a rural town roughly ten miles outside of the main city center. The population of students includes disproportionality more White students and fewer Black students than the district overall. Furthermore, roughly 40% of the students at this school are economically disadvantaged, which is about 25% less than the district overall and 35% lower than the other case. Though only a small percentage of students at this school are ELs, the principal mentioned that a notable percentage of parents only spoke Spanish.

School Staffing

In relation to the experience of staff at this school, there are relatively similar proportions of teachers at this school with zero to five, six to 15, and more than 15 years of experience. In

relation to teacher credentials and licensure, slightly more teachers at this school have a Master's degree or are National Board Certified than in the district overall. In relation to teacher effectiveness, the latest ratings on North Carolina Educator Evaluation System (NCEES) from the 2018-19 AY report cards (NCDPI, 2022a) indicate that around 90% of the teachers at this school are considered "Effective" or "Highly Effective," which is just above the district average of 87%. In relation to teacher demographics, only one out of four teachers at this school are teachers of color.

School Administration

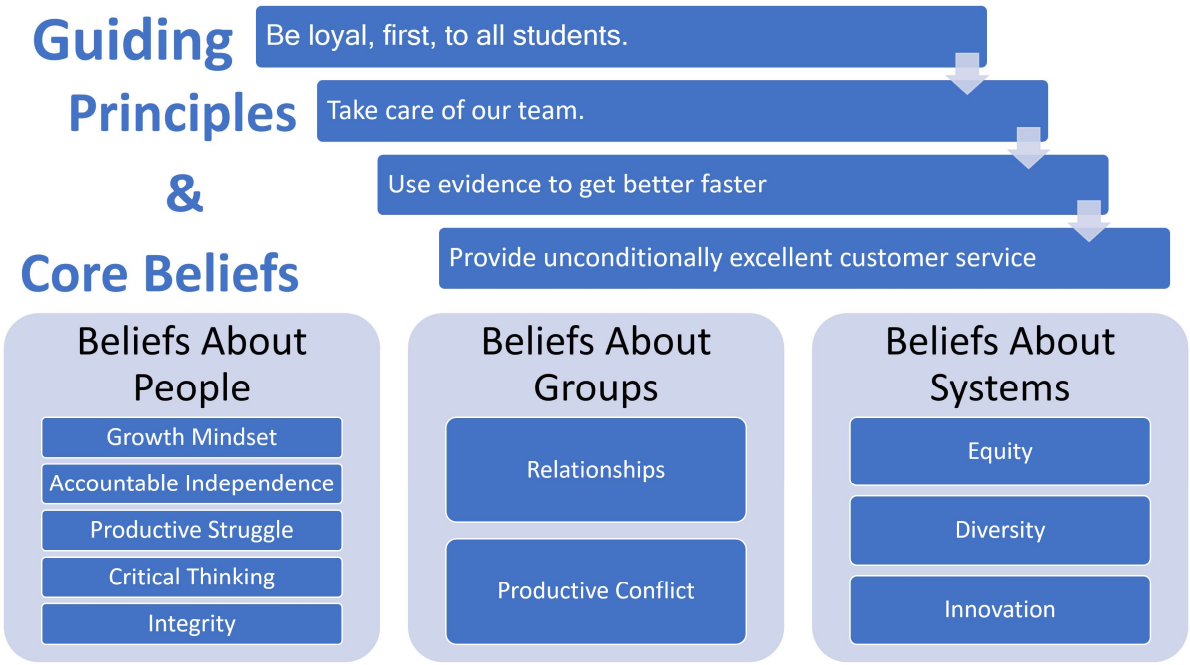
Recently, the leadership at this school has undergone significant changes. Specifically, during the 2020-21 AY a new, first-time principal started at this school. Prior to this role, this individual was an Assistant Principal at a high-poverty, urban elementary school in the district and had previously worked both as am early- and middle-grades teacher in the district and as a director of a district grant focused on using technology supports to individualize student learning. Before starting in the district, the principal also spent time working on creating data-driven instructional tools that were intended to "[make] teachers more effective, using technology." When the new principal started, they decided to hire two Muti-Tiered Systems of Support (MTSS) leads for the school, who essentially function alongside the principal as the core leadership or administration team.

School Vision, Mission, and Belief Systems

The new principal has taken the lead on revamping and refocusing the school direction via the introduction of a new mission, new vision, and set of values that serve as "a measuring stick" in their decision-making processes. In terms of content, the mission statement changed from "this long paragraph... [that] nobody [could] remember even what the contents of it were"

to one that is concise and focuses on meeting students at their level to prepare them for life as well as the college or career or their choice. Establishing new guiding principles and beliefs about people, groups, and systems was also a part of this process. An overview of the revised vision, mission and beliefs is provided in Figure 5.

Figure 5. Guiding Principles and Core Beliefs for Case 2



The principal has been the driving force behind these modifications. Specifically, they have taken the lead in the revision process by initially drafting changes and then requesting final review and approval from school leadership. Although the new principal values staff buy-in and a shared vision and mission among school staff, they also felt as though their team was not ready for discussions related to these things when they first started. Even so, reports from school staff who were interviewed make it clear that the guiding principles do, in fact, play a large role in how decisions are made on leadership teams at this school and are driving forces for improvement that these teams were undertaking. Furthermore, in relation to the core beliefs

established by the principal, there is a great deal of attention paid to the second belief about groups, i.e., productive conflict, and commitment among the core leadership to developing this among school leadership.

School Resources

Several school staff who were interviewed discussed some of the challenges related to the school improvement processes due to time constraints that are systemic and nearly impossible to address without pulling time away from teachers' other critical roles. Specifically, when asked how the school improvement processes might be improved, one individual said:

> … just more time, but that's not [going to] happen. It's like, I say that but then I don't want more time added to it because they're time-consuming enough… but it's just like, there's just not enough time in the day to get everything worked out.

Another key challenge identified by staff that is not necessarily specific to their school is teacher turnover. Specifically, as the principal discussed challenges related to distributed leadership and the capacity of thier staff to take on some "more of the heavy lifting" when it came to really "digging into" and using the data, they lamented the fact that the reality of the system is that "newbies [i.e., new teachers] come in and they're gone in three years" because they burn out or realize they can get paid better elsewhere. As such, it seems unrealistic to expect the majority of teachers within a school to have a lot of experience in the classroom and familiarity with best practices. However, the principal believes that these two things are essential components of distributed leadership and capacity building within school improvement planning efforts. Related to this is the feeling among school staff that there is a general lack of data use capacity, which would require both data literacy and tool literacy.

School Leadership Teams and Structures

The following sections highlight some of the key leadership teams that are engaged in decision-making and school improvement efforts at this school.

"Core" Leadership Team

The informal "core" leadership team, which is comprised of the principal and the two MTSS leads, is perhaps the most influential leadership team at this school. Specifically, this core team is primarily responsible for the agenda setting process in the school. This is manifest in the instrumental role they play in problem identification and the prioritization of key issues to bring to various other leadership groups within the school. In many ways, this group sets the boundaries of what will be considered and addressed as a part of the school and instructional improvement initiatives as well as how they are implemented. However, it should be noted that although this team holds much power in the school improvement planning process, the courses of action and ideas they put forth are often a starting point from which the other leadership teams work. For example, specific actions that are set in course by this team might be modified or delayed according to the level of buy-in for particular agendas or capacity for implementation. In this way, this group can be viewed as the driving force behind strategic decision making that is occurring in the school, which then sets priorities and the boundaries for more distributed and engaged leadership and decision-making activities.

Instructional Leadership Team (ILT)

Before the current principal arrived, the Instructional Leadership Team (ILT) was relatively new, quite small and had relatively little impact on what was happening in the school. More specifically, there were only about four individuals on the team and much of their time was

spend meeting monthly off-site to attend district trainings such that the work they were being asked to engage in "wasn't very cohesive with anything else in the buildings."

However, the current ILT was described by school staff as "really where the action is." As such, this team does "most of the heavy lifting" in relation to decision-making at the school level and is involved in much of the formal, managerial decision-making process that are required (e.g., decisions related to the Title I budget). Another key function of this team is making instruction-related decisions, identifying "local concerns" or opportunities for improvement at the individual-, grade- or school-level, and engaging in "productive conflict" or debate related to schoolwide issues and potential courses of action before they were brought to the larger School Based Leadership Team (SBLT). Examples of decisions that might be discussed by this team include: the allocation of classroom resources to meet student needs, hiring and staffing decisions, and professional development needs and plans.

In terms of membership, this team is comprised of key school support staff (i.e., MTSS leaders) as well as classroom teachers who have been "hand selected" by the principal because of their perceived ability to "engage in productive conflict" – i.e. the ability to "really argue over ideas because we trust one another enough… [and] have strong enough relationships that we… can speak openly and honestly without it, imploding the functioning of the group." During the 2020-21 AY this team was relatively large and included a representative from each grade level to give "360-degree visibility" as to what was happening across the school. This structure was implemented because instruction was remote due to the pandemic and the principal was new and relatively unfamiliar with the staff and their needs at that point in time. However, as the principal became more familiar with the school and as the district started to allow elementary schools to return to in-person instruction, having individuals from every grade level became unnecessary

and the challenges of running this team with so many members began to outweigh the benefits. As the principal stated:

> [T]his next year, when I knew people, I shrunk the number, because ... it never got dysfunctional [but] really in order to have good ideas you need to be challenged. And we need to be able to do that at a level that's deep. And the larger the group, the harder that is…

As such, the principal decided to scale back the size of this team for the 2021-22 AY so that it only includes seven individuals – the principal, two MTSS leaders, and two representatives for each grade-level band (i.e., K-2 and 3-5).

In relation to how this team is currently structured and functions in action, it meets monthly and essentially "sits-in" for one of the required bi-monthly School-Based Leadership Team (SBLT) meetings. The general structure of this meeting is less formal than the SBLT, which is governed by specific rules of engagement and procedures (i.e., processes similar to formal government proceedings or Robert's Rules of Oder). At this school, the ILT meetings open with a chance for grade-level representatives to share general questions and/or concerns from their teams about how things are going at the classroom level and then move on to agenda items set by the "core" leadership team that that warrant discussion.

In terms of the scope and scale of the decisions made on this team, it seemed as though the direct decisions made by this team tend to be "quick improvements … that don't need to be voted on next month [by the SBLT]." However, the primary power of this team is in their direct involvement in agenda setting activities. Specifically, this team is intimately involved in vetting and brainstorming around key initiatives for school improvement and is also leveraged by the principal as a means of gauging if there was enough consensus around particular topics or if

particular issues have been vetted sufficiently in order to move on to SBLT for a vote. As one team member mentioned, the ILT team is crucial in testing for and gaining buy-in more broadly in the school for particular initiatives and/or courses of action. As one member put it: "…those are going to be our teachers [who] have buy-in and [who] kind of… get the critical mass going… because they're leaders on their teams."

However, some members of this team express concerns that decisions might have already been made by school leadership before they get to ILT. Some perceive this as creating situations where not everyone is "on the same page" at the outset and ILT members might fundamentally disagree with the direction/course of action up for discussion but are only able to assert their influence/power by advocating for particular modifications or adjustments within pre-established boundaries. In this way, the principal and/or core leadership team seem to be strategically setting the agenda for proposed courses of action in a way that allows for slight modifications to their proposals but are "not allow something to just go sideways or become ineffective because [they] just wanted to… have a process that looks authentic…." or more distributed and democratic in nature.

In relation to data use, one member stated that although they are moving towards more intensive data review and use on this team, "[q]uite honestly, we haven't done a lot yet with the nitty gritty numbers… where we look at, you know, where grade levels are, where particular subgroups of students are." Instead, much of that work appears to be happening within some of the smaller teams in the school (e.g., the IPS team, MTSS team, and Student Support Services Team). More generally, this team functions as a space for collaborative reflection, problem identification, intervention planning/vetting, and organizational agenda setting. As one staff member put it,

> [the principal] will often kind of throw things out at ILT first to kind of hash it out and kind of get a feel and then present it to SBLT. So, I think it's almost like a sounding board and kind of dry run.

In relation to how directly involved this team was with school improvement planning, school staff expresses that the ILT team was not very involved in that process and that they only really had one discussion about it related to the different goals that they wanted to set for the year but did not recall much of the follow-up discussions. When the principal was asked about the relationships between ILT and the SBLT, they state that they are not sure if the relationship had ever been articulated at the district level about what the relationship should be between these two teams. Furthermore, members who do not sit on both teams have little insight into whether the school's SIP goals and their progress has been followed up on during the SBLT meetings. Even though there were mixed perceptions about the degree of relationship between the ILT and SBLT, nearly all staff members who were interviewed about the overarching goals of these teams mentioned that their goals are ultimately the same or very similar. For example, one of the MTSS leads stated the following:

> I think for both teams, the main goals have been making sure that any decision that we make impacts the students effectively and successfully.... So, our first mission is to serve our students, and the best needs for our students and so all of our decisions are based through that. But then, also, we have to make sure that we're taking care of us as staff and looking after them. So, for me I think, for both teams, it's just that. It's just looking at what's best for students.

School Based Leadership Team (SBLT)

In general, the School Based Leadership Team (SBLT) focuses on addressing and monitoring progress towards the school improvement planning goals as well as addressing any local schoolwide issues, which were typically identified and brought forth by the ILT. As one individual put it, "we work together on school-based issues, but then also our school improvement plan through the district." As such, this team functioned to some extent as a means of internal accountability and helped "[make] sure that we're responsible for and taking those action steps to meet the goals" on the SIP plan.

The SBLT is more formal than the ILT such that much of the structure and functioning of this body is dictated by state statutes and district mandates. In terms of membership, the SBLT is comprised of elected representatives from each grade level, school support staff (i.e., EC teachers, MTSS leaders) and parents/guardians. However, in practice, the extent to which parents/guardians participate in this process is unclear. Furthermore, some of the goals that the school improvement plan must address are required by the district (e.g., student achievement gaps in achievement and growth on the end-of-grade standardized state assessments, attendance, etc.). Regardless however, based on members reports, many of the annual targets set for the goal areas at the school are at the discretion of the school's staff and are not specifically mandated by the district. For example, one member mentioned that although the district required there to be an attendance goal within schools' improvement plans, they had discretion about how to handle this issue. For example, they sought to address their attendance goal by delivering remote reading instruction daily that could be available to students who are absent as a result of the pandemic and quarantine requirements.

In terms of how progress is made towards the specific school improvement planning goals, one of the MTSS leads notes that this team tends to work in a "divide and conquer" manner based on the school and district priorities and deadlines. However, other reports by school staff indicate that prior attempts to assign school staff to work on particular teams within the SBLT have not been successful due to lack of buy-in and personal interest in the initiatives that some of the groups focus on.

Reports from the principal suggest that the SBLT is not functioning as they would like. Specifically, when describing their vision for the team they state:

> The way I would like to see it work is that you've got distributed leadership, are there small teams of folks who are doing the work of the school improvement plan, and they are then sort of reporting back to the SBLT and asking, you know, when they... where they need decisions and guidance, they [ask] SBLT.

Furthermore, when asked about the purpose of the SBLT team at their school, one of the key leaders in the school states the following:

> So with the larger SBLT… it's a requirement that every school have one. So I've never really thought about why we have to have one, we just have to. But I feel like our principle in particular is really good about communicating that the purpose of any discussion needs to be how does this impact students? And how does this improve outcomes for students?

Professional Learning Communities (PLCs)

Grade-level PLCs are held weekly to discuss grade-level concerns, develop lesson plans, and implement specific action steps that were related to the school improvement planning process. In addition to traditional grade-level PLCs, which come together for planning and to

identify/address grade-level concerns, last year this school also created a "Get Better" PLC that engages in instructional rounds or walkthroughs (i.e., intentional observations of classrooms during instructional hours for reflection and improvement). Not only do these types of PLCs allow for more detailed and targeted reflection on the part of classroom teachers as they participated in these sessions and attended to particular aspects of instructional practice (e.g., student engagement, student or teacher discourse, etc.) but the information from these walkthroughs is also brought to the ILT to determine the extent to which particular challenges exist across grade levels and/or subjects. On these teams, the two MTSS leads are instrumental in facilitating the instructional rounds, preparing for upcoming assessments, and reviewing student work and assessment performance alongside classroom teachers.

School and Team Cultures

In terms of the culture, this school is trying to move away from a culture that staff perceive to be focused on complacency and compliance and towards one that is more actively reflective and empowered. Furthermore, although many staff at Case 2 mention the value of being heard or giving voice to the perspectives of their peers when participating in leadership teams (i.e., ILT and SBLT), there is still a sense that not all individuals feel comfortable sharing their opinions openly among their colleagues. The administrative team is relatively new and the staff is still acclimating to how they operate and is still getting comfortable with taking them up on opportunities to share candid feedback. As one of the MTSS leads states: "I can feel hesitancy… I can feel that someone doesn't feel good about something but they're not saying anything, even though they have the opportunity to say something."

Impacts/Decision-making Power of School Leadership Teams

The main impacts of the school improvement planning processes and associated teams (i.e., SBLT and ILT) mentioned by school staff are the increased visibility this process provides about what was happening in across the school and the ability for these processes to serve as a forum for sharing and considering staff perspectives as a part of local decision-making processes. Several members of school leadership teams highlight the value of sharing the perspectives of their colleagues in an anonymous and low-stakes ways that allow them to share the "real pulse of the school" with administration in ways that are informative and productive. In this way, formal and informal information that is shared during these meetings become instrumental in building institutional knowledge and communicating the rationale behind decisions that are made at the school level. As one staff member put it:

> [W]hen you're within your classroom… you don't really get to see or know what's happening within the building… so having some more sets of eyes and… having those discussions about what is happening can definitely better us as an entire school… and so them [i.e., the principal and MTSS leads] gathering that data and just kind of presenting us with those graphs and different things like that… It's given us a more visual picture of what's happening in the building

In terms of the more 'direct' impacts of the various teams, some school staff believe that the most tangible impacts are occurring "especially the smaller teams like [the Individual Problem Solving team], ILT, [Social and Emotional Learning team]…. I think those teams are where some real productive conversations are happening, and where real decisions are being made specifically about kids."

School Improvement Planning Goals

Although the district sets specific parameters for all improvement plans and specifies the nature of the goals schools should be setting, every school in the district is given some flexibility in determining the specifics of their own goals. The goals established by Case 2 on their school improvement plan focus decreasing chronic and moderate absences; increasing annual student attendance; increasing the proficiency of Black and Hispanic students to reduce achievement gaps in math and reading; increasing their school's overall composite SPG; and ensuring all general education teachers participate in a certain number of capacity building experiences.

Data Sources and Information Leveraged in Decision Making

The data leveraged at this school is organized into the following three categories: (1) assessment data, (2) administrative data, and (3) locally constructed or informal data. Table 8 shows an overview of the nature of these data sources and associated tools and infrastructure organized by data type and MTSS goal areas, where applicable.

Table 8. Specific Data Sources, Tools, & Infrastructure by MTSS Goal Area at Case 2

Data type	MTSS area	Data source specifics	Data tools & infrastructure
Assessment data	Academic supports	• State Standardized End-of-Grade and Beginning-of-Grade Assessments • District-Developed Interim Assessments • National Benchmark Assessments • Progress Monitoring Assessments • Classroom, curriculum-embedded assessments	• Vendor Reporting Dashboards • PowerSchool, Performance Matters (Interim Testing Platform) • Longitudinal standards-based performance data trackers for classroom assessments • School's Power BI Data Console Dashboards: ➢ Historical Data ➢ Performance ➢ ReRostering

Administrative data (cont.)	Attendance supports	• Records of Student Attendance	• PowerSchool, Student Information System
	N/A (Managerial Decisions)	• Student Information (i.e., behavior records) • Student Information (i.e., Demographics) • School Information (i.e., student mobility, enrollment) • Teacher Information (e.g., race/ethnicity, years of experience) • Longitudinal TWC Results (School, State and District)	• School's Power BI Data Console Dashboards: ➢ ReRostering • School's Power BI Data Console Dashboards: ➢ ReRostering ➢ Student Information ➢ Teacher Information ➢ Teacher Working Conditions
Locally constructed or informal data	Academic &/or Behavioral supports	• EC Support Data (i.e., nature of support, provider, minutes per week) • MTSS Implementation Data	• School's Power Apps: ➢ Supplemental & Intensive Tracker • School's Power BI Data Console Dashboards: ➢ EC Caseloads
	Behavioral (SEL or PBIS) supports	• Daily Student Behavioral Goal Attainment Data (i.e., Daily Check-in Check-out Records)	• School's Power Apps: ➢ Check-in Check-out (CICO)
	N/A (Managerial Decisions)	• Anonymous Staff Surveys • Informal Staff Feedback	• Online Platform (e.g., Google Forms) • ILT and SBLT Meeting Discussions

The following sections describe how these sources are leveraged in decision making as well as specific systems and structures in place at this school to support the collection, analysis and interpretation of this data so that it could be leveraged as a part of decision making.

Assessment Data

Interviews and observations highlighted the multitude of data derived from formal, standardized assessment and their uses depending on the nature of the assessments and the type of information they provided to educators. Specifically, school staff liken end-of-grade (EOG) assessment results to "autopsy" information and only use these results on occasion. Specifically, review of school documents suggests that EOG data is primarily used by administration for two purposes. First, it is used along with benchmark assessment results when creating class rosters to ensure relative balance in the average achievement of students across classes within a grade level. The other main use for EOG data at Case 2 is for looking at trends in student outcomes as a part of the needs assessment process, which is conducted by the principal at this school in order to set the course for the school improvement plan and to set performance goals for the next year based on cohort performance during the prior school year. The next source of assessment information that is used come from benchmark assessments (i.e., NWEA MAP math and reading assessments) and diagnostic assessments (i.e., DIBELS reading assessment). Although these two types of assessments are not intended to provide exactly the same information, generally speaking they are used during the comprehensive data review PLC meetings to identify students who are struggling and might require additional support services. They are also used to group students into small groups for differentiated instruction. Although all schools are required to administer district-developed interim assessments in grades 3 – 8 via a platform called Performance Matters in PowerSchool (i.e., a district-wide data system), there is little mention of how exactly data from these assessments were used. In relation to progress monitoring data, the collection and review of this data is embedded into the instructional materials used for supplemental and intensive supports. Finally, several teachers mention more formative,

classroom assessments that are conducted via “exit-tickets” at the end of lessons. This type of data is intended to be used by classroom teachers to identify classroom trends in proficiency on particular skills and standards so that they can adjust their instruction accordingly and comply with new grading polices at the school for proficiency and skill-based grade reports. Classroom-embedded assessment data is not widely used in a systematic way but school leadership is in the process of developing tools that is intended to facilitate wider use of this data for planning and reporting student performance outcomes.

Data Tools & Infrastructure for Assessment Data

The majority of the data tools used at this school are designed to help classroom teachers and school support staff use data from formal diagnostic and interim/benchmark assessments. Generally speaking, school staff report using various dashboards and platforms provided by the developers of these assessment programs one at a time to make sense of both individual and group performances. Although the district does provide the Microsoft Office suite of software that can be leveraged to process, display, and warehouse data, the impetus for leveraging these tools to triangulate across data sources and transform various data points into actionable information seemed to fall on school staff. However, the principal has a vision for a more comprehensive and integrated data infrastructure that they are in the process of developing for their school. As the principal put it:

> …it's like if there if there's... 19 sources of data, they're in 18 different places. And so the literacy is just not there for teachers to go and grab all of those places, and put it together and aggregate it and then you know... Not happening. So what I'm trying to do, and it's just fortuitous for me that the tools I've developed to this point (Power Apps, Power BI, and SharePoint) are all at a place now where I can do a lot of the nerdy stuff. So all the

> teacher has to do is come in and pull up a Power BI, or interact with the staff portal in some way.

Although the district does have a department that specifically focuses on helping schools combine data from multiple sources and display it in meaningful and useful ways, there was little leveraging of this resource at the school level. Specifically, although the district has setup a central repository for a lot of the data this school reviewed in a platform called PowerBI, one of the MTSS leads feels like it is not updated frequently enough to be useful and prefers to just pull the data themselves from each of the individual sources so that they can be sure it is the most recent information they have on student performance.

As previously alluded to, one of the main goals on the horizon at this school is to establish more formal systems and structures that will support teachers in tracking and utilizing information from classroom data. One of the main drivers of this goal is the transition from traditional grades to proficiency-based reports, which provide ratings of student proficiency on a scale of 1 to 4 for all of the skills students are working on during a particular quarter. Essentially this policy requires that "…nothing goes into a grade, at all, except for assessments of [students'] proficiency. So, if a kid does not turn something in, you just don't have evidence of proficiency. You don't give that kid at zero." However, as staff note, for teachers to be able to report student grades in this way, they must fundamentally alter how they are planning their lessons and assessing students within their classrooms and there also must be infrastructure that makes the collection of proficiency evidence on the targeted skills feasible. In relation to other impacts this policy has, the principal indirectly highlighted the need to increase educators' assessment literacy and ability to interpret the meaning of performance patterns as they grade classroom assessments like end-of-lesson exit tickets. As they explain:

> You'd like to see… differences in the way that you write assessments (if you're having to write them) or you grade them. If I've got three standards on a [four question] math test, I shouldn't just grade number one, number two, number three, number four - you got three out of 4, 75%. [Instead] I should be looking at: On this first [question], there are three different standards. You got two of these right. You got the wrong answer, but you did two of the standards right. So, it's just that third one that you didn't get, right? So that's that that's a difference in how you're assessing exit tickets. You want people to begin to [ask]: Okay, what is this telling me about this important standard?

In relation to the use of such tools, based on staff reports, last year staff was required to use a "math tracker" to aggregate student performance data from exit tickets. However, most of teachers' engagement in this process was focused on "compliance use" and less on how to leverage this information to inform instructional decisions related to lesson planning and pacing. There is also acknowledgement from the principal and MTSS leads that moving towards more meaningful uses of this data would require a lot of forethought and planning. School leadership acknowledge that "…getting classroom information the way we would want to get it, without making the people who have to collect that information feel like they're going to go insane" is going to be a huge undertaking that will require a lot of time and resources to be successful.

Administrative Data

Several administrative data sources are used at this schools to provide information about students, school staff, and working conditions. The first source, attendance data, is used to look at student attendance, trends in chronic absenteeism across the school, and to evaluate the extent to which the school had met their attendance goal stated on their SIP plan. The other sources of data consist of student information that is typically held at the district-level but has been

reconstituted at the school level to provide information for managerial decisions. For example, information about student enrollment trends and staffing from the district as well as school climate and management information from the Teacher Working Conditions (TWC) Survey are reviewed by the principal as a part of the needs assessment. Furthermore, student demographic and behavioral incident records from the district are used to help create of classroom rosters that are balanced in terms of student demographics and prior behavior incidents.

Data Tools & Infrastructure for Administrative Data

Beyond assessment-focused data systems, the school also has an extensive number of dashboards that the principal has created in Power BI to use administrative data for attendance supports and management-related decisions. Specifically, staff at the school have access to a dashboard on a team site that is used to track student attendance as a part of their Positive Behavioral Interventions and Supports (PBIS) intervention at the school. Although available to all staff through their "Data Console", several of the dashboards (i.e., ReRostering, Student Characteristics, Teacher Characteristics, and Teacher Working Conditions) the principal and administrative team primarily access these during class rostering and data review for the comprehensive needs assessment. Details about the information in these dashboards is included in Appendix D.

Locally Constructed or Informal Data

There are also several sources of locally constructed or informal data that are used by staff. One of the primary data sources in this group are the daily behavioral outcomes that are collected by teachers as a part of the "Check-in Check-out" (CICO) initiative. This initiative provides students with the opportunity to "check-in" with staff mentors who they have positive relationships with at the start of the day to and determine daily "game plans" or behavior goals

that they will try to meet, and "check-out" with their mentors at the end of the day to discuss how they did. If they met their goal, students receive rewards and praise; if not, they receive positive encouragement and/or support. Staff reports suggest that this data is used regularly by school staff, and the SEL team in particular, to monitor student progress in relation to their Positive Intervention and Support (PBIS) goals. Another locally constructed data source related to MTSS implementation is the Supplemental and Intensive Tracker Power App, which was used to document both academic and behavioral supports and interventions. Finally, many of the staff interviewed note the important role that informal feedback data plays in "[getting] a pulse on how things are going for grade levels" and in the overall decision making processes on ILT and SBLT. Finally, the principal appears to be instrumental in actively encouraging staff to provide regular informal feedback, especially during ILT meetings. For example, the principal mentions that in the past they have required staff to identify a certain number of potential issues in initial proposals (i.e., essentially "poke holes") before the team can move on to the decision making processes/voting or switch gears to other issues on the agenda.

Data Tools & Infrastructure Locally Constructed or Informal Data

Staff primarily uses a combination of Power Apps, Power BI Dashboards, and surveys developed by the principal to collect this type of data. Specifically, the EC Caseload dashboard is used to document the nature and duration of supports for each student each week. Furthermore, in relation to Power Apps, the Supplemental & Intensive Tracker is designed to document MTSS supports in general and the CICO Application is used to record and monitor the daily behavioral records of students receiving this type of PBIS support. In relation to staff feedback, the majority of this information is garnered informally via discussions either at school leadership team meetings (i.e., ILT or SBLT), PLCs or through informal discussions between staff and their

grade level representatives about particular concerns. However, some staff report that anonymous online surveys have also been used by the principal and leadership teams to solicit more candid feedback on school-wide decisions that are expected to have immediate or notable impacts on the work of educators or instruction of students (e.g., changes to the school's comprehensive schedule).

Data and Assessment Knowledge and Capacity

The prior experiences of school staff, and school leadership, with various assessments is a key factor in the capacity for educators to use the information from the district-mandated assessments. Specifically, one of the MTSS leads expressed that they feel confident in their ability to use the results of DIBELS (a diagnostic reading assessment administered to K-3 students) to make instructional decisions because of their professional experiences using this assessment information previously as a classroom teacher and coaching teachers to use this assessment to group students and plan lessons. However, this same individual feels less sure about how to support teachers in their use of newer benchmark assessments adopted by the district. Although the results from this new assessment "seem[ed] like a wealth of information" and the district provides some guidance about how the results should be interpreted and used, much of the groundwork about how to use the results of these new assessments to inform instructional decisions is left up to school leadership and key support staff. As this MTSS lead recounted, the impetus is on them to take on the time-intensive process of "digging" into the assessment design and results with other "thought partners from different schools that [they've] known for years" to figure out what types of reports can be run, how the information relates to other assessment information, how that type of information might be helpful to teachers, and

how to design PLC activities to model their thinking and guide teachers through the process of making decisions with this data for their particular students.

Data Valuing and Capacity Building

School administration at Case 2 clearly value instrumental uses of data and are actively working to develop the capacity of school staff so that they can more actively engage in this process. For example, one of the MTSS leads outlines their vision for more routine and embedded data use in the following way:

> Well, I think that it's teaching teachers to be to, you know, to analyze what they see, and to respond. That's my, you know, that's my number one goal, I want responsive teachers who see, you know, collect data all the time, and then see it and respond to it. And that's how, you know, that's how we improve learning for students.

This individual also mentioned how the ILT team will be instrumental in this process by "planting the seeds at grade levels and doing some grade level leadership." However, much of the capacity for data use and tool use primarily lies at the classroom or PLC level and does not connect these to data use for school-wide decision making and the SIP processes.

Case 2 Summary & Key Points

Case 2 is embedded in a rural, Title I elementary school with an experienced, but relatively new, leadership team that is actively engaged in changing the school culture and promoting more consistent and streamlined data use practices in the school. The principal has been the driver for much of the change at this school and is actively engaged in promoting more candid and critical discussions at the school, most notably on the Instructional Leadership Team (ILT). At this school, the ILT serves as the main forum for discussing and vetting school improvement strategies and initiatives before they are sent to the larger leadership team for a

vote. During the pandemic, which was also the principal's first year at the school, this team was larger so that it could provide more visibility about what was happening across the school. However, since schools in the district have returned to in-person instruction, the team has been limited to the principal, the two MTSS leads at the school, and two representatives from each of the grade-level bands (i.e., K-2 and 3-5). The smaller team is intended to promote more active engagement and critical reflection and partnership among members. Furthermore, the individuals on this team were selected by the principal due to their perceived ability to engage in "productive conflict."

In relation to school improvement planning, the ILT team and the "core" administrative subset of this team (i.e., the principal and MTSS leads), primarily identify problems that need to be addressed and then brainstorm potential solutions before bringing them to the larger SBLT team for further discussion and for a vote, if necessary. The focus of this team is primarily on managerial decisions and professional learning opportunities for teachers. As such, the official school improvement plan seems tangential to their main objectives. In relation to the formal processes for school improvement, the principal and key support staff appear to take the most direct role in this process through the completion of the Comprehensive Needs Assessment and FAM-S at the end of the year. However, much of the focus at this school as it related to data use is on how to assist teachers in making instructional and grouping decisions for supplemental and intensive supports based on formative assessment results and/or progress monitoring. Furthermore, at this stie the principal is actively engaged in creating tools and resources for teachers to use to document support needs or track student progress (i.e., the Check-in Check-out Power App established for the school-wide PBIS support initiative) and is in the process of developing more tools that educators can use to leverage classroom assessment data (e.g., tools

for logging lesson exit tickets to look for trends in student understanding/proficiency and to support the school's new grade reporting polices). The school's core leadership team is acutely aware and actively working on building capacity in the school to support the use of such tools.

CHAPTER V: FINDINGS

Identified Themes

The purpose of this multiple case study was to explore the relationship between data-informed decision making (DIDM), evaluative activities, and evaluative thinking within SIP teams at two moderately sized, Title I elementary schools in a relatively large school district in North Carolina. More specifically, this study explores the relationship between evaluation practices and thinking and school improvement efforts through the lens of data use practices within school improvement planning teams. As such, the following research questions guide this study:

1. How do individuals and groups at the school level (i.e., classroom teachers, school support staff, as well as school administrators) engage in and use data to support School Improvement Planning (SIP) processes?
    a. What are the mediating factors that influence this process?
2. What is the relationship between school improvement efforts and evaluative thinking (i.e., situated, systematic, principled, and critically conscious reflection on the valuing processes enacted to arrive at evaluative judgements or decisions)?

The table below (Table 9) outlines the key themes and categories derived from the two case studies based on staff interviews, meeting observations and a document review. The themes and categories shown characterize what is happening within school improvement planning teams (i.e., SIP activities and functions) and how these activities and functions are being impacted by local context and adaptation processes.

Table 9. A Thematic Summary of Research Findings

Categories	Themes/Factors
A. SIP Activities & Functions	i. Engaging and Situating ii. Identifying Problems or Opportunities iii. Gathering and Interpreting iv. Generating and Selecting Solutions v. Recommending and Informing vi. Implementing and Sustaining
B. Contextual Influences	i. Social and Historical Context ii. Leadership Philosophies and Practices
C. Local Adaptation Strategies	i. Institutional Policies and Mandates ii. Data Tools and Infrastructure

A. School Improvement Planning Activities and Functions

Activities related to the school improvement planning processes at these two case study sites were grouped into the following themes: (i) engaging and situating, (ii) identifying problems or opportunities, (iii) gathering and interpreting, (iv) generating and selecting solutions, (v) recommending and informing, and (vi) implementing and sustaining.

A.i. Engaging and Situating

One way that SIP-teams engage in comprehensive assessment is through their efforts to engage a variety of stakeholders from within the school and broader community. The structure of these teams, as established in state mandates and local team by-laws, specifies that representatives from school staff who hold different positions within the school and community members who are reflective of the enrollment of the school, should serve on these teams. Across both sites, members of these teams highlight the value of transparency and perspective sharing that is a result of the variety of different member backgrounds and vantage points. SIP-team members at both sites also report that one of the primary advantages of the school improvement

planning process is its ability to facilitate a better understanding of what is happening across the school, as well as an understanding of how particular decisions or actions might interact with and impact the roles of various stakeholders within the school community. As one of the members explained:

> It definitely opens your eyes, because… you may not know what's going on in the school from you just being in your classroom, but listening and talking with other teachers, as well as the principal and [school support staff] allows you to be more aware of what's going on.

Multiple SIP-team members also describe feeling that the process is instrumental in promoting staff voice and influence in school-wide decisions, particularly given the shift towards more distributed or shared leadership. Although the two cases are at different stages of enacting this vision of leadership, staff at both schools nonetheless highlight the ultimate value of more widespread ownership of this process. At Case 1, a school further along in establishing a subcommittee structure for their SIP-team, the value of further engagement from the school community provides increased legitimacy for team decisions, thus enabling buy-in from the broader school community. At Case 2, the principal and school support staff expressed the belief that more authentic engagement from school staff on their SIP-team and on other associated teams (i.e., the Instructional Support Team), in the form of a "critical thought partnership" and "productive conflict," would help ensure that SIP plans and activities are well-vetted, aligned to their goals, and feasible in practice.

In addition to actively involving a variety of school stakeholders, SIP-teams also attend to the local context. For example, state guidance documents highlight the importance of assuming a "need-based approach" to school improvement planning that considers factors that are both

internal and external to the school for identifying the "root causes" of particular challenges and how they could be addressed by the school. SIP-teams then use these identified needs, as well as their understanding of current mandates and requirements, resource availability, and school climate, to further identify how their actions can promote school improvement. Although NCStar is used to document the school-developed targets of SIP-teams, as well as the specific actions schools are taking or have taken in relation to the twelve key indicators, the practices of these teams do not go as far as explicitly mapping the logic or theory of action underlying the specific initiatives or actions taken by this team.

A.ii. Identifying Problems or Opportunities

Interviews with School Leadership Team members at both sites, including state guidance documentation and reviews of comprehensive progress reports and meeting minutes from the NCStar system, suggest that the identification of problem areas to be addressed by the school improvement team occur in a variety of formal and informal ways at both school sites. To begin with, schools are required to align their school improvement planning efforts with the 12 key indicators that have been provided by the state (out of a possible 105 indicators in the NCStar system). However, it remains unclear how or why these 12 indicators were selected by NCDPI.

As noted above, problems are further identified via formal needs assessments that are required to be done by schools as a part of their school improvement planning activities. Based on the results of these assessments, school leaders typically consult with the School Leadership Team (i.e., SIP-team) members and/or Instructional Leadership Teams (ILTs) to identify specific challenges and mitigating strategies within the school improvement plan. In addition to the episodic identification of specific challenges to be addressed via needs assessments, school staff also report leveraging the work of specific communities of practice (i.e., instructional leadership

walkthroughs) as well as subcommittees on the school leadership team to regularly engage in this process. Problems or opportunities for improvement are also informally collected by the leadership teams across the two sites through staff feedback from grade level or staff representatives, as well as through regular "pulse checking" and through informal discussions.

A.iii. Gathering and Interpreting Data

Although there is a lot of data collection and interpretation occurring at both case study schools, only some of this is done specifically to evaluate the school improvement planning process. Although NCDPI guidance documents state that SIP-teams should be engaging in the evaluation of their actions via a "continuous process" that captures both the objectives and progress of their actions, the only comprehensive reflection on the effectiveness or success of current SIP-related activities occurs only once during the school year when SIP-team members complete the FAM-S (i.e., a 41-item facilitated group assessment of the extent to which they are enacting key MTSS practices at their school). It is important to note that there is also a lack of one-to-one alignment between the 41 FAM-S items and the 12 NCStar indicators, as shown in Figure 6. See Appendix D for the full crosswalk.

Figure 6. Reproduction of Selected Portion of the Facilitates Assessment of MTSS – School Level (FAM-S) – NCStar Key Indicator Crosswalk from NCDPI (NCDPI, n.d. b, p.1)

FAM-S Item ↓ NCStar Key Indicator →	A1-07	A2-04	A4-01	A4-06	A4-16	B1-01	B1-03	B2-03	B3-03	C2-01	C3-04	E1-06
Leadership 1							X					
Leadership 2							X					
Leadership 3							X	X				
Leadership 4												
Leadership 5												
Leadership 6							X			X		
Capacity/Infrastructure 7												
Capacity/Infrastructure 8										X		
Capacity/Infrastructure 9										X		
Capacity/Infrastructure 10	X	X							X	X		

During the FAM-S assessment process, schools are expected to leverage information they have entered into the NCStar system throughout the year in relation to the 12 key indicators to assist them in rating themselves on the FAM-S item of interest. Principals at both case study sites make clear that most of the information for these ratings comes informally from the professional reflections of individual staff members, with variations in individual ratings discussed until consensus is reached. Principals also planned to use information from the FAM-S assessment to identify specific items that they will focus on the following year. While one of the principals reported that they were still identifying priorities, the other noted that they had selected three items that aligned with their main priorities, and where they considered there to be the most "dissonance" between what they were doing and what they should be doing. Seen in this light, the FAM-S is assuming a formative assessment role, similar to the comprehensive needs assessment, and is providing a framework within which schools are identifying key challenges or areas for improvement. Beyond the FAM-S, interviews with SIP team members suggested that there are few systematic data collection activities in place to monitor the implementation of SIP initiatives in ways that could inform modifications or future SIP-related activities. As a result, information that could be useful to inform future SIP- or MTSS-related initiatives is not being systematically collected or documented within these contexts.

A.iv. Generating and Selecting Solution(s)

The nature of the processes used to generate and select potential solutions to perceived challenges is more apparent at Case 2 than it is at Case 1. The principal at Case 2 regularly uses the Instructional Leadership Team (ILT) as a sounding board for potential initiatives and improvement strategies, and often calls upon members of the team to vet potential courses of action to help narrow down options that could then be brought to the larger school leadership

team for discussion and voting. Although a similar process of voting on school-based decisions is also apparent at Case 1, the initial generation and subsequent refinement of these potential solutions is not as clear.

A.v. Recommending and Informing

SIP-teams also serve reporting and communications functions within the school, specifically related to their roles as communities of practice that provide recommendations for actions related to priorities, interests, decisions and/or findings. The review of documentation from schools and district-level teaming guidance suggests that the inherent structure of the larger school-based leadership teams (i.e., representatives for specific staff and community groups and overlaps in membership across school-level teams) ensures that the teams that are engaged in school improvement planning serve informally as bi-directional information sharing platforms, where representatives communicate the opinions and priorities of their constituents in a bottom-up manner. On the other hand, meeting summaries (e.g., final voting results and administrative decisions about the courses of action that will be taken) are shared in a top-down manner. At Case 2, this representative structure is also a key feature of the smaller, Instructional Leadership Team (ILT), the place where most of the agenda setting for school improvement priorities occurs. As previously noted, the school leadership teams that oversee the school improvement planning process are intended to serve in an advisory capacity to the principal, who holds the ultimate authority for budgetary, instructional and managerial decisions. At Case 1, the larger school leadership team and its associated subcommittees are actively involved in serving this advisory role, whereas at Case 2, the advisory role is mainly assumed by the smaller, Instructional Leadership Team (ILT), and then confirmed by the larger school leadership team.

A.vi. Implementing and Sustaining

The final group of activities that school staff engage in to support school improvement efforts are those related to implementing and sustaining specific initiatives, strategies or policies. Much of the documentation input into NCStar as a part of the school improvement planning process consists of specific action items related to making progress towards more complete or effective implementation of the 12 key indicators. The NCStar system also enables specific individuals on the team or school support staff to be put in charge of each of the activities. At Case 1, staff reports indicate that subcommittees are created around key activities. As the principal notes, this subcommittee structure is related to the main goal areas targeted by MTSS to help ensure that progress is consistently being made on each of the various facets of the MTSS system. At Case 2, the principal outlines a different strategy to leverage communities of practice as a way to promote the sustainability of the SIP team initiatives and plans. According to the principal, when new school-wide initiatives are considered, the extent to which members of the ILT team buy-in functionally serves as a litmus test and informal indicator for how it might be received by other staff. By first running new school improvement strategies through the ILT at Case 2, the hope is that this will ensure that when new initiatives make it to the larger School Based Leadership team, there will be enough momentum to be sustained.

Factors Influencing School Improvement Planning Processes

The two cases explored in this study highlight the critical role that context plays in shaping how educators and school leaders use data in practice to support school improvement efforts. Furthermore, interviews suggest concerns with time, feasibility and other resource considerations are paramount for decision making at both schools. Specifically, the interviews, observations, and documents included in this study highlight how key contextual factors shape

how data can be leveraged for school improvement purposes. Findings also suggest that institutional policies and mandates, as well as data tools and infrastructure, are adapted and augmented to serve local needs and interests at the school level.

B. Contextual Influences

Although the two case study schools are in the same school district and are categorized as recurring low-performing and TSI-CU schools, local factors and contextual realities lead to notable differences across the two sites in relation to how data use practices unfolds to support school improvement activities. Of particular note is the social and historical context of the schools, as well as the leadership philosophies and practices of school principals.

B.i. Social and Historical Context

School improvement planning and data use in schools cannot not be understood in isolation. Instead, they should be understood as processes that engage the individual and collective knowledge and experiences of educators and educational administrators as a response to the exigencies of the local context (e.g., school climate, instructional resources, content standards, curriculum guidelines). As highlighted by one staff member at Case 1, the challenges faced by schools are reflections of larger, systemic challenges that have residual effects on the schools' needs, climate, and culture. As this staff member stated:

> There needs to be a lot of community change if you want to change a school … It's not just what's happening in the building, it's what's happening outside the building… You know how [widespread] poverty in our school is… There has to be something done with that. Not necessarily more ruling academics, more rules and procedures, and more of this and more of that. It takes something from the outside.

As such, all data use practices within these schools are embedded within school climates and are intimately intertwined with the needs and challenges of the local community as well as the broader school system. In the two case study schools, challenges related to poverty, teacher turnover, student dis-engagement and learning loss can be seen as artifacts of larger challenges being faced by these school communities, all of which impacts the school culture and climate.

Also, in both cases the effects of the pandemic could not be overlooked. These cases studies were conducted during a time of much change and turmoil in our society, an experience felt even more acutely within our educational institutions. Although educators have become somewhat accustomed to seemingly constant change as a result of the regular introduction of new policies or interventions, the foundational shifts in the educational landscape during the pandemic have led to notable challenges in staff retention and morale. As a result, administrative leadership at both schools have to carefully consider staff turnover and low morale before burdening staff with even more work related to school improvement planning. As one teacher put it:

> Teachers, I think across the nation, feel that we're... our job descriptions have completely changed. And so we are doing a job that we did not sign up to do. And so keeping teachers motivated and excited to come to work, and excited to be in a space where their job looks completely different from what they want it to look like is hard.

This feeling of uncertainty and burn-out is also echoed by staff at both sites and has had a notable impact on how willing and able educators are to engage in school improvement efforts, in addition to how and in what ways members of the SIP teams across these sites engage with data. At Case 2, the principal believes teachers are neither ready nor willing to engage in more in-depth reviews and analyses of data. As a result, they do much of the heavy lifting related to

data use by providing summaries and findings to the school leadership team for comments and feedback. Furthermore, they have assumed the responsibility for establishing systems (i.e., the school's Data Console) to integrate multiple sources of data and generate data visualizations and reports to provide to school staff for review. Although this principal hopes to one day build more data and tool literacy among school staff, right now the predominant feeling that staff are overwhelmed makes more active data use on the part of school staff and leadership teams a longer-term goal. At Case 1, similar decisions are being made as the principal focuses on promoting data use in ways that were not overly burdensome for staff. Specifically, Case 1's principal focuses on strategically integrating data use activities for school improvement purposes with staff positions at the school. They have also embedded capacity building into the SIP or Leadership Team meetings by modeling how to engage in data-informed decision making in this context. Taken together, these patterns suggest that leadership at both sites are operating under the assumption that data use practices must be integrated into staff's existing work in order to be sustainable, and as a cogent way to prevent it from being perceived as burdensome.

Another key aspect of the school's context that impacts data use in school improvement planning efforts are the support needs of the student population. Historically, the student populations of both schools have performed below state and district averages on standardized achievement tests. At Case 1, however, behavioral and social-emotional support needs are perceived to be the most important student support need and are considered to be a root cause of the historically low academic achievement. As such, at Case 1 support staff is readily available to assist students with behavior or SEL support needs and much of the local data collection and use is leveraged in service of behavioral interventions and supports. The emphasis at Case 2 is slightly different. Although behavioral data and interventions are also a key focus, there is more

emphasis on building data systems that can better facilitate teachers' use of classroom data to identify students who are struggling academically and provide teachers with actionable and timely information to determine how they might be able to provide additional support either during whole class or small group instruction.

Findings from both sites also bring attention to the importance of building a culture and community of trust within the school. Specifically, the necessity of building communities of practice (e.g., PLCs, ILTs, the SIP team or School Leadership Team) that are actively engaged in data use to support school improvement. At Case 1, the principal notes the importance of the MCL's really building trust with the teachers they are coaching as a way to ensure that they can have more effective and productive data discussions during their grade level PLCs. The impact of trust and transparency also extended to informal feedback data that was collected at both sites and the "productive conflict" that the principal at Case 2 was actively trying to cultivate with the school leadership teams. Furthermore, according to the principal from Case 2, the climate and conditions under which teachers are asked to leverage data to reflect on their practices are essential to the success of such activities and interact with the data use tools and structures in place. For example, when asking teachers to engage in the often 'nerve-racking' practice of data review and critical reflection, the principal at Case 2 believes that it is essential for the tools used in these process to be reliable and intuitive so that they do not become another barrier to the process. According to the principal:

> They're already putting themselves out there to use it [i.e., the data tool] … it makes them nervous as heck. Any of that, like when you're checking for understanding, it's way too much like, "Oh... this is too much reflection of how good I am. I don't know if I can stand this or not.

B.ii. Leadership Philosophies and Practices

In the two case study schools, leadership philosophies and leadership practices have profound impacts on how data is understood and used. It is important to note that district principals have the legal authority to make critical budgetary decisions related to staff development, instructional materials, and staff positions. As such, the extent to which the SIP team and other school staff can have an impact on how decisions are made at the school level, as well as their willingness to engage in this process, depends almost entirely on the willingness of individual principals to sincerely seek out new information by considering the use of input and feedback for decision making.

To support school improvement efforts, principals at both case study sites have expressed a desire for more distributed leadership within their schools, and for more active engagement from school staff in the regular review of data to support problem identification, agenda setting, and decision-making processes on the SIP teams. Both principals also believe that establishing smaller teams or subcommittees on their SIP teams is essential for improving the functioning and sustainability of school improvement efforts.

The extent to which this vision has been realized and the specific strategies adopted to promote distributed leadership varies across the sites. At Case 2, the principal makes an effort to promote collaborative decision making and data review practices within the ILT, adopting a more targeted means for developing leadership and data use capacity on smaller teams before attempting to promote changes to the larger SIP team. Despite slight leadership differences, both principals acknowledge that more distributed leadership and data use practices will require both capacity building and a willingness on the part of the SIP team members. Both also express apprehension and doubt about the willingness and ability of staff to take on additional

responsibilities in an already challenging and ever-changing educational landscape. In many ways, the principals acknowledge that commitment to distributed leadership will require them to tolerate short-term inefficiencies and growing pains as team members develop new skills and assume new leadership roles; however, they also believe that these temporary setbacks have the potential to improve and sustain data use for school improvement planning in the longer term.

Finally, the functioning of the SIP teams at these sites suggest that data use practices is are impacted by the prior experiences and expertise of the school principals. At Case 2, the principal's background in education technology led to the creation of novel data tools and systems. At Case 1, the principal's background in educational leadership and extensive practical experience as a teacher, curriculum facilitator and district level coach who previously involved in supporting other schools with their school improvement plans, was apparent in the focus on building teacher leadership capacity and instructional decision-making skills through the school improvement planning process and through other communities of practice within the school.

C. Local Adaptation Strategies

Findings from the two case study schools suggests that how SIP teams interact with data and how it is leveraged to support school improvement efforts is intertwined with larger social, political and institutional realities at the school, district, state and federal level. Findings suggest that data use practices in schools are artifacts of how institutional mandates and governance structures, as well as data systems, tools and infrastructure, have been adapted and augmented to support local school improvement planning efforts.

C.i. Local Adaptation of Institutional Policies & Mandates

Although contemporary accountability policies at the federal level set the stage for many data use practices that occur within schools and educational institutions, many of the key features

and foundational aspects of school improvement planning processes within schools are based on mandates and governance structures that are established at the state and district levels. For example, the state has mandated that all schools implement the MTSS framework (NCDPI, 2016b), with district training materials developed to assist with the implementation of this framework outlining specific team structures and responsibilities to support MTSS activities. While some aspects of the decision-making and governance structures are prescriptive, others offer flexibility and discretion to schools. For example, although every school in the district is required to have a school leadership team with representation from school administration, classroom teachers, student support personnel, and parents or community members, a review of the specific by-laws for the sites would indicate that some of the details are left up to the schools. Table 10 provides a comparison of the two case study schools in terms of their membership requirements for the SBLTs.

Table 10. School Leadership Team Membership Requirements Across Sites

Professional title	Case 1	Case 2
School administrator[a]	Principal or AP	Principal or AP
School leadership and strategic support staff[a]	Multi-Classroom Leaders (MCLs)	Curriculum Facilitator
Classroom teacher representatives	Four representatives from K-5	7 representatives, one representative for each grade level PK-5
Certified support staff representatives	One Specialists representative from Media, Art, Music or PE One Instructional Support Personnel representative from Guidance, EC, Speech, EL, AIG or other certified personnel	One Specialists representative from Art, Music, PE, Technology or Guidance One Special Education representative from EC, AIG, EL or Speech Media Specialist[a]

Classified staff representative	One representative from teaching assistants, custodians, cafeteria staff and clerical staff.	One representative from teaching assistants, office staff, ACES staff.
Community members	At least two parents who are not school staff that are elected by parents of enrolled students. Should reflect the racial, geographic and socioeconomic composition of students enrolled in the school. If not, principal can appoint additional members for parents to approve.	One or two parents elected by parents of enrolled students. Should reflect the racial, geographic, and socioeconomic composition of students enrolled in the school. No mention of processed in place to ensure this is the case.

[a]Permanent team members.

In addition to differences in membership requirements, schools are also given flexibility to modify some of the specified roles on their School Leadership Teams. Although at both sites representatives generally serve two-year terms and are nominated and elected by their constituents via secret ballot, there are some differences in the chairperson and meeting recorder roles that are outlined in Table 11.

Table 11. School Leadership Team Role Specifications Across Sites

Role on team	Case 1	Case 2
Chairperson	Must be a team member Elected by team members One year term	Must be a certified staff member at the school, but does not need to be a "sitting" member of SBLT Appointed by the principal Term duration not specified
Recorder	Referred to as the "Process Manager" or "Recorder and Timekeeper" Must be an SBLT team member Serve a one-year term, depending on interest	Referred to as the "Secretary" Must be an SBLT team member Serve a one- to two-year term, depending on interest

Beyond the specific structures of these teams, the local modification and adaptation of institutional mandates and governance structures is apparent in both the espoused and enacted purposes of these teams. At Case 2, the purpose of the leadership team is relatively narrow and centers around "developing, implementing, and evaluating a comprehensive School Improvement Plan which addresses state and local goals" (p. 2). At Case 1, however, the stated purpose, functions and duties of this team are more expansive. In addition to developing, monitoring, assessing, and amending their plan, the Leadership Team is also instrumental in: (1) facilitating stakeholder engagement; (2) advancing and enacting policies and activities that promote school goals; (3) facilitating decision-making based on available data; (4) building strategic capacity to improve curriculum, climate, classroom management, communication, parental involvement, and co-curricular activities; and (5) serving in an advisory capacity to the principal in relation to budgetary issues related to staff development, instructional materials and staff positions. Although not technically required, the structure and function of the Leadership Team at Case 1 augments MTSS and SIP-related institutional policies by integrating them into the essential process and procedures for school management and decision making.

Further evidence of this difference between the sites can be seen in how these teams function in practice. At Case 1, interviews with Leadership Team members and observations of these meetings indicate that state and district mandates, as well as required governance structures, are being adapted in ways that make this team and its associated subcommittees the primary platforms for reviewing, discussing and deliberating about both formal and informal data to inform decisions related to school improvement efforts. At Case 2 the explicit connection and influence of data, outside of informal member feedback, is not as regularly discussed beyond the principal's initial needs assessment. However, at Case 2, there is indication that data

collection and use activities are happening within other teams (e.g., walkthroughs in ILT, and comprehensive data reviews in PLCs). However, it remains unclear how the data and information from these other teams relates to the work of the School Leadership Team.

There is some room for the modification or adaptation of specific requirements and mandates related to the actual SIP plans and goals. Although all schools in the district are required to work on the same 12 "key indicators" as a part of their SIP plans, the particular action items they choose and how they monitor their own progress on these indicators is largely left up to schools. However, it should be noted that some staff perceive these indicators to be somewhat disconnected from their actual practices and everyday work. As such, some of the activities documented into the NCStar system for these indicators are actually driven by other improvement strategies that are prioritized by the school as they are perceived to be better connected and aligned with local needs and the everyday work of teachers. Furthermore, schools are also allowed to establish the specifics of their SIP goal plans as long as they have met the district requirements to have goals related to achievement, narrowing achievement gaps, and improving attendance. Once the School Leadership Teams finalize their SIP goals and update their plans, they are sent to School-Support Officers who provide some feedback prior to the final approval of these plans by the district board of education. Reports from school staff suggest that due to time and resources challenges, the amount of feedback provided on goals and plans is somewhat limited and do not facilitate further discussion or discernment.

C.ii. Local Adaptation of Data Sources, Tools & Infrastructure

Of particular interest in this study are the various data tool and systems that are leveraged to facilitate data use for school improvement purposes. The two case study schools provide considerable insight into the vast differences that can emerge within schools' data landscapes as

this process unfolds, particularly within schools that have different student and staff support needs, and who are under the direction of leadership with notably different backgrounds. Similar to the implementation of institutional policies and governance structures, some specific requirements as well as general guidelines and supports for data use are imposed on the schools. Tables 6 and 8 on pages 87 and 110-111 highlight notable data sources, tool and infrastructure similarities and differences in adaptation and modification processes.

Due to district and state assessment requirements, the assessment data sources are largely identical across sites. However, the data tools and infrastructure for leveraging assessment data is notably different. In addition to pulling data from vendor reporting platforms to use during PLCs, assessment data at Case 2 is also leveraged in dashboards to assist with the creation of classroom rosters and figures for the needs assessment. The principal at Case 2 is also making a concerted effort to use their prior experience creating educational data tools to construct more classroom assessment trackers that teachers can use for more formative instructional purposes. In contrast, Case 1 has not augmented the existing district-level assessment data tools and systems. Instead, reports indicate that they are typically pulling assessment data from a variety of pre-existing vendor platforms without the extensive use of district-developed dashboards to integrate their data during their reviews.

In relation to administrative data, staff at both sites use PowerSchool's Student Information System to record and pull student attendance data, with slight differences in the use of behavioral incident data across the two sites. At Case 1, staff reports indicate that the SEL subcommittee regularly reviews records from the Incidents+ platform in Educators Handbook in preparation for the School Leadership (i.e., SIP team) and subcommittee meetings. On the other hand, source information for the behavioral incident records in the Case 2 dashboard are not

specified, and the main use of this administrative behavioral data is for rostering at the start of the year. No other administrative data appears to be leveraged at Case 1, while at Case 2 the remaining administrative data is fed into dashboards in the school's Data Console that is then used for the school's needs assessment and rostering.

The largest differences across sites' data use practices occurs in relation to locally constructed or informal data collection. At Case 1, the majority of this data is collected to support MTSS behavioral supports and is based on one main platform, ClassDojo. Beyond the use of this formal platform, staff at Case 1 have leveraged online surveys to generate a "mentor list" that can be used regularly to assist students who are experiencing behavioral or socio-emotional challenges. The "mentor list" also provides formal meeting structures for the behavioral consultant to provide feedback and recommendations regarding the schools' implementation of PBIS and SEL supports. At Case 2, in addition to providing behavioral supports, this data is used to provide information for academic and managerial or administrative decisions. Although both sites report using online surveys and formal meeting structures as facets of their data collection strategies, there is more local development and leveraging of PowerApps at Case 2 to provide specific, locally designed tools for collecting and reviewing local academic data and behavioral data from the schools CICO process.

CHAPTER VI: DISCUSSION

By design, this study was intended to be exploratory in nature and to inform future research related to how evaluative thinking may be manifest within schools to support improvement efforts. Both case study schools had been previously identified as "recurring low performing" schools and Targeted Support and Intervention schools with multiple consistently underperforming student subgroups (TSI-CU) for accountability purposes, and both had experienced leadership changes in the three years prior to the study. As such, the findings discussed in this study are derived from the specific experiences of two schools that are under notable accountability pressures to improve student achievement and growth and to close achievement gaps between race/ethnic and/or identified student subgroups. Furthermore, the pandemic added further challenges that exacerbated the pressure on schools to improve student outcomes.

Overview of the Findings

The purpose of this multicase study was to explore the relationship between evaluative thinking and school improvement efforts through the lens of data use practices within school improvement planning efforts at two moderately sized, Title I elementary schools in a relatively large school district in North Carolina. Three categories were used to organize the themes and factors identified in this multicase study: (A) school improvement planning (SIP) activities and functions, (B) contextual influences, and (C) local adaptation strategies. The first category describes six activities and functions that occurred in relation to school improvement planning, namely: (i) engaging and situating; (ii) identifying problems or opportunities; (iii) gathering and interpreting; (iv) generating and selecting solutions; (v) recommending and informing; and (vi) implementing and sustaining. The next category focuses on how the local context (i.e., social and

historical as well as leadership factors) influenced the SIP process. Finally, the third category describes how local adaptation strategies impacted local institutional policies and mandates as well as data tools and infrastructure used in these contexts.

Key findings from these categories and themes will first be discussed in relation to what they suggest about how individuals and groups at the school level (i.e., classroom teachers, school support staff, and school administrators) engage in and use data to support SIP processes. The discussion will the shift to a critical reflection on the findings to further explore the relationship between SIP efforts and evaluative thinking – i.e., situated, systematic, principled, and critically conscious reflection on the valuing processes enacted to arrive at evaluative judgements or decisions.

Key Findings Related to Data Use in the Context of School Improvement Planning

Key Findings Related to Both Sites

Several factors related to individual and collective attitudes, beliefs, and priorities influenced how data was used to inform decision making at both schools. The most apparent of these were the formal SIP-related activities school staff felt compelled to complete, including: conducting the CNA and FAM-S assessments, setting goals aligned to district requirements, and establishing the appropriate teaming structures within their schools that function according to policy requirements, and documenting SIP activities and expenditures related to the 12 key indicators in the NCStar system. Despite raising questions about the usefulness of some of these activities, staff at both schools engaged in these institutional rituals, albeit with some adaptations.

Both cases were also situated within very complex and challenging social and historic contexts that impacted data use practices. Specifically, the persistent poverty experienced by many families in the schools' local communities and the exacerbation of pre-existing social

challenges amidst the pandemic created ripple effects. As low-performing schools that had a significant number of students who were already behind in relation to grade level expectations, the pandemic left these schools with an increased sense of urgency to support students who were negatively impacted by the pandemic. As a result, many teachers expressed feeling burned out and feeling overwhelmed and the principals at both sites felt compelled to take on more of the SIP activities simply to take some of the burden off of their staff. The extent to which principals decided to take on some of these tasks on their own or whether they tried to maintain a distributed process varied. The following sections explore the specific insights from each of the sites individually.

Key Findings from Case 1

One of the most notable features of data use at Case 1 was the concerted attention paid to gathering various data sources to help school staff better understand and meet students' behavioral and SEL support needs. There were several formal means of collecting behavioral data (i.e., ClassDojo, Incidents+, student "mentor list") as well as instances where staff mentioned using informal data (e.g., from observations of SEL lessons with the guidance counselor) to better inform how they engaged students in class. The focus on attending to students' behavioral and SEL needs led to the hiring of an external behavioral consultant, who was instrumental in training teachers on how to use ClassDojo, one of the main sources of data reviewed by the behavioral/SEL subcommittee during the SIP meetings as a way to identify trends in student behavior. The behavioral consultant also conducted observations to determine the extent to which MTSS behavioral supports were being implemented and provided feedback during the SIP team meetings to inform further implementation supports for teachers.

Data use practices at Case 1 were primarily divided across subcommittees (i.e., the Academic, Behavioral or SEL/PBIS, and Community & Culture subcommittees) within the SIP team, each focusing on data use for different purposes. The sources and nature of the data used varied substantially across the subcommittees, as did the problems they were addressing and who was engaged in these processes. As such, each of the subcommittees can be understood as engaging in their own processes to construct local issue-focused knowledge. Procedurally, once subcommittees share the issue-focused knowledge they have constructed within their subcommittees, it is then synthesized with other information from the other subcommittees and prioritized to inform the recommendations and subsequent decisions made at the school level. This subcommittee structure gave team members a sense of ownership and distributed responsibility, while also giving the principal reassurance that action will be regularly taken in relation to the main SIP focus areas.

Key Findings from Case 2

One of the key findings from the investigation of data use practices to support school improvement planning efforts at Case 2 was the apparent silos of data use practices and systems. Within this school, it was apparent that data use practices either focused on making inferences about student and staff support needs in general (i.e., the formal CNA and FAM-S assessment processes as well as more informal discussion during ILT and SBLT meetings) or the specific needs of individual students (i.e., the work practices of IPS teams, PLCs, and individual teachers). The more general inferences were used to guide the priorities and actions related to school improvement planning and were considered to be a part of the SIP's work practices. Conversely, student-level data, albeit from formal standardized assessments or more informal formative classroom observations and assessments, was used to inform instructional decisions

(i.e., small groups) or to decide if students needed supplemental and intensive interventions and support. This second focus is much more engrained in the instructional and pedagogical work practices of teachers than it is in the school improvement planning team. Most of the local data tools and systems at Case 2 also aligned with these two foci. For example, the figures in the data dashboards created by the principal were very similar to those included in the CNA and used to make inferences about school climate or school-level outcomes related to student achievement on standardized assessments. The math tracker, on the other hand, which was designed to assist teachers in leveraging formal classroom assessment results, could be used to determine which students might need additional review of specific skills that could be addressed during small group work. The only data tool that fell outside of this dichotomy was the re-rostering dashboard, which was a school-level tool more focused on making a managerial task more efficient than on making inferences about students or staff individually or in the aggregate.

The other key finding from this case was the extent to which informal data, specifically via direct or indirect feedback through staff representatives, factored into decision-making. This was most apparent in relation to problem identification and in terms of the generation and selection of solutions for school improvement activities. As noted above, the CNA was a formal assessment activity used to identify problems and opportunities for improvement. However, in addition to this formal activity, agenda setting at Case 2 relied heavily on the local experiences, beliefs, and priorities of staff, particularly those expressed by individuals or their representatives during the ILT meetings. In fact, the principal mentioned using this team as an opportunity to get a better idea about key concerns and needs across the school. This feedback, along with the growth areas identified by the "core" leadership team (i.e., the principal and the MTSS leads), functionally set the course for school improvement planning activities at this school.

Furthermore, if school improvement strategies or initiatives were not thoroughly vetted by the ILT through "productive conflict" and discussion, or if there was not enough buy-in among members, items were not brought to the larger SBLT meeting for discussion and/or a vote. As such, informal data based on professional experiences played a critical role in decision-making at this school.

Discussion

The following sections will explore the relationship between SIP efforts and evaluative thinking through the lens of three organizing schema that provide different vantage points from which to explore evaluative thinking in school improvement planning. In the context of this study, evaluative thinking is operationally defined as situated, systematic, principled, and critically conscious reflection on the valuing processes enacted to arrive at evaluative judgements or decisions. Evaluative thinking can also be organized into three main categories, namely: (1) believing in and practicing evaluation, (2) posing thoughtful questions and seeking alternatives, and (3) describing and illustrating thinking (McIntosh, Buckley & Archibald, 2020). Such conceptualizations transform evaluation from something to be done by SIP teams to *praxis* or a socially embedded way of being (Schwandt, 2002). With this faming in mind, the next sections will explore evaluative thinking in the context of this study through a modernist conception of evaluation which promotes a praxis of compliance and espouses a technocratic ways of knowing, both in evidence throughout this case study research.

The Modernist Conception of Evaluation

The ways in which the schools in this inquiry engaged in school improvement planning are reminiscent of what Dahler-Larsen (2012) calls 'evaluation machines,' a conception of evaluation very much intertwined with modernist notions of evaluation practice (Schwandt,

2002). As Dahler-Larsen (2012) explains, evaluation machines can be conceptualized as presumably automatic, predictable, and reliable evaluation procedures that emerge within "audit societies… as a way to manage risk and provide reassurance" (p. 169-170). As such, the focus and apparent responsibilities of those within such contexts become narrow and devoid of more nuanced and contextualized experiences. As the variability in these cases suggests, even seemingly similar contexts such as these cases that were embedded within the same state and district accountability structures and were both recurring low-performing, Title I, TSI schools, were not as homogeneous as would be expected. Without attention to nuanced and contextualized experiences that is inherent in such contexts, local knowledge and understandings that can be insightful or useful are not considered.

The systems and structures of the school improvement planning teams at the two case study schools create conditions of evaluation that are more aligned with what Schwandt (2002) terms modernist or naturalistic orientations to evaluation, with its focus on "procedural rationality and the methodological production of knowledge about objects" (p.11). The apparent focus of the NCStar system on the documentation of specific activities in alignment with the 12 key indicators further exemplifies how modernist-oriented evaluation seeks to reduce uncertainty and ambiguity, establish a sense of procedural rationality, and employ the technical and instrumental use of data to promote improved efficiency. Highlighting the modernists orientation of evaluation in this context also emphasizes the implicit de-emphasizing of more humanistic orientations of evaluation that focus more on attending to "lived practices" to promote further self-understanding (Schwandt, 2002, p.11). Furthermore, acknowledging this difference in orientation emphasizes the potential for evaluation machines to perpetuate the false notion that evaluation, or in these cases, school improvement planning, is something separate from the

everyday work practices of educators. Instead, evaluation machines not only shape what is measured and noticed, but also have "constitutive effects" that frame how individuals understand and do things in context as a result of "…steer[ing] certain values, orientation, interpretations, and practices in the direction of a particular construction of reality" (Dahler-Larsen, 2012, p. 199). This framing also underscores how non-rational factors (i.e., norms, values, and capacity) that are inherent within institutional hierarchies and the systems and structures of evaluation systems in these contexts shape how individuals think about and respond to the problem at hand. Furthermore, neglecting to attend to such non-rational factors, which are ever-present even in seemingly rational systems of data-informed decision making (Young, 2006), leads to potentially deficient and biased understandings of these systems in reality.

A Praxis of Compliance

As previously noted, SIP team members, and leadership in particular, were often more focused on adherence and compliance with state and district requirements than they were on asking bigger questions about the implicit value of their actions and how their school improvement efforts fit into larger questions about educational quality. As Dahler-Larson (2012) notes:

> … the paradox [in evaluation machines] is that in spite of – or one might even say because of – the social investments in evaluation machines, with their atomistic and defensive focus on the steering of microquality, society's capacity to handle complex macro-oriented problems may not have increased at all. (p. 191)

This paradox, as Dahler-Larsen call it, seems apparent by how both schools' SIP teams document their school improvement planning goals, activities, and progress in the NCStar system, a state requirement for TSI schools, regardless of the perceived local relevance (or lack

thereof) of the 12 key indicators they are required by the state. Even with local adaptations to state and district mandates, as well as data tools and systems, systematic and sustained engagement in continuous improvement efforts is limited. Thus, we see that school staff are left feeling as though they have little agency to set their own goals. As such, documentation of school improvement efforts in NCStar become like a shadow of the true improvement initiatives and processes they are undertaking to promote improvement.

The primarily compliance-focused and surface-level engagement in school improvement planning that occurs via formal SIP systems and structures are more akin to symbolic or legitimative uses of evaluation than instrumental or more learning focused approaches to evaluation (Alkin & Taut, 2003). Acknowledging these uses as such highlights the inherently political nature of school improvement planning processes. Within these evaluation machines, SIP-teams comply with the seemingly superfluous requirements to maintain an aura of legitimacy by demonstrating evidence of engaging in rational decision-making processes to promote school improvement. Furthermore, the compliance-focused mode of engagement seen in these cases leaves little room for school improvement planning teams to engage in critical reflections that are an essential quality of evaluative thinking. When individuals or teams approach the school improvement process as something that simply needs to be adhered to, they are adhering to modernist orientations of evaluation that do not acknowledge or attend to non-rational or normative dimensions of decision making. As such, they become actors in a system that does not enable them to critically reflect upon their priorities and preconceptions. The singular focus on compliance further minimizes the political and normative factors that shape this process, creating further distance from the values and prior experiences of data users who

engage in knowledge construction during data use practices (Fullan, 2020; Mandinach et al., 2008; Marsh, 2012; Schildkamp & Poortman, 2015).

Moreover, the singular focus on compliance in school improvement planning at both case study schools remains in tension with the espoused view of this process as one that gives voice to teachers and ensures more balanced representation in the decision-making process. As the findings of this study suggest, both schools have made concerted efforts to cultivate cultures of distributed leadership, shared responsibility, mutual respect and trust, all of which is instrumental in promoting effective data use practices (Lange, Range, & Welsh, 2012; Young, 2006). However, adherence to modernist notions of evaluation and rationalistic conceptions of this process prevent the prioritization of goals, methods of data collection, and interpretations of findings that are commensurate with educators' priorities and everyday work practices. As such, there is little space to create more participatory evaluation conditions within these contexts that promote shared ownership, participant empowerment, use of findings, and program improvement, as well any real learning for individuals and institutions (Cousins & Chouinard, 2012).

Epistemological Foundations: Technocratic Ways of Knowing

Another key feature of evaluation machines that was apparent in the two case study schools was in the ways school improvement planning teams thought about the purposes and goals of their work. At both sites, the ultimate goal of the school improvement process primarily centered around indicators prioritized by the state and goals that were championed by the district – i.e., the ability of schools to improve student attendance and student achievement and growth on standardized state assessments. As such, the formal school improvement process systems and structures in these contexts can be understood as "technolog[ies] of governance" that are situated

within an "indicator culture" (Merry, 2016, p. 9-10), where quantification primarily is used to simplify and facilitate the comparison of complex social phenomena. However, the danger that arises in situations such as these is the lack of acknowledgement that the use of numbers or indicators can be understood as both representing a particular view of social phenomena and as a "cultural practice" that frames how we understand things and how we take action in response to those understandings (Lindbald, Pettersson, Popkewitz, 2018; Merry, 2016). As Coburn & Turner (2012) state "… categorization systems that are promoted by policies … can influence, not only how teachers, school leaders, and district personnel look at, analyze, and make meaning of data, but also how they organize instructional responses" (p. 191). As such, the implicit systems of meaning (i.e., categories, classifications systems, and logics of action) established by policies have a subtle but impactful influence on how users interpret data, and on the actions they take in response to this data.

Within these school contexts, the apparent focus on adhering to or creating tools for more rational data use practices seems to miss the social dimensions involved in adopting a sociotechnical perspective of data use (Piety, 2011). As such, current systems and structures for school improvement planning seem to prime individuals and teams involved in the process more towards focusing on the technical and rational aspects of data use and decision making than on attending to other factors that are implicitly influencing these processes. Current school improvement planning practices seem more oriented towards seeking technical and rational solutions to what are essentially social and political problems (Chouinard & Cram, 2020; Chouinard & Hopson, 2016). Moreover, what is posited to be an opportunity to engage school stakeholders in more distributed and participatory approaches to school improvement planning is replaced by a more technocratic framing of the process, one where school and community

dynamics are reduced to "what is essentially a depoliticized, uncomplicated, and 'knowable' version of the world" (Chouinard, 2021, p. 131). Dismissing the importance of the local context and the role of individual perspectives and worldviews through which to view the school improvement planning process leaves little room for evaluative thinking.

Implications for Proposed Theoretical Framework

The discussion of key findings above brings renewed attention to the critical role that norms and values play in shaping how school improvement planning is carried out in these contexts. However, the current manifestation of the formal and informal systems and structures for school improvement planning underestimate the role of non-rational factors in the process, as well as the social and political factors that shape these practices in substantial ways. Furthermore, the assumption of a seemingly rationalist orientation to evaluation undermines the ability of individuals and teams to engage in evaluative thinking within this process. As Dahler-Larsen (2012) reminds us:

> In real life… decision making in organizations is not rational. There is disagreement about goals. But actions must be taken, so values and goals are only partly and temporarily clarified along the way. Some policies are agreed on if goals and values are not consistent, and many alternatives are not considered. Instead, actors and organizations muddle through on the basis of limited *reflection* on previous actions. The capacity to process information is limited period adjustments happen mostly at the margin. (p. 43-44)

In the context of this multicase study, school improvement planning teams appeared to act in quite compliance-focused ways that create tension between the formal, accountability-focused school improvement efforts of the SIP evaluation machine and the everyday work practices of educators. The findings also suggest that there can be multiple DIDM processes occurring within

subcommittees on SIP teams as well as other school-based teams that are making decisions outside of the context of the SIP process based on other priorities and goals. In this way, there appear to be loose couplings (Meyer & Rowan, 1977) or gaps between the formal structures for school improvement planning and the actual work of educators and educational administrators, a dynamic that is highlighted by these two cases. Therefore, although the implicit goal of the SIP process seems to be creating a more unitary and integrated understanding of what is happening in schools, the inherent complexity of these systems naturally gives rise to divisions within various communities of practice with the school. Although this might be deemed problematic from a rationalist or modernist perspective, as Dahler-Larsen (2012) notes, loosely coupled systems in organizations are not inherently dysfunctional, instead they "… can respond to changing demands of a heterogeneous environment … [and] are perhaps a more elegant and more advantageous solution to the organization's problems than tight, integrated adaptation" (p. 63). However, the ability of such systems to be responsive to changing priorities and needs assumes that ability and wiliness to engage in more locally situated critical thinking, which lies at the heart of evaluative thinking.

CHAPTER VII: CONCLUSION AND FUTURE DIRECTIONS

I undertook this study seeking to develop a better understanding of how data is used within schools to support continuous improvement processes, i.e., school improvement planning activities, within the context of current K-12 accountability requirements. Drawing upon my training in educational measurement, assessment, and evaluation as well as research within DIDM literature that suggests data use is not a purely rational and linear process in such contexts, I approached this study intending to more directly attend to the role values and normative factors play in shaping data use practices in K-12 contexts. Although current accountability policies highlight the need for systematic data use and evaluation for continuous improvement and require teams of educators to identify local issues, select appropriate and feasible intervention strategies, and monitor progress toward locally specified goals, there is very little attention paid to the evaluative nature of these activities as they play out within school improvement planning teams and no explicit attention to whether evaluative thinking is occurring in these contexts.

Sensemaking theories in DIDM literature (Coburn, 2001; Coburn, 2005; Marsh, Pane, & Hamilton, 2006; Snodgrass Rangel, Bell, & Monroy, 2019) and the influence of individual as well as collective social, political, and institutional factors were foundational in this study and shaped the design as well as the interpretation of findings in important ways. First, conducting a multiple case study of politically important and somewhat typical cases in the context of the current accountability landscape allowed for the construction of detailed and nuanced descriptions of how SIP processes unfold in these particular contexts. Taken together, the results of these two instrumental cases provided a more thorough understanding of how factors like social and historical context as well as leadership philosophies and practices influence SIP

activities and data use practices in such contexts. The findings of this study also highlighted key practices of SIP teams that loosely align with the general data use model put forth in the study's theoretical framework. However, areas of misalignment between the framework and reality were almost more insightful. For example, the fact that SIP team activities primarily focused on problem identification and responses left a gap that made it difficult to chart the course of specific DIDM instances. As noted in the study's discussion, the lack of systematic attention to explicating and documenting key linkages and logics of action that underpin the SIP processes, creates little room for evaluative thinking within such contexts. In this way, what was not found in the course of these studies was equally, if not more, enlightening than what was found.

As previously discussed, the conception of evaluation as a socially embedded practice or way of engaging in evaluative situations (Schwandt, 2002) was foundational in this study. As such, evaluation practice is not understood simply as the activities and evaluative judgements rendered by individuals and groups. Instead, what sets evaluation apart from other applied research practices is how individuals engage in evaluative situations and the extent to which they attend to valuing processes and engage in evaluative thinking. Perhaps what is most notable upon consideration of the study's key findings is the absence of explicit findings related to evaluative thinking within these teams. This apparent gap was argued to be an artifact of the more modernist conceptions of evaluation that SIP teams were orienting their activities towards as they narrowly focused on the documentation of activities and progress in these contexts. Similarly, systems and structures in place within these contexts assumed particular ways of viewing school quality and improvement processes. As such, there is relatively little room in these contexts for flexible thinking and critical reflection, which are instrumental in the construction of thorough and rich understandings of the local context and how schools might be

able to improve student outcomes. Furthermore, the implicit focus on compliance and surface-level engagement in required SIP assessment and evaluation activities left little space for individual and collective ownership, meaningful engagement, and critical reflection – all of which are foundational in evaluative thinking.

Study Contributions

The main contribution of this study was the close attention paid to how contextual factors and realities shaped the practices of school improvement planning teams. Although there is a long history of program evaluation in educational contexts, most formal evaluations occur in relation to specific grants or programs rather than being more broadly focused on how schools might be able to leverage the depth and breadth of knowledge from this field to promote organizational learning and continuous improvement (Thorton, Shepperson, & Canavero, 2007). This multicase study also highlighted how the complexity that is inherent in school organizations and local realities faced by school leadership teams impacts the ways in which state and district mandates related to school improvement planning are carried out in practice. Furthermore, it considered how current school improvement planning focuses on compliance and is framed by modernist orientations to evaluation and narrow epistemological orientations that de-emphasize the role on non-rational and normative factors, which are foundational in DIDM. Finally, this study draws attention to the ways in which the modernist and technocratic approaches espoused by current systems and structures for school improvement planning are not well positioned to address the inherent complexities of these contexts. Instead, they promote seemingly symbolic uses of evaluation in these contexts and pull attention away from closer consideration of root causes that lie in the social and cultural complexities of these contexts.

Study Limitations

One of the main limitations of this case study was the inability to physically visit schools during the course of data collection due to the pandemic. Much of the contextual information gathered for this study relied heavily on information that was publicly available online as well as the information gleamed from virtual observations and interviews with school staff. As such, the case descriptions provided perhaps less descriptive information than is ideal when trying to provide the readers with a 'vicarious experience' of the schools and their teams. Furthermore, the inability to conduct observations in-person, sometimes made it difficult to hear what was being discussed due to technical difficulties or see who was actually in the room for particular sessions, since participants were often out of the frame. In these cases, I had to rely on supplemental information from the meeting minutes or follow-ups with the meeting facilitators.

A further limitation was the lack of district and state voices represented in the findings. Although the goal of this study was to explore school improvement planning processes through its manifestation at the school level, during the course of the study it became apparent that there was some ambiguity about how the state and district intended to provide SIP supports at a systemic level as well as how this related to MTSS supports. However, since the focus of this study was only on the schools' experiences with this process, the findings relate only to how supports and mandates from state and district levels were perceived and experienced by school-level staff and to not provide much insight about the logic of specific state and district supports beyond what was espoused in publicly available guidance documents.

In relation to case selection, it is important to acknowledge self-selection bias that likely led to the inclusion of cases at schools that already had reasonably established SIP processes and procedures in place. With this in mind, the results of this study should be interpreted with an

understanding that these cases likely have more well-developed SIP structures, data use practices, and data tools and infrastructure than other schools that were not interested in participating. Additionally, although the cases were bounded in a way that was intended to promote similarities between the cases, there was unexpected variety among the final two cases included in this multicase study in relation to their student populations and leadership/school support structures. Furthermore, although four schools did express interest in participating in the study, there was not enough buy-in at those sites to collect enough data to justify their inclusion. Specifically, at one school buy-in primarily came from school support staff instead of from school administration. As a result, only two interviews were conducted despite multiple attempts to reach out to administration and staff. At the other school that was considered, the principal was initially interested and one leadership team meeting was observed; however, subsequent attempts to contact the principal to setup interviews were unsuccessful.

Finally, due to the immense pressure teachers were under within these contexts, the decision was made to shorten the length of the interviews to 30 minutes instead of the original 45- to 65-minutes. Furthermore, the decision was made not to be too persistent in recruiting individuals to participate in the interviews. Although this led to the exclusion of some cases and did not allow for as in-depth conversations as were hoped for, the information that was gleamed from these two studies under the necessary constraints was still insightful.

Future Research

Given the complexity of the education landscape today, the following questions for further study remain:

1. How might the relationship between school improvement processes and evaluative thinking be different in schools that are not under considerable political

pressures due to their identification as a TSI school? Furthermore, how might this relationship change within SIP teams at middle and high schools?

2. As noted in the methods section, perspectives of district leaders were not included in this study. As such, future research might consider how district leaders conceptualize and support school improvement efforts, as well as how they might support more locally informed evaluations of the school improvement planning process and its outcomes. s
3. Given the need for a more nuanced understanding of schools, education, and school improvement planning, in what ways could evaluative thinking engage schools in thinking more critically and more reflectively about school improvement planning and data use more broadly?
4. Overall, as the field of evaluation pays renewed attention to evaluative thinking and what lies at the heart of professional evaluation practice, the body of literature would also benefit from a more thorough consideration of how evaluative thinking is or is not embedded within our political, social, and educational institutions as well as how current conceptions of evaluation systems and structures in these contexts might create barriers to stakeholder engagement in evaluative thinking.

Final Note

At the outset, this study sought to draw renewed attention to and extend the "teacher as evaluator" conception put forth by McFadden & Williams (2020) when they argued that the processes of synthesizing, deriving meaning, and determining the most appropriate course of action from data are inherently values-engaged and, therefore, require teachers to render

evaluative judgements as a part of their professional roles. However, in light of the findings and discussion, it might be more accurate to say that teachers *can be* evaluators of their own practices, but that this orientation was not the default in SIP contexts. Instead, without space for educators to develop more local ownership of school improvement planning efforts and engage in critical reflection about the logic that underpins the school improvement strategies and initiatives and the data they are leveraging to inform their practices, it seems unlikely that educators will be able to engage in evaluative thinking in such contexts. Therefore, it remains to be seen what impact evaluative thinking and the value the field of program evaluation might be able to bring to continuous improvement processes such as these. However, the explicit attention paid to the role of non-rational and normative factors in this study is a first step towards drawing attention to the implicitly evaluative nature of data use in support of school improvement planning within the current accountability landscape. From here, it is important for evaluators working in K-12 spaces and the professional field of program evaluation to consider how and in what ways making educators more cognizant of the evaluative judgments they are implicitly making in practice might add value to the professional work practices of educators. Furthermore, we should be asking ourselves how we might be able to assist educators in finding more synergy between their everyday work practices and SIP activities as well as what might be the 'value added' if we were to assist educators in developing capacity related to evaluative thinking alongside data literacy and tool proficiency that is already commonplace in these contexts.

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APPENDIX A: INTERVIEW PROTOCOL

During this interview, I will pose questions to facilitate discussion about your experiences working on your school's school improvement planning team. I'm particularly interested in learning more about how you and your colleagues use data to support school improvement efforts and how you make decisions and engage in evaluation activities and thinking throughout this process. Our discussion should take about 30 minutes and will be audio recorded for later transcription and analysis.

To protect your privacy, I am joining you virtually from [my office/a private space] so that your responses cannot be overheard by anyone. Any research assistants who help with the transcription of your responses will not be affiliated with your school or the school district in any way and must sign a Statement of Confidentiality. Furthermore, no personally identifiable information will be included in reports of the research findings and only a high-level summary report of the key findings will be provided to your school at the conclusion of this research study. Additional details about the various steps being taken during data collection, analysis and reporting to protect your privacy and that of your school and colleagues is included in the information sheet I shared with you via email prior to today's interview.

Please know that you may withdraw from the interview or refuse to answer any questions at any time if you feel the need to do so. Do you have any questions about the study or the IRB information sheet I've provided? May we begin?

1. To start, would you tell me about yourself and your professional background? What do you do at [school name] and how long have you been there?
2. [Non-Administrators] How did you get involved in your school's School Improvement Planning (SIP) team?

Potential Follow-up Questions:

a. *What role(s) have you played in this process?*

2. [School Administrators] Next, would you describe how the School Improvement Planning (SIP) process is structured or organized at your school?

   Potential Follow-up Questions:

   a. In your opinion, what is the primary purpose of this process and each of the groups/teams you mentioned (if applicable)?
   b. How would you describe the role(s) you have played in this process or on these teams?

3. What are some of the main goals or priorities of the SIP team at your school?

   Potential Follow-up Questions:

   a. *How are these determined? (Reflection on assumptions being made)*
   b. *How does your team decide which goals are prioritized? (Reflection on values)*
   c. *How have these changed over time (e.g., since the start of the pandemic)?*

4. What kinds of data (or evidence) does your team use to inform decision making?

   Ask for a list, then ask the following questions in relation to each of these:

   Potential Follow-up Questions:

   a. *Where does this data come from?*
   b. *How and to what extent does your team consider the credibility and/or limitations of the data you use?*
   c. *How is it analyzed?*
   d. *What tools/resources do you use to review and interpret the available data?*

e. *How often do people on the team have different interpretations of what the data is saying? What typically happens in those situations?*

5. How does your team determine key findings or what the data means for you and your school in a practical sense?

   Potential Follow-up Questions:

   a. To what extend does your team pull information from multiple data sources to inform the decision-making process?
   b. How instrumental do you feel data and evidence are in the decision-making processes at your school?
   c. In what situations, if any, do you feel data and evidence should play a larger role in decision making at your school?

6. In your opinion, what have been some of the impacts(s) or effect(s) of engaging in this process at your school? For you, other staff, and students?
7. In general, to what extent do you feel the school improvement planning process has been a useful and valuable activity at your school?

   Potential Follow-up Questions:

   a. What might a more successful process look like?
   b. What have been some of the barriers to realizing this vision?
   c. What additional resources/supports might be required to realize this vision?
   d. What steps have you and your team taken to start removing some of these barriers?

8. Do you have any additional comments or information you would like to share about the SIP process or other data use practices at your school?

APPENDIX B: OBSERVATIONAL PROTOCOL

SIP Team Meeting Observational Protocol

Meeting Attendance & Engagement Information:

To be completed throughout the course of the observation.

Title/Role	# Participate via Video	# Participate via Audio	# in Attendance	# Absent [1]	Additional Comments
Principal					
Assistant Principal					
Classroom Teachers					
School Support Staff					
Other Attendees					
General comments about attendance and engagement:					

[1] According to meeting invitation.

Site: _____ **Date:** _____ **Start Time:** _____ (am/pm) **End Time:** _____ (am/pm) **Page 1 of** ____

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SIP Team Meeting Observational Protocol

General Meeting Information and Description of Activities:

To be completed throughout the course of the observation.

Meeting Facilitator(s) and/or Leader(s):	
Description of Meeting Structure:	
Main Topics of Discussion:	
Overview of Meeting Activities:	
Mentions of Professional Development Opportunities to Support SIP work:	
Discussions Relating/Connecting SIP Activities to Other Work Practices, Roles, & Responsibilities:	
Mentions of Individual & Collective Information or Capacity Needs:	
Nature of Post-Meeting Activities (Roles/Responsibilities & Timelines Discussed):	

SIP Team Meeting Observational Protocol

Evaluative Thinking Behavioral Inventory

To be completed throughout the course of the observation. Additional details will likely be added after review of the meeting's audio transcript.

Behavior Categories:

A. Poses questions about claims and assumptions.
B. Reflects on self-generated claims and assumptions.
C. Describes logic/thinking to colleagues.
D. Illustrates thinking with models or diagrams.
E. Seeks evidence for claims and hypotheses.
F. Articulates the relationship between proposed data use strategies and intended claims and decisions.
G. Suggests alternative methods for validating claims.

Behavior Category	Individuals Exhibiting Behavior	Short Description

Site: _____ **Date:** _____ **Start Time:** _____ (am/pm) **End Time:** _____ (am/pm) **Page 3 of** ____
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SIP Team Meeting Observational Protocol

General Impressions of the SIP Team

To be completed at the end of the observation.

Behavior *Generally, the SIP team...*	Extent of Agreement					Examples
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	
I. Demonstrates flexibility and a willingness to improvise in a pursuit of understanding.	1	2	3	4	5	
II. Demonstrates a belief that the school improvement planning process is a valuable endeavor.	1	2	3	4	5	
III. Demonstrates a belief that systematic data use is a valuable endeavor.	1	2	3	4	5	
IV. Engages enthusiastically in school improvement planning activities.	1	2	3	4	5	
V. Engages enthusiastically in systematic data use activities.	1	2	3	4	5	

Site: _____ **Date:** _____ **Start Time:** _____ (am/pm) **End Time:** _____ (am/pm) **Page 4 of** ___

SIP Team Meeting Observational Protocol

Data Use Instances:

Some notes night be taken during the observation, but most of this section will be completed after review of the meeting's audio transcript.

	Data Use Instance #1	Data Use Instance #2	Data Use Instance #3
Data Source:			
Intended Use(s):			
Communicated Rationale/ Relevance for Data Use:			
Overview of Data Preparation/ Cleaning Procedures:			
Overview of Data Analysis Procedures:			
Overview of Data Tools/ Resources Used:			
Overview of Key Findings and/or New Knowledge Constructed:			
Description of Consideration During Decision-Making:			

Site: _____ **Date:** _____ **Start Time:** _____ (am/pm) **End Time:** _____ (am/pm) **Page 5 of** ___

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SIP Team Meeting Observational Protocol

Data Use Instances (continued):

	Data Use Instance #4	Data Use Instance #5	Data Use Instance #6
Data Source:			
Intended Use(s):			
Communicated Rationale/ Relevance for Data Use:			
Overview of Data Preparation/ Cleaning Procedures:			
Overview of Data Analysis Procedures:			
Overview of Data Tools/ Resources Used:			
Overview of Key Findings and/or New Knowledge Constructed:			
Description of Consideration During Decision-Making:			

APPENDIX C: TWELVE KEY INDICATORS IN NCSTAR ON SIP PLANS

Dimension	Subcategory	Indicator and description
Dimension A: Instructional Excellence & Alignment	High expectations for all staff and students	A1.07: ALL teachers employ effective classroom management and reinforce classroom rules and procedures by positively teaching them.
	Curriculum & instructional alignment	A2.04. Instructional Teams develop standards-aligned units of instruction for each subject and grade level.
	Student support services	A4.01. The school implements a tiered instructional system that allows teachers to deliver evidence-based instruction aligned with the individual needs of students across all tiers. A4.06: ALL teachers are attentive to students' emotional states, guide students in managing their emotions, and arrange for supports and interventions when necessary. A4.16: The school develops and implements consistent, intentional, and ongoing plans to support student transitions for grade-to-grade and level-to-level.
Dimension B: Leadership Capacity	Strategic planning, mission, and vision	B1.01: The LEA has an LEA Support & Improvement Team. B1.03. A Leadership Team consisting of the principal, teachers who lead the Instructional Teams, and other professional staff meets regularly (at least twice a month) to review implementation of effective practices.
	Distributed leadership & collaboration	B2.03: The school has established a team structure among teachers with specific duties and time for instructional planning.
	Monitoring instruction in school	B3.03. The principal monitors curriculum and classroom instruction regularly and provides timely, clear, constructive feedback to teachers.
Dimension C: Professional Capacity	Quality of professional development	C2.01: The LEA/School regularly looks at school performance data and aggregated classroom observation data and uses that data to make decisions about school improvement and professional development needs.
	Talent recruitment & retention	C3.04: The LEA/School has established a system of procedures and protocols for recruiting, evaluating, rewarding, and replacing staff.
Dimension E: Families and Community	Family engagement	E1.06: The school regularly communicates with parents/guardians about its expectations of them and the importance of the curriculum of the home (what parents can do at home to support their children's learning).

APPENDIX D: DESCRIPTION OF DATA INCLUDED CASE 2-SPECIFIC DASHBOARDS

Platform	Dashboard	Description
Team Site in Power BI	Attendance Dashboard	• Allows filtering by grade level, homeroom, and date range • Summary statistics for school (i.e., total number of students with absences, total number of absences across all students, total number of tardy records across all students) • Calendar showing frequency of school-wide absences by date • Absence type and frequency by student • Cumulative number of absences and tardy records by student • Breakdowns by race/ethnicity and gender
Data Console in Power BI	ReRostering Dashboard	Statistics by Class within Selected Grade Levels • Total enrollment • # of students in demographic categories (i.e., race/ethnicity by gender) • Average # of behavior incidents • # of students with identified statuses (i.e., Individual Education Plans (IEPs), 504 Plans, Speech, Academically and Intellectually Gifted (AIG) statuses) • Average scores on state and benchmark assessments in reading and math
	Student Characteristics Dashboard	Data from 2006 to 2020 • School's total student enrollment • Student mobility rate for Case 2 and the district's elementary schools overall
	Teacher Characteristics Dashboard	Data from 2019 to 2021 • Total # of teachers • Teacher race/ethnicity percentages • Experience level percentages
	Teacher Working Conditions Dashboard	• Overall comparison to district and state between 2014 and 2020 • Difference between Case 2 and district on categories between 2012 and 2020 • Positive response rate on categories between 2012 and 2020 • Positive response rate over time on specific questions of interest between 2012 and 2020 (i.e., use of TWC for school improvement, overall satisfaction with their school) • Positive response rates on all questions, can be filtered by year and by category
	EC Caseloads (School & Student)	School dashboard provides minutes per week of service by: grade level, provider, homeroom, and student Student dashboard provides minutes per week of service by: • Service type (e.g., reading, math, behavior, SEL, special education supports, specific skills)

APPENDIX E: COPY OF THE FACILITATES ASSESSMENT OF MTSS – SCHOOL LEVEL

(FAM-S) – NCSTAR KEY INDICATOR CROSSWALK FROM NCDPI (NCDPI, N.D.)

FAM-S Item ↓ NCStar Key Indicator →	A1-07	A2-04	A4-01	A4-06	A4-16	B1-01	B1-03	B2-03	B3-03	C2-01	C3-04	E1-06
Leadership 1							X					
Leadership 2							X					
Leadership 3							X	X				
Leadership 4												
Leadership 5												
Leadership 6							X			X		
Capacity/Infrastructure 7												
Capacity/Infrastructure 8										X		
Capacity/Infrastructure 9										X		
Capacity/Infrastructure 10	X	X							X	X		
Capacity/Infrastructure 11												
Capacity/Infrastructure 12								X				
Capacity/Infrastructure 13								X				
Capacity/Infrastructure 14												
Capacity/Infrastructure 15								X				
Capacity/Infrastructure 16												
Capacity/Infrastructure 17												
Communication 18												
Communication 19										X		
Communication 20												X
Communication 21										X		X
Problem-Solving 22										X		
Problem-Solving 23										X		
Problem-Solving 24										X		
Problem-Solving 25										X		
Problem-Solving 26										X		
Problem-Solving 27										X		
Problem-Solving 28										X		
Three-Tiered Instruction 29	X	X	X									
Three-Tiered Instruction 30	X		X	X								
Three-Tiered Instruction 31	X		X	X								
Three-Tiered Instruction 32	X		X									
Three-Tiered Instruction 33	X		X	X								
Three-Tiered Instruction 34	X		X									
Three-Tiered Instruction 35	X		X	X								
Data-Evaluation 36										X		
Data-Evaluation 37										X		
Data-Evaluation 38										X		
Data-Evaluation 39									X	X		
Data-Evaluation 40										X		
Data-Evaluation 41										X		