

A Qualitative Study of Data Utilization in Special Education

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## **Abstract**

For the last two decades, schools have increasingly been required to administer and report standardized accountability data to prove they are successfully educating students. Previous research has found that educational leaders report using this standardized data more often than any other type of data. This is problematic for students who require special education services to access their education as they have needs that may not be met during a standardized testing administration and can impact their ability to demonstrate their learning. Leaders responsible for making decisions for students with disabilities need to know how to use data from a variety of sources in order to obtain a complete understanding of student progress. The purpose of this study is to learn more about how leaders use data to support students receiving special education services.

Nineteen principals and other administrators identified as making decisions for students in special education from five traditional public and five charter schools in the Twin Cities area were interviewed in order to gain an understanding of how leaders use data to support students in special education. In addition to semi-structured interviews, annual reports from each participating school were analyzed. Four themes emerged from the resulting data: (1) leaders use big-picture or detail-oriented data depending on their role; (2) educational setting matters; (3) leaders have similar expectations for all students; and (4) data use is collaborative. Results support previous findings that leaders use academic data as the most common type of data used by leaders. Findings also suggest that school setting may play a role in the likelihood that leaders use different types of data to support students in special education and that leaders often use data in collaboration with others when making decisions about programming for students.

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## **Chapter I: Introduction**

### **Introduction**

Data for accountability has become accepted as the definitive way for schools to demonstrate they are successfully educating students. Previous research suggests that the data most often utilized by educators comes from standardized assessment results (Wayman, Cho, Jimerson, & Spikes, 2012; Marsh, Pane, & Hamilton, 2006; Young, McNamara, Brown, & O'Hara, 2018), but less is known about how data are used for students in special education. The purpose of the proposed study is to obtain a better understanding of the kinds of data and for what purpose educators use data in supporting students with special needs. This information is necessary given that many students in special education have needs that may not be met during the administration of a standardized assessment, and therefore it is important for educators to be able to utilize data from other sources in order to make decisions to best support students with disabilities.

The remainder of Chapter I will summarize the historical context in which data came to play such a prominent role in school accountability. The problem identified above will then be detailed, along with specific implications and the importance of the proposed study. The organization of the paper will be described, followed by a glossary of relevant terms to define and situate prominent terms used throughout the discussion.

### **Historical Context**

In 1990, the 101st Congress passed the Individuals with Disabilities Education Act (IDEA). This legislation has governed the rights and responsibilities of students and

educators in U.S. special education ever since. The primary provisions include six main elements, which include the Individual Education Plan (IEP), Free and Appropriate Education (FAPE), Least Restrictive Environment (LRE), Appropriate Evaluation, Parent and Teacher Participation, and Procedural Safeguards (IDEA, 1990). The nature of special education necessitates procedures designed to fit the needs of the individual student; the evaluation process and tracking of IEP goals both require the use of data to set targets and track student progress.

According to the reauthorization of IDEA in 2004, the evaluation process requires the use of multiple measures or assessments regarding a child's functional, developmental, and academic skills. IEPs require a report of the child's current level of academic achievement and measurable, annual goals. Each of these requirements necessitate the use of data for students receiving special education services, though the type of data and how it must be used is not explicitly stated (IDEA, 2004).

Changes to the Elementary and Secondary Education Act (ESEA) over the last two decades attached high-stakes to accountability tests given to students, and held schools and districts responsible for making yearly progress. The focus on accountability intensified when President George W. Bush reauthorized the ESEA in 2002 under a new name: No Child Left Behind (NCLB, 2001), which brought significant focus to standardized assessments. In the two decades since NCLB went into effect, standardized assessments and accountability have become synonymous with educational outcomes. However, data can be gathered and used from sources other than standardized assessments, and provide benefits to schools that do so.

In addition to standardized test results, useful data can be obtained from student placement and behavioral records, school personnel information, technological capacity, and student demographics. Unfortunately, access to so many data sources is often as much of a burden as it is an opportunity. Collecting, analyzing, and interpreting data, especially different types of data from numerous sources, are time-consuming processes that require specific knowledge in order to get meaningful information in return. Many educators lack the time, training, or both to utilize data fully to enhance their educational planning and decisions (CAREI, 2016; Earl & Katz, 2002; Schildkamp & Poortman, 2015).

### **Statement of the Problem**

Educators should be equipped to understand and use data to make decisions for their students, including those who require special education services. Approximately 6.5 million students, accounting for 13 percent of the nation's student population, require special education services (US Department of Education, 2016). Federal and state mandates requiring the use of accommodations and modifications for students receiving special education services (IDEA, 2004); Minnesota Department of Education, 2008) suggest that standardized tests are not well suited to measuring the learning of students with special needs. That is, policymakers recognize that students who require special education services often have needs that are difficult to assess during the standardized administration requirements for these assessments. Many special education students have sensory requirements, attention difficulties, anxiety concerns, and other needs that the highly structured assessment environment does not accommodate, all of which can impact student performance.

Due to the increased focus on accountability that factored into accountability reporting during the reign of No Child Left Behind (NCLB, 2001), school leaders in general education report relying on state standardized assessment results when making decisions more than any other type of data available (Wayman, Cho, Jimerson, & Spikes, 2012; Marsh, Pane, & Hamilton, 2006; Young, McNamara, Brown, & O'Hara, 2018), and often use this type of data for accountability (Shen et al., 2010). Unfortunately, many educational leaders report barriers to using data to help make decisions for their students, including a lack of confidence in their own abilities to interpret data correctly (Cosner, 2012, Schildkamp, Karbautzki, Breiter, Marciniak, & Ronka, 2012; Frontiera, 2019). This lack of confidence is important given that educational leaders play a big role in establishing a school culture supportive of data use (Earl & Katz, 2002; Lange, Range, & Welsh, 2012; Murray, 2012; Schildcamp, Portman, Ebbeler, & Pieters, 2019). Leaders reported feeling that they were better able to appropriately interpret assessment data than other types of data (Shen et al., 2010). It is important for school leaders to understand how to use data for students in special education because of the recent push to include students who qualify for special education services in more general education courses, and the requirement to educate students in the least restrictive environment (LRE) (IDEA, 2004). This reality means that more educators and leaders throughout the school must understand how to obtain and utilize data from students in special education, even if they do not have a special education professional background.

Additionally, each school presents its own unique challenges and educators in leadership roles may face different constraints in their data use. Most research focuses on data use in traditional public schools, but the emergence of charter schools presents an

additional setting that must be considered when examining data use in special education. Less is known about how educational leaders use data in charter schools and whether it differs from the patterns found in traditional public schools. Additionally, while research has found that leaders report using assessment data more than other types of data in general education, less is known about how leaders use data to support students receiving special education services in each of these settings. Finally, relatively few studies have looked specifically at how school context and organizational roles intersect in terms of the purpose and kinds of data that educators use to support students with special needs.

### **Purpose and Importance of the Study**

The purpose of this study is to obtain a better understanding of the kinds of data and the reasons why educators use data to support students with special needs in a variety of educational contexts. The data collected in this study provides additional insight into how leaders collect, understand, and utilize data for students in special education programs. This is crucial in an age when data and accountability measures are in high demand and regarded as the definitive measure for how successful a school is. It is important to understand the interactions leaders have with data in order to ensure that educators have the tools to use data responsibly in their support of all students, including those who receive special education services.

There exists a gap in the literature where, while research suggests that leaders use assessment data most often for students in general education, less is known about what kinds of data educators use for students in special education. There is also a lack of information about how or if data use differs between traditional public schools and charter schools for students in special education. It is necessary to fill this gap in the

research in order to ensure that educational decisions made for students in special education are based on data that accurately represent their learning so that they are properly supported and able to make appropriate educational progress regardless of public school setting.

Based on this identified gap in the literature on educational leaders and data use, three research questions emerge that would begin to address the question about how educators in different organizational roles and educational contexts use data to make decisions for students in special education.

1. How does organizational role (i.e., principal, school psychologist, counselor) play a part in the kinds of data that educators use to make decisions regarding the progress and support of students with special needs?
2. How does educational context (i.e., charter vs. traditional public school) play a role in the kinds of data that educators use to make decisions regarding the progress and support of students with special needs?
3. How do organizational context and individual roles inform the purpose of data utilization for educators supporting students with special needs?

The answers to these research questions will help to fill the gap in the literature regarding how leaders in education use data to support students in special education, including the types of data they use, and why they chose to use different types of data. The following sections will summarize relevant literature, epistemological perspectives, and research designs in order to situate this research in the broader field of knowledge and to develop an appropriate research design to address the proposed research questions.

## **Organization of the Discussion**

The subsequent chapters of this paper provide a review of research relevant to data use and special education, offer a plan of study to address the literature gaps that emerge through this critical review, and present the findings of the research study along with a critical discussion of findings and implications for future research.

Chapter two presents a critical review of three research strands: educational context, leadership in education, and data and assessments. The educational context literature explores the importance of school culture, roles of educators, and differences between educational settings. The leadership literature examines how educational leaders currently utilize data, as well as the factors that influence educational leaders' use of data. The literature on data and assessment investigates what kinds of data and how data are utilized in education, the benefits of using data, and provides a description and review of the literature regarding standardized assessments, test modifications and accommodations.

Chapter three describes the research approach taken for this study. Methods included an inductive, qualitative study approach using semi-structured interviews and document review to obtain an understanding of how organizational role and educational context may affect data use for students in special education. Data were collected over a two-month period from 19 principals and educational leaders from traditional public and charter schools in the Twin Cities of Minnesota and surrounding areas.

Chapter four presents the findings of this research study and groups together themes that emerged from the coding of interview and document review data, with

connections to how each theme informs the answers to the three research questions this study is addressing.

Chapter five concludes with a discussion of the how the findings from this study align with previous research, implications for practices, and recommendations for future research.

### **Definition of Key Terms**

1. **Academic Data** - information that provides insight into students' educational progress.
2. **Accountability** – The United States Department of Education defines accountability in education as holding schools responsible for educational progress through raising academic standards and measuring student achievement (US Department of Education, 2016).
3. **Assessment** – the action or an instance of making a judgment about something (Merriam-Webster, 2017).
4. **Behavior Data** - information related to student behavior incidents and resulting disciplinary referrals or action.
5. **Data** – Factual information (as measurements or statistics) used as a basis for reasoning, discussion, or calculation (Merriam-Webster, 2017).
6. **Educational Leader** – An individual with the authority to make decisions that directly impact student progress, including decisions about program placement, access to resources, and daily classroom support (e.g. behavior support, intervention creation and monitoring, resource allocation, etc.).

7. **Engagement Data** – Information about students’ level of involvement and motivation to the school and learning.
8. **Equity** – Equity differs from equality. In education, equality indicates that all students receive the same opportunities, regardless of what they need to be successful. Equity is achieved when all students receive the resources they need to succeed, which may be more or less than other students (Mann, 2014).
9. **Fidelity of Implementation Data** – Information about the extent to which the guidelines for delivering a curriculum or intervention program were followed.
10. **Individual Education Plan** – As defined by IDEA (2004), the Individual Education Plan (IEP) is a written statement that includes information about the student’s current academic achievement. It also details how the disability affects the student’s access to the general curriculum, measurable academic and functional goals that will assist the student’s academic and functional progress, and the services and supports required to meet these goals.
11. **Progress** – A forward or onward movement (as to an objective or to a goal) (Merriam-Webster, 2017).
12. **School Personnel** – Individuals employed by a school or district, who may be licensed or non-licensed.
13. **Special Education Students** – Students who, through a completed formal evaluation process, have been identified as having one or more disabilities that require special education services in order for the student to successfully access their education.

## **Chapter II: Literature Review**

### **Overview**

There are a limited number of research studies on the kinds of data educators use and the purposes for which data are used for students in special education. Due to this limitation in research, this study draws on research related to data use in general education in order to inform our understanding of the current practices regarding data use in education. Three literature strands foster this understanding: educational context, leadership in education, and data and assessments. The educational context literature explores the importance of school culture, roles of educators, and differences between educational settings. The leadership literature examines how educational leaders currently utilize data, as well as the factors that influence educational leaders' use of data. The literature on data and assessment investigates what kinds of data and how data are utilized in education, the benefits of using data, and provides a description and review of the literature regarding standardized assessments, test modifications and accommodations. Combined, these three literature strands are important to our understanding because they describe general current data use practices in education and the role educators' play in determining how and why data are used.

### **Educational Context**

#### ***Charter Schools versus Traditional Public Schools***

The National Center for Education Statistics (NCES) estimated that in the fall of 2017, about 50.7 million students would attend public elementary and secondary schools in the United States (NCES, 2017). Another option for parents began emerging in the early 1990s. The first legislation allowing for the establishment of charter schools passed

in Minnesota in 1991 (Finnegan, Adelman, Anderson, Cotton, Donnelly, & Price, 2004). Charter schools are publicly funded schools that are run independently of an established traditional public school system or district. Charter school enrollment has increased steadily since the early 2000s, assisted by incentives for charter school establishment and growth by the No Child Left Behind Act of 2002, the Race To the Top initiative in 2009, and the Every Student Succeeds Act of 2015. Charter school enrollment has increased from less than one million students in 2004 to over 2.5 million in 2014 (NCES, 2017).

The emergence of charter schools has introduced an additional context to be considered when inquiring about the role of data use in special education. Charter schools receive public funding, so they operate under the same accountability requirements as traditional public schools, but have independent school boards and report to a state-approved authorizer that helps with school governance. The role of an authorizer is to “ensure that the schools it authorizes fulfill the purposes for chartered public schools and that the agreed upon terms of the charter contract, in order to safeguard quality educational opportunities for students, and maintain public trust and confidence” (Minnesota Association of Charter Schools, 2017). Minnesota state statute requires that a charter school authorizer:

- (1) Provides oversight in the areas of academic, operational, and finance performance;
- (2) Evaluates the academic, operational and financial performance of charter schools in its portfolio;
- (3) Determines the terms for charter school contract renewals; and

(4) Reviews proposed changes to charter schools in its portfolio, such as site and grade expansions, site changes, the additional of early learning programs and more. (Minnesota Department of Education, 2020)

Research that has focused on identifying potential differences between charter schools and traditional public schools have suggested there are a range of differences. The effect of charter schools on student achievement has been mixed, with some studies finding that charter schools have a positive impact on student performance (Booker, Gilpatric, Gronberg, & Jansen, 2007; Betts & Tang, 2016), while others have found that charter schools generally produce lower student performance than traditional public schools (Bifulco & Ladd, 2006, Imberman, 2009). One study found that principal turnover, which has been found to negatively impact achievement (Miller, 2013), was slightly higher in charter schools than traditional public schools (Winters, 2018).

There has been a small amount of research done on relationship and interaction between charter schools and special education students. Waitoller, Maggin, and Trzaska (2017) found that traditional neighborhood public schools serve significantly higher proportions of students who require special education services than do charter schools, and a study in 2012 found that approximately 11% of students in traditional public schools and 8% of students in charter schools received special education services (United States Government Accountability Office, 2012). The percentage of students receiving special education services has grown to around 13% since 2012 (US Department of Education, 2016). Charter schools have a smaller but growing percentage of students who receive special education services, around 10.6% of the charter school population

(Edweek, 2018). Charter schools that operate completely independent of public districts have a slightly higher special education enrollment, around 11.5% (Edweek, 2018).

Given the steady increase in charter school enrollment over the past two decades, and the differences in how the governance and accountability of charter schools versus traditional public schools is overseen, a question about how educators use data in charter schools for students receiving special education services emerges. Studies on data use in schools have focused on traditional public schools, but less is known about data use in charter schools. The type of school is just one way that educational context may affect data use. Another is the individual roles that different people have and their responsibilities to students with special needs. The next section will detail the numerous roles leaders fill in education.

### ***The Role of Leaders in Education***

Research has identified numerous roles that an educational leader may have, including being in charge of personnel acquisition, development, and discipline (Catacutan & Guzman, 2015). Others include acting as a catalyst for bringing about change (Bell & Palmer, 2015; Jarvis, Bell, & Sharp, 2016), implementing global learning opportunities and ensuring student access to education (Kilpatrick & McCarthy, 2015), and implementing and supporting educational programs such as inclusion (McLeskey & Waldron, 2000; Hoopey & McLeskey, 2013). Finally, educational leaders also take on the roles of being public intellectuals, curriculum innovators, and social activists (Johnson, 2006).

Less is known about how data are used by individuals in various roles in special education. What research there is on the intersection of special educators and data use focus on the training (or lack thereof) for special education leaders in schools around the country (Goor, Schwenn, & Boyer, 1997; Boscardin, Weir, & Kusek, 2010; Smith, Robb, West, & Tyler, 2010), and the importance of teacher leadership in special education (Billingsley, 2007; Ruble, McGrew, Wong, & Missall, 2018). This absence is significant given that individuals in a variety of roles take part in the process of designing an educational program for students with special needs. We continue to know very little about how people in different organizational roles utilize data for special education students, and what role both data and educators play in the process of making decisions about resources and programs for these students. This is important because of the greater inclusion of students who qualify for special education services in general education courses due to the LRE requirement in IDEA (2004). Since the LRE requirement went into effect in 2004, students who qualified for special education services spent more than 80% of their day in the general education classroom rose from around 50% to almost 65% in 2018 (NCES, 2020). More and more, educators and leaders are tasked with making decisions for students who qualify for special education services, and it is important to understand how educators obtain and utilize data from students in special education.

The variety of roles that leaders in education fill and the different contexts that leaders work in makes it challenging to identify processes for data use and decision making that are appropriate across multiple settings and contexts. While most researchers define the school leaders as a principal or assistant principals, and district leaders

primarily as the superintendent, this review accepts the wider definition described by US Department of Education (2010). Superintendents, principals, and assistant principals are not the only individuals who make decisions about the resources and supports a child in special education receives.

This review and subsequent study further defines an educational leader as someone who has the authority to make decisions that directly impact student progress, including decisions about program placement, access to resources, and daily classroom support. Identifying an expanded definition of who an educational leader is important because individuals with an important role in the process of making decisions for students in special education go beyond a specific title (e.g., superintendent, principal, etc.) and might include other actors who make important decisions regarding the educational progress of children with special needs (e.g., school counselor). The following section discusses the role of school culture and the importance of culture in fostering data use.

### ***The Role of School Culture in Fostering Data Use***

In order for schools to see the benefits of data use, there must exist a school and leadership culture that supports data use to improve student achievement. Kruse and Seashore (2009) highlighted the importance of nurturing school culture in addition to and as a means of achieving more traditional goals of education such as improving student achievement. “Improving culture is not an end in itself, but the means by which school leaders can address the goals of student progress and achievement” (Kruse & Seashore, 2009, p 8). The authors provided a framework for thinking about the different aspects of school culture, along with a way to measure where a school stands within the framework.

The PCOLT framework integrates the professional community (PC), organizational learning (OL), and trust (T) of an organization into one method of evaluating the culture within schools. A strong school culture, the authors suggest, is based on mutual norms and values and frequent dialogue and collaboration. The first aspect of this framework, professional community, refers to the relationships among the teachers, administrators, and other adults in the school setting. PCOLT calls for what the authors' term "intensified leadership," which calls for an increase in the number of people engaged in leadership roles within the organization. This requires the opportunity for adults to work together to create meaningful connections and develop a collective responsibility. That is, all members of the professional community share a sense of responsibility for the students enrolled in the school (Kruse & Seashore, 2009). This emphasis highlights the importance of understanding the different roles in education and how that may affect data use.

The organizational learning aspect of the PCOLT framework refers to continuous learning and collective engagement, and focuses on ways that new ideas can be brought into the school. This type of collaboration often occurs if individuals and groups within the organization can acknowledge their failures and discuss alternatives. This requires a willingness on the part of individuals to take responsibility for both reporting and solving problems.

Finally, trust is the product of people working together to create a culture of integrity and reliability. This allows members of the school team to work together effectively to improve student-learning outcomes, which is the ultimate goal of fostering this type of school culture. It also requires that leaders trust other members of their team

and allow others to come up with solutions without interference (Kruse & Seashore, 2009).

Earl and Katz (2002) also spoke of the importance of educational leaders in promoting a culture of data use. “School leaders have little chance of using data unless members of the school community are also committed to using data to make sense of their environment and think about the future” (Earl & Katz, 2002, p. 1016). They argued that leaders must involve others in interpreting and engaging with data in order to promote a culture of collaboration and to construct shared meanings and understandings between members of an educational environment.

In order for this to happen, leaders must build time into educators’ schedules specifically for data use and collaboration. The authors also pointed to the importance of working with individuals outside of the organization who have no personal stake in the outcome of the data use. By incorporating a perspective and considering difficult questions from someone without a personal or financial investment in the organization, issues that may have otherwise gone unnoticed or unspoken can be addressed. By promoting a culture of collaboration, leaders can set their schools up for success when using data to make decisions.

An understanding of how educators in different organizational roles and educational contexts use data to collaborate is important to obtain to ensure that students in special education are receiving the programming and resources most appropriate for their needs. The following section discusses the role that data teams can play in schools, and demonstrates how different groups of people in different contexts and with different roles work together to use data.

### *The Role of Data Teams*

Building on the importance of organizational culture in promoting data use, Schildkamp and Poortman (2015) studied the importance of data teams and the procedures that either helped or hindered data use. Each team, made up of four to six teachers and one or two school leaders, was provided with a step-by-step process for using data to solve a problem. These steps included problem definition, hypothesis formulation, data collection, analysis, interpretation, and finally evaluation of their projects. Following the study, the authors identified three factors that influenced data use: the features of the data itself (e.g. access to and accessibility of data), school wide factors (e.g. shared goals, training and support), and the characteristics of those people interacting with the data (e.g. data literacy, attitude).

Access to high-quality data, access to multiple sources of data, and the availability of management systems and other tools for data storage, retrieval, and analysis all influenced data use in this study. That is, if data were available that was reliable, plentiful, and from sources that were relevant to the educational questions relative to the needs of the school, it allowed data teams to be successful in identifying problem causes, and to identify and implement solutions. Additionally, some factors of the school itself, including shared goals, availability of professional development on data use, and leadership support all influenced data use. If school teams shared goals that were reinforced by the educational leaders and supported by professional development, data use was more likely. Finally, individual characteristics played a role in data use. Data fluency, personal attitudes about the usefulness of data, and the availability of time for collaboration all impacted how successfully data utilization occurred. If users of data had

the necessary expertise for data use, had a supportive team to work with, and believed that doing so would be a productive use of their time and resources, data use was more likely.

These results suggested that not only did each of these factors influence data use, but that they interacted with and influenced one another. For example, if a school or data team was experiencing issues with data access or sources, this weakness could be overcome with the support of a knowledgeable team member or data support specialist (Schildkamp & Poortman, 2015). This finding highlights the importance of further investigating how context affects data use, and how organizational roles may interact with one another when it comes to using data in special education.

Marsh and Farrell (2015) drew similar conclusions in their study attempting to build teacher capacity for data use. They conceptualized the process of data use as an inherently social and collaborative practice, and findings suggest that factors such as interpersonal trust between collaborators, along with shared goals, values, and expectations all positively influenced data use among teachers. Dedicated time for data collaboration and professional development to support the practice were found to be the most important organizational and environmental components for fostering data use.

Schildkamp, Poortman, and Handelzalts (2016) also investigated how different components of data teams could lead to school improvement. This study followed the progress of four data teams, each of which had a different educational problem they were trying to solve. Each team was evaluated on the depth of the inquiry in which they engaged and coded at each team meeting for the attribution they assigned to the educational problem (e.g. the reason for this problem is because of factors outside of

school/school policy/the classroom or students/ the teacher). Low depth of inquiry focused on descriptions, storytelling, and retelling, while high depth of inquiry involves going through a complete cycle of data use as defined by the authors and were focused on taking action. Figure 1 illustrates the cycle of data use used by Schildkamp, Poortman, and Handelzalts (2016).

Figure 1

*Cycle of Data Use by Teams*



Source: Schildkamp, Poortman, and Handelzalts (2016), p. 230.

Results indicated that the depth of inquiry fluctuated for each team throughout the problem solving process. All of the teams started at a low depth of inquiry. Depth of

inquiry is defined as “the degree to which team conversations express higher level thinking skills such as analysis, synthesis, goal setting, and reflection” (Henry, 2012, as cited in Schildkamp, Poortman, & Handelzalts, 2016). The more teams engaged in these higher-level thinking skills, the greater their depth of inquiry.

Three of the four teams achieved high depth of inquiry by about halfway through the two-year study, while the fourth never progressed beyond inquiry and discussions of low to average depth. The ability to achieve a high depth of inquiry was indicative that the team was able to use data to develop new knowledge (Schildkamp, Poortman, & Handelzalts, 2016).

The teams that were able to achieve a high depth of inquiry were also the most successful at moving from an external to internal attribution for their educational problem. External attribution of the educational problem occurred when team members identified the source of the problem being outside their influence, such as with the education students received before arriving at their current school, or an issue with school policy. Internal attribution of the educational problem occurred when the source of the problem was attributed to the staff members’ functioning, things that they could control or influence. The authors argued that even if a problem is externally caused, teachers still need to be able to think about the problem in terms of what they can do to address it.

The authors found that each of the teams needed support from the data facilitator to make sense of the data, and that three of the four teams went through several feedback loops in order to develop new information based on data. Results also found that three of the four teams utilized data to improve education and develop new knowledge, and that two of the four teams solved the educational problem they identified at the beginning of

the study using a data-driven decision-making process. The authors report that it was very important for teams to start with a problem and clear outcome goal upon which all team members agreed. This starting point was essential as it allowed for a shared understanding among team members, shared cognition through shared experiences, and collective efficacy (Schildkamp, Poortman, & Handelzaltz, 2016).

A doctoral dissertation built upon the work of Schildkamp, Poortman, and Handelzalts (2016) to investigate capacity building within data teams and whether it led to sustained data use by schools. Hubers (2016) sought to understand whether the ability of data teams to build capacity was related to data use sustainability. The study defined capacity building as “creating and sharing knowledge among team members” (p. 3) and that data use was considered sustainable when “working with the professional development program results in lasting school-wide changes in policy and in work practices themselves” (p. 5).

Results of the study suggest that while data team members gained knowledge, it was more frequently about understanding the educational problem itself than how to use the data to find a solution to the problem. For example, a data team learned about the likelihood of students graduating based on whether they had previously repeated a grade, but did not necessarily use the data to work towards a solution for keeping students who had previously been held back in school through graduation. That is, while the data teams did learn during the study, it was about the original problem, not about how to utilize data in a way that it could be generalized to other educational problems beyond the study. In fact, all of the teams in this study struggled to build capacity for data use, but shared quite a bit of knowledge about the educational problem at hand through personal

experiences. However, the author found that data sustainability was not found in any teams that struggled with creating and sharing knowledge, or vice versa, suggesting that sustainability of data use is related to capacity building. The author concludes that additional research on the potential causality between capacity building and sustainable data use is necessary before conclusions can be drawn (Hubers, 2016).

The research on data teams sheds light on the importance of educators being literate in data interpretation and use. As established by the educational administrator competencies from the National Policy Board for Educational Administration (2015), it should be a role of the educational leader to provide the knowledge and opportunities for other leaders and school personnel to use data to effectively create programs for all students, including those in special education. The role of teams and the individuals on those teams is particularly relevant to special education given that students' Individual Education Plans (IEPs) are designed by a group of people, a data team. Additional research will allow us to learn more about the kinds of data educators use for students in special education. Obtaining an understanding of how educators in different roles use data in special education may help provide recommendations to educators on how best to work on IEP teams to use data to identify and solve educational concerns for students in special education.

### ***Summary of Educational Context Literature***

The increase in charter schools since the 1990s has led to additional educational contexts to be studied regarding their use of data and students receiving special education services, yet research to date has mainly focused on traditional public schools. The role that educational context plays in the use of data between charter and traditional public

schools remains largely unexplored. In addition to the educational setting, leaders have many roles in education, both between and within the same school environment, including budget and program oversight, comprehensive school reform, staff and student management and discipline, and as curriculum innovators. School leaders and school culture play a big role in fostering data use.

Earl and Katz (2002) identified factors important for supporting data use in schools, including time built into faculty schedules specifically for data use and collaboration. Kruse and Seashore (2009) describe the PCOLT framework for establishing school culture, which emphasizes the importance of a collaborative environment with opportunities for leadership and contribution from all individuals, regardless of their position within the organization. Research on data teams provides some insight into how teams of people working in different roles and from different perspectives may approach the same educational program. Research indicates that many data teams require numerous supports to be successful using data.

The research presented here that informs our understanding of educational context rely on a variety of methodologies. The research that draws direct comparisons between the achievement between traditional public schools and charter schools relies primarily on examining assessment results through the use of quantitative analysis in order to evaluate whether statistically significant differences exist. While this type of methodology does allow for conclusions to be drawn regarding differences in assessment results for students in different educational settings, it is unable to capture the importance that the culture and environment play in the success or failure of a school. Additionally,

despite the use of quantitative methods, previous studies have found mixed results in terms of the effect that charter schools have on student achievement.

Assessment results, as has been stated, are the standard measure by which schools are evaluated for success and failure in modern education. However, a primary motivation for this study is questioning whether standardized assessments may accurately demonstrate the abilities of students who require special education services. Schools, like students with special needs, have a variety of factors and influences that impact the resulting achievement. Given the paucity of research the areas of charter and traditional public schools and data use for students in special education, a different approach is necessary to gather additional information to inform our understanding of these areas. Quantitative methods may not be the best methodology with which to examine the nuances of leadership for special education between school settings and to learn about how leaders use data to support students with special needs. This study examines data use by leaders in a more qualitative way in an effort to capture the nuances of programming for students with individual needs.

A greater understanding of the types of data and the purposes for data use by educators in special education is necessary before it can be understood how data teams in special education such as IEP teams can utilize data effectively. Additional research on data use for students receiving special education services in a variety of settings and by individuals in different roles is necessary to further our understanding of the role that educational context plays in data use.

## **Leadership in Education**

The leadership literature relevant to this review discusses how data may be tied into the decision-making process for educators. The relationship between educational leaders and data use is explored through a focus on perspectives and current utilization of assessments and data. Additional research investigates factors that influence leaders' use of data, how leaders influence data use in their schools, and guidelines for leaders' use of data.

The purpose of reviewing this research is to obtain a better understanding of how leaders use data in education. This will contribute to our understanding of what kinds of data leaders use and why leaders choose to use those data when making decisions about the resources and support students in special education receive. An understanding about how leaders use data is important to ensure that decisions made for students in special education are based on a valid interpretation of reliable data.

### ***Educational Leaders and the Decision-Making Processes***

When it comes to using data to make decisions, educational leaders report using standardized assessment outcomes more often than any other type of data. (Marsh, Pane, & Hamilton, 2006; Shen et al., 2010; Wayman, Cho, Jimerson, & Spikes, 2012; Young, McNamara, Brown, & O'Hara, 2018). Educational leaders use data to develop recommendations about services, identify learning needs for struggling students, form groups for targeted instruction, and to discuss student progress (Wayman, Cho, Jimerson, & Spikes, 2012; Dougherty, 2015). Research has also found that other district and school staff also use achievement test scores more than any other type of data, primarily to make decisions about student improvement goals (Marsh, Pane, & Hamilton, 2006; Dougherty,

2015). This pattern of data use is particularly common for students identified as being “on the bubble,” or students whose current achievement level places them just below the state’s cutoff for proficiency (Marsh, Pane, & Hamilton, 2006). What we do not know, however, is whether this general pattern of data use remains true for educators when making decisions about students in special education.

Principals have been found to have a generally positive attitude about the use of data, and many report encouraging their teachers to use data when making decisions (Anderson, Leithwood, & Strauss, 2010). Principals who have more positive attitudes about data use tend to use data more (Buske & Zlatkin-Troitschanskaia, 2018). Leaders report feeling that having data makes it easier to have honest conversations about educational processes (Wayman, Brewer, & Stringfield, 2009).

The identified tendency of school leaders to use standardized assessments to identify student needs is problematic for students with disabilities given the need for assessment modifications and accommodations. Educators should be prepared to utilize data from numerous sources to accurately capture and represent student learning. More research will help us understand the types of data educational leaders use and why leaders choose to use them. The type of data used and why leaders choose to use different types of data is important because of the influence that educational leaders have on systemic data use in schools, which is discussed in further detail in the next section.

### ***How Educational Leaders Influence Data Use***

Levin and Datnow (2012) found that principals employed three primary actions that fostered the development of a data-driven environment. First, principals who were successful at facilitating data-driven decision-making in their schools formulated specific

goals that met the needs of their unique school and community environment. This included taking into account additional goals or initiatives that existed prior to establishing the organizational system for data. Second, principals provided structures that supported data-driven decision-making by creating reference guides and providing opportunities for teachers to create their own assessments and benchmarks, which promoted a sense of distributed leadership and internal motivation. By doing this, principals offered opportunities for professional development and set aside specific time to collaborate with teachers directly or allow teachers to work with each other on data initiatives. This practice follows the recommendation of Earl and Katz (2002), who highlighted the importance of time set aside for data use as an important factor in successfully establishing data use in a school culture. Finally, principals did all this while creating an environment based on trust and collaboration as everyone learned how to incorporate data into daily routines as a team (Levin & Datnow, 2012).

Cosner (2012) found that leaders who utilized a strategy of leadership that encouraged collaboration and support with and among teachers were more successful at developing school-wide data practices. Therefore, when leaders seek to establish systems of organization for data use, they need to consider not only processes of data collection and reflection, but also their own leadership decisions. Clear communication of tasks along with explicit explanations of processes, rationales, and expected outcomes were also important for leaders to consider (Cosner, 2012). A distributive style of leadership also fostered increased data use. By including teachers in conversations and decision-making processes, teachers were more likely to understand the importance of using data,

and take ownership of the process in their own classrooms (Cosner, 2012; Wayman, Brewer, & Stringfield, 2009).

The important role that leaders play in the use of data in their schools and districts is necessary to consider when evaluating the use of data in a school or district. The attitudes of leaders towards data use are likely to impact the attitudes of those they supervise. A thorough understanding of the types of data leaders choose to use and why they choose to use them when making decisions about students in special education is important to understand in order to appropriately examine the data practices of other school and/or district personnel. The factors that influence leaders' use of data are explored in the next section.

### ***Factors that Influence Leaders' Use of Data***

One of the major barriers to educational leaders data use is a lack of understanding or confidence about the leader's ability to interpret and make decisions based on data. The Center for Applied Research and Educational Improvement (CAREI) at the University of Minnesota recently completed a needs assessment that focused on research, evaluation, assessment, and data use in schools (2016) that supported this finding throughout the state of Minnesota. Many educators believed that data could help improve educational decision making, but that their ability to use data was lacking. The study surveyed over 800 educators from around the state of Minnesota, but did not ask specifically about organizational role, educational context, or special education. Most believed that quality data could improve decision-making. Some of the most frequently cited uses for data included monitoring student and district progress, individualizing instruction, and evaluating program effectiveness.

CAREI's study identified the specific needs and barriers that Minnesota educators reported in relation to data use. Educators in Minnesota identified time set aside specifically for data use practice, training on data use, increased access to expertise on data use, and organizational support as the factors most important to incorporating data use into practice. Barriers that educators identified included a lack of training, the timeliness of data being available, and a lack of time built into schedules. (CAREI, 2016).

Even when leaders had a positive opinion of data use, many reported feeling insecure about their own skill at correctly collecting, analyzing, and interpreting information about their schools (Earl & Fullan, 2010; Shen et al., 2010). Educational leaders who reported using assessment results more than any other type of data reported that this was because they were most confident about their ability to understand it, compared with other types of data such as student background (e.g. free or reduced lunch eligibility and demographic information) or school process data (e.g. suspension records and attendance data) (Shen et al., 2010). This narrow focus on using data is also evident when principals were asked about how they use data. The primary answers were for accountability purposes and school improvement decisions (Shen et al., 2010). However, due to the small sample size, the ability to make assumptions or generalizations based on the findings of this study is limited.

It is essential that educational leaders know how to use data from a variety of sources and for numerous purposes in order to make quality programmatic decisions for students in special education. More information is needed about what data educators use and how both role and context influence how they use data as it specifically relates to

special education. Guidelines for data use among educational leaders are detailed in the next section.

### ***Guidelines for Leaders' Use of Data***

Earl and Katz (2002) made recommendations for leading schools successfully in a data-rich world. They argue that for leaders to be successful data leaders, they need to turn data use from an external to internally motivated practice. That is, educational leaders should view data as a method for improvement, rather than a tool for surveillance in service to outside organizations. The recommendations the authors proposed are based upon their review of how leaders interact with information and the barriers that often impede effective data use. This review incorporated research findings from areas of inquiry such as educational reform, benefits of data use in organizations, leadership capacities, and motivation. The authors recommended three areas of development for leaders to focus on based on their review: (1) developing an inquiring habit of the mind, (2) becoming data literate, and (3) developing the ability to differentiate between sound and unsound data.

The first recommendation calls for educators to develop an “inquiring habit of mind.” That is, they should recognize and act upon the understanding that they have the ability to create or locate the information that can be useful for solving the problems they face. In order to do this, Earl and Katz (2002) suggest that leaders must value a deep understanding of all situations, and not simply seek information that confirms what they already believe. Leaders should also reserve judgment and be able to tolerate ambiguity. This ties in with them seeking a deep understanding of issues. The authors suggest that in order for leaders to use data successfully, they need to accept that the inquiry process is

not one of instant gratification, and that data often requires extensive investigation to come to an informed conclusion. The final aspect of developing an inquiry habit of mind is drawing from a range of perspectives and systematically posing increasingly focused questions. The authors' caution that instead of neatly answering a question, data often leads to more and deeper questions, and that leaders cannot be afraid to view a situation from multiple perspectives and ask questions necessary to reach a conclusion.

The second area of focus for leaders who want to successfully utilize data is to become data literate. As found by other studies, leaders often report feeling that they do not have the background knowledge or skills necessary to use data correctly (Earl & Fullan, 2010; Shen et al., 2010; CAREI, 2016). In order to develop data literacy, Earl and Katz (2002) recommend that leaders first consider the purpose of the data to ensure it is appropriate to answer a question or situation at hand. Leaders must ensure that any data being used is appropriate for the problem it is being used to solve, and not just being used simply because it is available. Additionally, it is important for leaders to pay attention to their audience in order to report data in the correct way so that stakeholders may understand it.

Leaders also need to be able to recognize sound and unsound data and interpret it correctly. Not all data are legitimate, and educational leaders must know enough about how to differentiate good data from bad data to be able to recommend, or not, the use of data from a particular data set. Leaders also need to be knowledgeable about statistics and measurement. Leaders will need to become active seekers and consumers of professional development opportunities in order to develop these skills (Earl & Katz, 2002). These skills are important in order for leaders to utilize data beyond assessment data for

accountability purposes, which previous research has established are the most often type of and use for data in in general education (Wayman, Cho, Jimerson, & Spikes, 2012; Marsh, Pane, & Hamilton, 2006, Shen et al., 2010; Murray, 2012; Young, McNamara, Brown, & O’Hara, 2018). However, little is currently known about how educators use data for students in special education programs.

### ***Summary of Leadership Literature***

The leadership literature focuses on the important role that the educational leader plays in establishing data use processes in schools, and how the decisions they make influence educators’ use of data for student, instructional, and classroom decisions. This literature perspective highlights the influential role that the educational leader has in making or breaking the practice of data use in schools. The research suggests that, along with an organizational system for data, it is important for leaders to examine his or her own leadership to ensure they are not compromising the ability of the school to utilize data because of their leadership decisions. It also calls into focus the importance of the leader being a data-use expert in her or her own right. It is not enough to encourage others to use data if the leader does not understand how to use data to make decisions as well. Finally, the research reviewed highlights the highly context-dependent nature of the educational leader.

The research on leadership reviewed here relies primarily on an interpretive perspective, which defines knowledge and reality as being subjective from individual to individual. Reality is constructed through interactions, language, shared meanings, consciousness, and other aspects of human nature in this epistemological (Guba & Lincoln, 1994; Orlikowski & Baroudi, 1991; Scotland, 2012). The studies in this review

focus on the role of the leader as an important facilitator of individual school culture, as well as someone who is responsible for making decisions that impact unique and diverse groups of individual teachers and students. The studies reviewed rely significantly on case studies of different schools, leaders, and environments to understand how and why data are used in schools. The literature on leadership recognizes that a school's environment and culture is individually shaped by the values, motivations, and experiences of the people that work and learn there every day, and that a school leader impacts the staff, culture, and students, and they in turn impact the leader.

As detailed above, the ability of standardized assessments to provide data that accurately represents the learning of students receiving special education services is questionable. Leaders have a unique opportunity to foster data use in schools, and this may be most important for those students who are often misrepresented by traditional assessment data. Further research is necessary to gather information on what kinds of data leaders use and how they use data for students in special education.

Without a greater understanding of how leaders in special education interact with data when it comes to making decisions or functioning in the role of a data leader in their school, we do not yet have a clear picture of how data influences program decisions for students in special education. Given the unique needs of students receiving special education services, it is essential we obtain a better understanding of the types of data educators use for students in special education, and how organizational role and educational context affect data utilization.

## **Data and Assessment**

The literature on data and assessment is a broad field of research, making it necessary to narrow the scope of that body of literature for this review. Research on data and assessment explores the intricacies of organizing, interpreting, and utilizing data from numerous sources. Relevant literature also describes the design and administration of assessments for diverse groups of learners, including assessment accommodations and modifications commonly employed for students in special education. An understanding of how assessments are designed and the role of modifications and accommodations is essential in order to understand the how assessment data should be interpreted for students in special education.

Similar to the literature on leadership reviewed above, there is often an absence of empirical research focusing on the relationship between data and special education. Much of the information available is drawn from legislation such as the Individuals with Disabilities in Education Act (IDEA) or the Every Student Succeeds Act (ESSA) that detail the data requirements for schools to report on. IDEA requires the use of data for both special education evaluations and Individual Education Plan (IEP) goal tracking, while ESSA requires assessment data to be collected and reported for all students, including those who receive special education services. Apart from these legislative resources, however, research could not be located that specifically focus on data use in special education.

### ***Data Use in Education***

Merriam-Webster (2017) defines data as “factual information (as measurements or statistics) used as a basis for reasoning, discussion, or calculation.” While true, this

definition lacks the flexibility and nuance necessary to understand all of the ways in which data may be used in education. Data are often used in different ways depending upon the purpose it is being used for and the role of the person using it. Data can be used and compiled in numerous ways in order to provide information regarding a specific purpose. Bardach (as cited in Alexander, 2013) situates how data relates to information and evidence, suggesting they are the building blocks to the more specific purpose that data assembled, interpreted, and presented correctly can have. He notes,

Data are facts ... Information consists of data that have “meaning,” in the sense that they can help you sort the world into different logical or empirical categories. Evidence is information that affects the existing beliefs of important people (including yourself) about significant features of the problem you are studying and how it might be mitigated (p.11).

The usefulness and relevance of data can vary significantly depending upon the purpose it may be serving. At different times, the same data may be used for summative accountability and reporting purposes or formative progress data for classrooms or students. There are numerous ways that data can be classified. Marsh, Pane, and Hamilton (2006) identified four types of data relevant to education. These are input, process, outcome, and satisfaction data. Input data describe a particular piece of information that goes into making up the educational setting, such as student demographics or resources on which the school chooses to spend. Process data describe the ongoing activities taking place in the school, such as instructional quality. Outcome data include information that represent a culmination of an event or time period, such as dropout rates at the end of a semester or school year, or student test scores at the end of a

unit, semester, or school year. Satisfaction data include comments and opinions on the educational environment and operations from teachers, students, parents, community members, or others. Ikemoto and Marsh (2007) and Schildkamp and Earl (Eds, 2012) also accept this system of data categorization.

While this description offers a way of summarizing data, it does not provide any method of organizing the ways in which data are used. Consider a student's end-of-year exam score. That piece of data is likely to be used for accountability to administrators, district leaders, state education departments, parents, and other stakeholders. A teacher, who has a vastly different role than someone responsible for reporting accountability data to the state, may use that same test score as part of their classroom data to modify classroom activities, curriculum choices, or future lesson plans. A teacher, specialist, or school psychologist may use the test score to diagnose a problem or to help solve an existing problem. Leaders may use student test scores as part of their administrative data when deciding whether to retain teachers from year to year. The purpose for which data are used is an important factor to consider, as is the organizational role of the person using the data. More research is necessary in this area to determine how educational context and organizational role affect data use.

Data can be formative and summative. That same student test score may represent a summative illustration of the student's school year to someone primarily concerned with accountability reporting, but may, to a teacher, therapist, or school psychologist with a greater interest in meeting that student's individual needs, the test may be just one piece of formative data. Data in the first situation is an event, and the second represents how data can be used as more of a process. While some patterns may generally emerge (e.g.

summative data are more often used for the purposes of accountability or administration in an event-like way, formative data are more often used as classroom or problem-solving data in a process-like way), the role of data are highly context-specific depending upon the purpose of its use, and the people interacting with it. The roles that data can serve are numerous, which makes it even more vital that educational leaders feel comfortable using and interpreting information from a variety of sources.

In order to address this concern, this study elected to categorize data by type rather than the purposes it is used for. Four types of data were identified for this study: academic, behavioral, engagement, and fidelity of implementation. Academic data was chosen due to its prevalence throughout the data literature and the accountability requirements that began with NCLB. For this study, academic data was defined as information that provided insight into students' educational progress. Behavioral data was selected based on the established connection in the literature between student behavior and referrals to special education services (Bergh & Cowell, 2013). Behavioral data for this study was defined as information related to student behavior incidents and resulting disciplinary referrals or action. Engagement data was chosen due to the established pattern in the literature that shows students receiving special education services tend to report lower engagement (Moreira et al., 2015). Engagement data for this study was defined as students' level of involvement and motivation to the school and learning. Fidelity of implementation data was chosen for this study due to its ties to data-driven instruction (Bianco, 2010), and the established ties to successful interventions for decreasing problem behaviors for students (Flannery, Fenning, Kato, & McIntosh, 2013).

Fidelity of implementation was defined for this study as the extent to which the guidelines for delivering a curriculum or intervention program were followed.

Insight into what data educators use and the purposes they use them for is essential to ensuring a clearer understanding of the decisions being made by leaders for students in special education. The educational context and organizational role must also be given consideration when exploring data use in special education, as the role or context can affect how and why data are used. The following section discusses the ways in which schools organize data, and how those systems influence data use.

### ***Factors Influencing the Success of a Data-Driven School***

In addition to educational leaders, there are numerous factors that determine the success of a data-driven school initiative. Marsh, Pane, and Hamilton (2006) identified eight different areas for educational leaders to consider when implementing this type of organizational system. Along with administrative support, these included data accessibility, the quality (real or perceived) of data, motivations for data use, how quickly data were made available for use, staff capacity and support, curriculum pacing and pressures, and the availability of time. Educational leaders supported all of these other areas by establishing a school culture that encouraged collaboration and openness to sharing data and knowledge. This study utilized a primarily interpretive perspective, attempting to describe the current state of data use in schools through the review of previous research.

Wayman, Cho, Jimerson, and Spikes (2012) found that there were three types of data systems common in schools: student information systems, assessment systems, and data warehouses. Student information systems (SIS) handle daily information such as

attendance, class assignments, and other basic student information. Assessment systems are designed to quickly organize test data. Data warehouses were the most comprehensive of the three systems, as they were designed to integrate data from a variety of systems and provide a long-term, inclusive illustration of student performance. All of the schools in this study utilized SIS, and some used assessment systems, but few regularly used data warehouses (Wayman, Cho, Jimerson, & Spikes, 2012). The authors in the study relied on an interpretive epistemology, conducting case study research with focus groups and interviews. This approach provided rich information about how different data systems can be used, but findings from case study research generally cannot be generalized to locations other than those included in the study. For example, types of data systems schools use may vary drastically from state to state or even district to district.

A data-warehouse type of organizational system is similar to the data-driven organizational systems that have been studied by Halverson and his colleagues (Halverson, Prichett, Grigg, & Thomas, 2005; Halverson, Grigg, Prichett, & Thomas, 2007; Halverson, 2010). The data-driven instructional systems model (DDIS) includes six primary functions necessary for establishing a data-driven district and is intended to assist educational leaders with developing school capacity for data use. The six areas of DDIS include: (1) data acquisition, (2) data reflection, (3) program alignment, (4) program design, (5) formative feedback, and (6) test preparation. Data acquisition refers to the process of collecting and preparing information for use. Data acquisition involves all types of data, not just assessment results. Student demographics, behavioral records, placement information, and other information can all be used to inform instructional

decisions (Halverson, Prichett, Grigg, & Thomas, 2005; Halverson, Grigg, Prichett, & Thomas, 2007). A successful DDIS allows educational leaders and teachers to utilize numerous types of data to assist with instruction and student learning. It also promotes school capacity for data use and helps leaders reach accountability goals (Halverson, Prichett, Grigg, & Thomas, 2005).

Data reflection follows data acquisition and includes the process of interpreting data and planning how to best use the information to improve the school program.

Program alignment refers to the process through which a school or classroom's instructional program is aligned with content and performance standards. Program design follows program alignment and is the action that takes place after decisions have been made through data reflection and program alignment activities. Formative feedback refers to evaluation cycles that are established that provide teachers and leaders access to a constant stream of information that can be used to continually improve instruction and student learning. Finally, test preparation includes activities designed to help students develop strategies for improving performance on local, district, and state assessments (Halverson, Prichett, Grigg, & Thomas, 2005; Halverson, Grigg, Prichett, & Thomas, 2007).

Halverson (2010) attempted to implement formative data feedback systems in nine schools to foster data-driven instructional systems. Through interviews, observations, meetings, and professional development, the researcher found that the schools that utilized this type of data organization process were successful at establishing formative-feedback systems. These systems allowed teachers and leaders access to a constant stream of student achievement information that could be incorporated into day-

to-day activities and decisions to create responsive and current instructional activities.

Carlson, Borman, & Robinson (2011) studied a similar data-organization system. They found that student achievement in both math and reading increased following a one-year implementation of a data-driven system.

Marsh, Pane, and Hamilton (2006) went a step further and provided a conceptual framework for data-driven decision making (DDDM) in an educational setting. They described the products from four sources of data (input, process, outcome, and satisfaction, as defined earlier) as information, and that information is quickly turned into actionable knowledge. Actionable knowledge describes the process by which those people seeking to use the information are able to “synthesize...apply their judgment to prioritize it, and weigh the relative merits of possible solutions” (Marsh, Pane, & Hamilton, 2006, p. 3). Once this process is complete, the users can then apply the actionable knowledge they have obtained to different types of decisions commonly made in an educational setting, such as setting goals, addressing individual or class needs, identifying students who may need additional support, or determining if resources are sufficient and being allocated correctly, just to name a few.

The decisions educators make based on the DDDM process are categorized into two types: those that require data to inform (e.g. setting student goals), and those that use data to act (e.g. obtaining a specific curriculum to address an identified learning disability). Once the process of making decisions has been complete, the process begins again, collecting new data based on the changes that were made through the information, actionable knowledge, and decisions. This framework assumes, however, that the data used are high-quality and accurate (e.g. that assessment results are a reliable and valid

representation of student learning), and that users of information and data have appropriate training and/or the necessary supports to correctly interpret the data they are using. If these assumptions are not met, invalid conclusions may be drawn and appropriate action cannot be taken (Marsh, Pane, & Hamilton, 2006).

The establishment of DDIS and DDDM is an essential step in promoting data use in schools. Information on the kinds of data educators are using, the purposes for which they are used, and the role and context in which these data are used in order to make decisions for students in special education should be collected before more specific recommendations regarding a DDDM framework for students in special education can be established. The next section focuses on standardized assessments for students with disabilities.

### ***The Role of Standardized Assessments for Students with Disabilities***

The role that assessments have in the education of students with disabilities is dynamic. The remainder of this section will discuss the process assessments must go through in order to be accessible and valid measures of student learning, and the reasons why assessments designed with standardization as the ultimate goal may not provide the best indicator of a student's progress or abilities. However, it is imprudent to dismiss the benefits that have also been seen since the No Child Left Behind Act (2001) was signed into law and schools have been required to account for the achievement of students with special needs.

Ysseldyke et al. (2004) summarized the consequences, both positive and negative, of high-stakes testing for students with disabilities. While the potential high-stakes nature of assessments may have changed over time with updated legislation, many of the

consequences are likely the same, as the requirement of testing has not changed substantively over the last decade and a half. One of the new requirements introduced by No Child Left Behind (2001) was the guideline that students could not be excluded from testing based on their disability status. Students' participation in standardized tests led to an increase in alignment of IEP goals with state assessments, increased access and alignment to the general education curriculum, and higher standards for students with disabilities. The increase in the number of students with disabilities participating in statewide testing also led to an increase in the use of accommodations, which are discussed in greater detail later in this section. The latest iteration of The Elementary and Secondary Education Act (ESEA), the Every Student Succeeds Act (ESSA) maintains the requirement that students in grades 3-8 take an annual assessment, and that 95% of students in each subgroup category be tested, including students who qualify for special education services (ESSA, 2015).

The negative consequences of increased reliance of standardized assessments that Ysseldyke et al. (2004) found affected students both with and without disabilities. These included a narrowing of the curriculum or "teaching to the test," the development of educational tracks (e.g. high performers and low-performers). Other consequences included the requirement of supplementary services for students who fail to perform well, increased high school dropout rates, and the linking of grade retention and advancement decisions to standardized test scores.

The authors concluded that, if planned and administered correctly, the inclusion of students with disabilities in standardized assessments can lead to an increase in performance and expectations, and that "using a systemic framework and using data to

inform policy decisions regarding students with disabilities and large-scale assessment is best practice” (Ysseldyke et al., 2004, p. 91). The factors that go into ensuring that this process is done correctly will now be discussed in greater detail.

### ***Design, Accessibility, and Validity of Standardized Assessments***

Assessments are used to capture student learning in a measurable, reportable way. Since the passage of the No Child Left Behind Act of 2001, which mandated increased accountability for schools (NCLB, 2002), standardized assessments have become ubiquitous in the United States’ education system. The Individuals with Disabilities in Education Act (IDEA), section 300.160 states mandates that all students identified as having a disability be included in all state and district assessments, with appropriate accommodations or alternative assessments available as required by each students’ Individual Education Plan (IEP) (IDEA, 2004). When students who require special education services participate in standardized exams, assessment accessibility and validity become even more important to understand than when assessments are conducted without IEPs.

Accessibility refers to the “opportunity for test-takers to demonstrate proficiency on the target construct of a test” (Kettler, Elliott, & Beddow, 2009, p. 530). That is, a test is accessible when any student, regardless of their individual characteristics, is able to participate in the testing environment. For students with disabilities, this can mean permitting these students to use appropriate and reasonable accommodations to support them during a test situation. Validity refers to the extent to which an assessment measures the constructs it was designed to measure.

The process of determining the accessibility of test items is not a simple one, but it is a necessary step in the construction and design of every assessment. Kettler, Elliott, & Bedlow (2009) detailed the multi-step process necessary to determine the accessibility of assessments for all students. Construct validity is another important component of assessments. A construct is defined as a quantitative or qualitative attribute that a person can possess. Construct validity, therefore, is the accuracy with which an assessment measures the construct it was designed to measure (e.g. word recognition, silent reading fluency, etc.) (Wiliam, Klenowski, & Rueda, 2010).

The process of designing and validating assessments is an important one to understand for those individuals who plan on using the results to make decisions for students. This is especially important if the students require accommodations or modifications to access the test, as additional considerations regarding the validity of the results representing the students' learning must be taken into account. Whether or not educators in special education understand the process of designing assessments and the implications for the data obtained from the assessments is unclear given the lack of previous research on data use in special education. The next section discusses assessment accommodations or modifications often used for students in special education.

### ***Accommodations and Modifications***

One area of assessment research that touches upon special education investigates modifications and accommodations. There is a general consensus about the definitions of accommodations and modifications among the research included in this review. The purpose of accommodations and modifications is to increase the validity of interpretations made about assessment score results for students who would not be able to

demonstrate their proficiency through an unmodified assessment (Kettler, Elliott, & Bedlow, 2009). However, relatively little is known about whether leaders in special education understand the limitations of accommodations and modifications, and whether they are taken into account when data are utilized from assessments.

Accommodations refer to changes made to the prescribed administration of an assessment that do *not* alter the construct being measured (Buzick & Laitusis, 2010; Kettler, Elliott, & Bedlow, 2009; Sireci, Scarpati, & Li, 2005; Thurlow & Kopriva, 2015). The purpose of accommodations is to allow a valid comparison of scores between and among those students who both did and did not require accommodations. Without accommodations, some students' scores arguably would not result in valid interpretations of their knowledge and proficiency of the construct being tested. Accommodations generally refer to changes in the location, presentation, or time constraints of the administration of an assessment (Ketterlin-Gellar, 2008).

Thurlow and Kopriva (2015) specified three principles to guide the selection and application of accommodations: (1) they should not alter what the assessment is measuring, (2) scores between students who received accommodations and those that did not are comparable, and (3) accommodations should be beneficial only for students with disabilities and neutral for those without. To clarify the third principle, this means that if all students received the accommodation, it would only benefit those students with a disability, and would not affect the scores of those students without the need for an accommodation. An example of this would be a large-print version of an assessment: This accommodation would increase the accessibility of the test for students with a vision

disability, but would not alter the way a student without vision problems completed the assessment (Thurlow & Kopriva, 2015).

In addition to accommodations, modifications are also changes made to the standard administration of an assessment, but differ in that they *do* alter the construct being assessed. An example of a modification would be reading questions out loud to students when word recognition or silent reading proficiency is part of the construct that is being assessed (Thurlow & Kopriva, 2015). In their discussion of test accommodations and modifications, Thurlow and Kopriva (2015) utilized a critical epistemological perspective, drawing on the history and controversies surrounding their use and the role they play in equity in education.

In order to design appropriate accommodations, Wiliam, Kleowski, and Rueda (2010) stressed the importance of examining the constructs that each assessment item is measuring and the appropriateness of each construct for the population being assessed. The authors suggested that the validity of an assessment during the design phase should consider technical design aspects with the same rigor as whether or not it can appropriately measure the learning of all students.

The use of accommodations or modifications for students in special education should be considered when interpreting the resulting data. Given the review of educational administrator licensures earlier, it is not reasonable to assume that principals have had any formal training in assessments, data interpretation, or special education. Without more information on how educational leaders are currently utilizing data, including data from assessments that may have been given with accommodations or modifications, there is little understanding of how this data may influence the

programmatic decisions leaders are making for students in special education. What research has been conducted on leaders and their use of assessment data for students in special education is reviewed in the next section.

### ***Factors Influencing the Use of Assessments***

Buzick & Laitusis (2010) identified five factors that may influence educators' ability to utilize assessment results from students identified as having a disability, including the use of accommodations and modifications. They argued that there is little oversight from year-to-year on the specific accommodations and modifications provided for individual students, which makes it difficult to attribute changes in test scores to actual learning growth. Without oversight, changes could just as easily be attributed to inconsistency in the use of accommodations or modifications rather than actual changes in knowledge or skills.

The other factors that Buzick and Laitusis (2010) identified as affecting the utilization of assessment results include large percentages of students performing below grade level, the movement of students across testing programs from year to year (e.g. taking the regular state assessment one year, and the alternative assessment the next), changing disability classifications, and the psychometric properties of alternate and modified assessments. Importantly, the authors pointed out that administering a non-adaptive assessment to a population with a wide range of proficiency may affect the accuracy of the resulting data. Using a non-adaptive assessment often produces less precise results, lower reliability, and inappropriate interpretations based on test scores for individuals who perform at the extremes of the distribution (Buzick & Laitusis, 2010).

There are numerous considerations that must be taken into account when utilizing assessment data from students in special education, and yet only one study has specifically focused on the intersection of data use and special education. Additional research is necessary to inform policymakers on the kind of data educational leaders use for students in special education, including how they utilize assessment data. Without this information, it is unclear how programmatic decisions made by educators for students in special use data.

### ***Summary of Data and Assessment Literature***

Researchers who investigate data and organizational systems seek to make data from numerous sources accessible to teachers and educational leaders, rather than focusing solely on assessment data. Without the understanding and capacity to organize and synthesize student data from many different sources, educational leaders may struggle to meet accountability goals, especially considering the attention that has been paid to data and test results since the passage of No Child Left Behind in 2001 (NCLB, 2002) and its reauthorization as Every Student Succeeds Act in 2015. The ability to use data is an important skill for educational leaders to develop in order to represent accurately the instruction and learning going on in their schools. Four types of data were identified for investigation in this study: academic, behavioral, engagement, and fidelity of implementation. To date, there is little information available about how educators use data in special education. This gap in research must be addressed in order to better understand how educators in different organizational roles and educational contexts use data to serve students in special education.

## **Summary of Chapter II and Implications for Research**

There is a wealth of research on educational context, leadership, and data and assessment. However, relatively few studies have looked specifically at how context and organizational roles intersect in terms of the purpose and kinds of data that educators use to support students with special needs. Several gaps in this literature have emerged through this literature review. Most notably, the author could locate little research that focused specifically on data use and leadership with respect to special education. The existing literature gap regarding what data educational leaders use and for what purposes must be addressed in order to ensure that leaders are able to use data from a variety of sources to make programmatic decisions about how best to support the progress of students in special education. It is important to provide a starting point for understanding how educators in different organizational roles and educational contexts utilize data for special education. By addressing this research gap, a better understanding of how to utilize data to improve educational programs for students who require special education may emerge.

## Chapter III: Methods

### Research Design and Rationale

#### *Epistemological Perspective*

Knowledge in this study is socially constructed. What is relevant and successful in one educational setting is likely not to be so in a different setting. The values, behaviors, and social cultures that organize an educational environment are very important for constructing knowledge that is meaningful for that particular setting of group of people. While knowledge and information obtained from one educational setting can guide and inform practice in another setting, the reality is always going to be a little bit different because of the vast amounts of human emotion and nature that go into creating a successful educational environment.

This study is grounded in an interpretivist perspective, which allows for a deep exploration of data use among leaders as it relates to students accessing both general and special education programs. The purpose of this study is to understand how educational leaders use data to support and account for the progress of students with special needs. Ultimately, the findings of this study help provide educational leaders with useful information that fosters effective and equitable education practices that support students requiring special education services. By approaching this study from an interpretivist perspective, it can be sensitive to the different responsibilities of education leaders and the unique settings that the study took place in. This allows for a rich understanding of how data are used by leaders in relation to special education in different settings.

A limitation of this study includes the inability to generalize the findings from the data, as the data collected was from a purposive not random sample. This study utilized a

small sample size, 19 interviews, which further inhibits the ability to generalize information. However, the small sample size allowed for the collection of a rich dataset that allows for a deeper understanding of the nuances of how and why educational leaders use data. The richness of data will allow leaders in other settings to identify how their own data practices are similar or different, and gain some insight into how these practices may be improved based on the insights provided by the leaders in this study.

Finally, there is often a discrepancy between the size of charter schools and traditional public schools, with the latter serving many more students than charter schools. This reality further limits the generalizability of the study findings regarding the implications of school type since differences in data use may be tied to school size and not school type. Nevertheless, a research study that provides a deep understanding of the setting and culture is important for studying leadership in education, because leaders can have an important effect on the setting and culture of a school (Earl & Katz, 2002). This is particularly important when little is currently known about how educational leaders interact with data as it relates to special education. The findings from this study are a first step in developing a more complete understanding of data use vis à vis students with special needs.

### ***Study Design***

There are two overarching methodologies of conducting research that together encompass the different methods and processes by which data are actually collected. The quantitative method generally attempts to maximize the objectivity, generalizability, and replicability of the research findings, while qualitative research focuses less on

objectivity and more on understanding the perspectives and experiences of those participating in the research study.

An inductive, qualitative approach was appropriate for this study based on the goal of obtaining understanding and insight into how individuals in different organizational roles and educational contexts perceive their use of data for students in special education. The information collected in this study serves to fill a gap in the literature and provide a basis upon which future research and recommendations to educators can be built.

### ***Site Selection***

Data were collected from leaders that have responsibilities to support and account for the progress of students in special education at schools that serve elementary students in grades K-6. Schools serving elementary students were chosen due to the predictive nature of student engagement and success in early grades for both academic and mental health outcomes throughout school and into early adulthood (Alexander, Entwisle, & Dauber, 1993; Miles & Stipek, 2006; Hughes, Luo, Kwok, & Loyd, 2008). Fostering student engagement and ensuring successful school experiences in early grades is essential for giving students the tools they need to continue to achieve.

Context was studied by collecting data from charter schools and traditional public schools in order to explore the role that school type (charters versus traditional public schools) might play on how educators use data in support of special education students. It was expected that context will play a role in the types of data and the purposes for which they are used between educators at traditional public and charter schools given the

differences in how they are governed, organized, and to whom accountability measures are reported.

Elementary charter and traditional public schools from the Twin Cities and surrounding areas were eligible to participate in this study; thus, the purposive sample was drawn from this population. The researcher identified potential participants through a leadership development program designed specifically for school principals. There is a potential to confound by using this group in that principals who seek out a leadership program are more involved and likely to use data for student improvement than principals who do not seek out a leadership development program. However, this method of participant recruitment may also mean that leaders who participated in this study are individuals who are committed to their roles and fostering student improvement and can therefore provide valuable insight on the data practices of high-quality principals and leaders in education.

Schools that are special education schools (e.g. >90% SPED enrollment) were not considered for participation in this study. The exclusion of this type of school was an effort to ensure that the study findings will reflect a more typical experience of leaders who make decisions for special education students. Leaders in schools with more than 90% SPED enrollment are unlikely to differentiate their typical general education data from special education data due to the high number of students receiving services.

Twelve principals were identified and contacted via email explaining the purpose of the study and asking if they would be interested in participating. The email communication that was used to contact the individuals identified by the principal can be found in Appendix A. Ten principals consented to participate - five from elementary

charter schools and five from traditional public elementary schools. This comparison is particularly meaningful given the heavy emphasis on establishing charter schools in national legislation in recent years (Every Student Succeeds Act, 2015). Once a principal agreed to participate in the study, the next phase of the study began.

Table 1 summarizes the demographic data from each site that participated in the study. Specific demographic enrollment information such as location and exact enrollment and special education percentage numbers have been left purposefully vague or excluded to ensure the anonymity of participants and schools. For the purposes of this study a “small” school refers to schools with an enrollment of less than 250 students, a “medium” school encompasses schools with an enrollment between 250-500 students, and a “large” school refers to a schools with an enrollment with over 500 students.

Table 1

*Site Demographic Information*

<b>School</b>	<b>Approximate Enrollment</b>	<b>% of students receiving SPED services</b>
<b>Charter A</b>	Large	10-15%
<b>Charter B</b>	Medium	5-10%
<b>Charter C</b>	Small	10-15%
<b>Charter D</b>	Small	15-20%
<b>Charter E</b>	Medium	10-15%
<b>Traditional Public A</b>	Large	10-15%
<b>Traditional Public B</b>	Medium	10-15%
<b>Traditional Public C</b>	Large	10-15%
<b>Traditional Public D</b>	Large	15-20%
<b>Traditional Public E</b>	Large	15-20%

***Participant Selection***

The importance of organizational role was studied through the use of a purposive sample of participants from the school sites. The individuals from whom data were collected was determined by asking the principal of selected schools to identify those individuals who have the authority to make progress decisions for students in special education, excluding classroom teachers. Classroom teachers play an important role in making decisions for students in special education, but the purpose of this study is to gain a better understanding of how those in leadership roles use data to support those students.

The researcher asked each principal to identify one or two additional individuals with responsibilities relevant to the study. The roles of that principals included social workers, school psychologists, and special education coordinators, among others. This method of participant selection was an effort to identify the different roles that individuals who may use data to make decisions for students in special education occupy and not limit the selection to specific job titles or positions. By conducting this study with a purposive sample of educational leaders, the data collected represented different perspectives and uses of data by leaders responsible for supporting students in special education. These individuals provided a rich understanding of how data are used by leaders in different positions to make decisions for students in special education.

After a principal agreed to participate in the research study, the researcher provided him or her the consent form and a date and time was agreed upon to schedule the interview. Following the conclusion of interviews (interview procedures are described in more detail in the next section), the researcher asked each principal to provide the name and contact information of one or two individuals in their school who fits the description of an “educational leader” as defined for this study. That definition is “an individual with the authority to make decisions that directly impact student progress, including decisions about program placement, access to resources, and daily classroom support.” The purpose of this definition is an attempt to include all those individuals who may use data to influence the program of special education students within the schools.

Once the name and contact information of an educational leader at each principal’s school was received, the researcher contacted the individuals to describe the study and inquire about their willingness to participate. If they agreed, the researcher

provided the consent form and scheduled a time for the interview. If they declined to participate, no further contact was initiated. The email communication that was used to contact the individuals identified by the principal can be found in Appendix B. Table 2 details the demographic information of all 19 participants. Some information has been left purposefully vague or omitted to ensure participant anonymity is maintained.

For the purposes of exploring results, individuals in a principal or director role will be referred to as “principals,” while individuals who were identified by the principal as a leader for students in special education will be referred to as “administrators” or by their specific job title (e.g. school psychologist). Participants as a whole, both principals and administrators, will be referred to as leaders or educational leaders. In the “educational background” category, if a participant reported obtaining a degree in education, including a teaching license, they are listed as having an “education” background. If they reported a degree outside of education, they are listed as having a “non-education” background.

Table 2

*Participant Demographic Information*

		<b>Educational background</b>	<b>Professional background</b>	<b>Educational level</b>	<b>Years in Education</b>	<b>Years in current position</b>
<b>Charter A</b>	Principal	Non-Education	Teacher	Not Specified	16-20	6-10
	Administrator	Education	SPED Teacher	Master's	11-15	6-10
<b>Charter B</b>	Principal	Education	Teacher	Master's	16-20	0-5
	Administrator	Education	SPED Teacher	Master's	11-15	0-5
<b>Charter C</b>	Principal	Non-Education	Teacher	Doctorate	6-10	0-5
	Administrator	Education	Teacher	Not Specified	21+	0-5
<b>Charter D</b>	Principal	Education	SPED Teacher	Master's	16-20	6-10
	Administrator	Education	SPED Teacher	Master's	21+	1-5
<b>Charter E</b>	Principal	Education	Teacher	Master's	21+	16-20
	Administrator	Education	Teacher	Bachelor's	11-15	11-15
<b>Trad. Public A</b>	Principal	Non-Education	Social Work	Not Specified	16-20	0-5
	Administrator	Non-Education	Psychology	Master's	16-20	0-5
<b>Trad. Public B</b>	Principal	Education	Teacher	Master's	11-15	6-10
	Administrator	Non-Education	Psychology	Doctorate	16-20	0-5
<b>Trad. Public C</b>	Principal	Education	Teacher	Doctorate	21+	0-5
	Administrator	Non-Education	Psychology	Doctorate	11-15	6-10
<b>Trad. Public D</b>	Principal	Education	Teacher	Master's	21+	0-5
	Administrator	Education	SPED Teacher	Master's	21+	6-10
<b>Trad. Public E</b>	Principal	Education	Not Specified	Master's	11-15	0-5
	Administrator	---	---	---	---	---

**Data Collection Procedures & Protocol**

Data were collected through the use of semi-structured interviews and document review of publicly available data. Interviews were conducted using an interview protocol

that included a pre-determined set of interview questions on topics such as the data sources leaders report using and the purposes for which they use data. Each interview took between 10-20 minutes to complete. An example of the interview protocol can be found in Appendix C. The benefit of semi-structured interview research is that it allows the researcher to direct the line of questioning to ensure that the discussion centers on the research questions, but still allows a conversation between the researcher and the participant to flow in a natural way. A drawback of interview research is that it does not offer the anonymity as other methods of data collection might, which may make participants only share information that reflects positively on themselves and their work (Creswell, 2014).

For each of the selected sites, the researcher also conducted a document analysis. A review of the school's annual report was used to examine how data reported to the state and/or school authorizer to explore how special education data are reported to various constituents. This was used to provide data complementary to the perspectives obtained from the semi-structured interviews. Document analysis can provide researchers with context regarding the situation they are studying, and can guide the development of additional questions that should be asked in interviews as part of the research. Reviewing documents can also provide insight into the development of the particular facet of an organization over time, which may not be apparent in interview or questionnaire research data. Finally, document review provides a way for researchers to corroborate information gathered from other methods of data collection. A disadvantage of document review is that it provides only a limited understanding of a particular setting or situation (Bowen, 2009).

***Instrumentation***

**Semi-Structured Interview Questions** The following questions were designed to provide information necessary to answer the proposed research questions. Table 3 lays out the specific questions that were asked during the semi-structured interview with each participant. The table is organized to illustrate which of the research question the researcher anticipates the questions in the interview protocol will help to address.

Table 3

*Research Questions and Corresponding Semi-Structured Interview Questions.*

<b>Research Questions</b>	<b>Interview Questions</b>
Background Questions	<ol style="list-style-type: none"> <li>1. How long have you worked for your current school?</li> <li>2. How long have you worked in education overall?</li> <li>3. What is your educational background?</li> <li>4. What is your professional background?</li> </ol>
RQ1: How does organizational role (i.e., principal, school psychologist, counselor) play a part in the kinds of data that educators use to make decisions regarding the progress and support of students with special needs?*	<ol style="list-style-type: none"> <li>5. How would you describe your current role for students who receive special education services?</li> </ol>
RQ2: How does educational context (i.e., charter vs. traditional public school) play a role in the kinds of data that educators use to make decisions regarding the progress and support of students with special needs?*	<ol style="list-style-type: none"> <li>6. What kinds of data do you use to support students in special education?</li> </ol>
RQ3: How do organizational context and individual roles inform the purpose of data utilization for educators supporting students with special needs?*	<ol style="list-style-type: none"> <li>7. Do you personally use ACADEMIC / BEHAVIORAL / ENGAGEMENT / FIDELITY OF IMPLEMENTATION DATA to support students in special education?</li> <li>8. For what purpose do you use ACADEMIC / BEHAVIORAL / ENGAGEMENT / FIDELITY OF IMPLEMENTATION DATA to support students in special education?</li> <li>9. Do you collaborate with anyone within the school on ACADEMIC / BEHAVIORAL / ENGAGEMENT / FIDELITY OF IMPLEMENTATION DATA? For what purposes?</li> <li>10. Do you collaborate with anyone outside of the school on ACADEMIC / BEHAVIORAL / ENGAGEMENT / FIDELITY OF IMPLEMENTATION DATA? For what purposes?</li> <li>11. Are there any types of data specifically that you use for students in special education that aren't used with students who do not qualify for services?</li> </ol>

\*\*Interview questions 5-11 play a role in providing answers to all three research questions. They have been grouped here primarily by the research question they address, but serve to inform more than one.

Prior to asking about each specific type of data identified for this study, participants were given the opportunity to describe unprompted what types of data they use to support students in special education. This approach was taken in an effort to obtain a full understanding of the different kinds of data leaders use. By allowing leaders to discuss their data use without prompting certain types, it allowed insight to be gained on the types of data leaders see as most important in their roles and also provided an opportunity for discussion of data types beyond the four specific ones identified for specific study in this dissertation project.

Data collection and analysis proceeded simultaneously, as summarized by Creswell (2014), wherein “qualitative research will proceed hand-in hand with other parts of developing the qualitative study, namely, the data collection and the write-up of findings.” (p. 195). Following the conclusion of each interview, the interviews were transcribed using a professional transcription service. The researcher removed all identifying items of note from the audio prior to sending the files for transcription to ensure there was no potential for a breach of anonymity.

**Document Review Procedures.** Documents were reviewed and coded with the assistance of a qualitative data analysis program, NVivo, in an effort to keep all documents, notes, and insights organized. The basis of that coding is discussed more fully below.

## **Data Analysis Procedures**

### ***Interview Data Analysis***

The data analysis process included the preparation and organization of collected data, the transcription of audio interviews, the categorizing of data into themes and

relationships through a coding process, and representing data both verbally and graphically.

In qualitative research, interview and other non-numerical data are often analyzed through the use of a coding process. Creswell (2014) describes coding as:

... the process of organizing the data by bracketing chunks (or text or image segments) and writing a word representing a category in the margins. It involves taking text data or pictures gathered during data collection, segmenting sentences (or paragraphs) or images into categories, and labeling those categories with a term, often a term based in the actual language of the participants. (p. 197-198)

Creswell (2014) cites Tesch (1990)'s example of a typical coding process. Data analysis for this study used this as a guide for the coding of interview and document data.

Coding steps for semi-structured interview data included:

1. Researcher read each transcribed review, writing down ideas for codes or highlighting interesting or unexpected points that came up.
2. A separate list of all topics, codes, and ideas that were noted during the first step was created. Examine how these topics, codes, or other ideas assisted with answering the research questions that were posed.
3. Each transcription was run the transcription through the word analysis tool in NVivo to identify frequently used words and additional codes that may be relevant.
4. The researcher read through each interview again and identify segments of text that relate to the codes that were identified during the initial read and NVivo

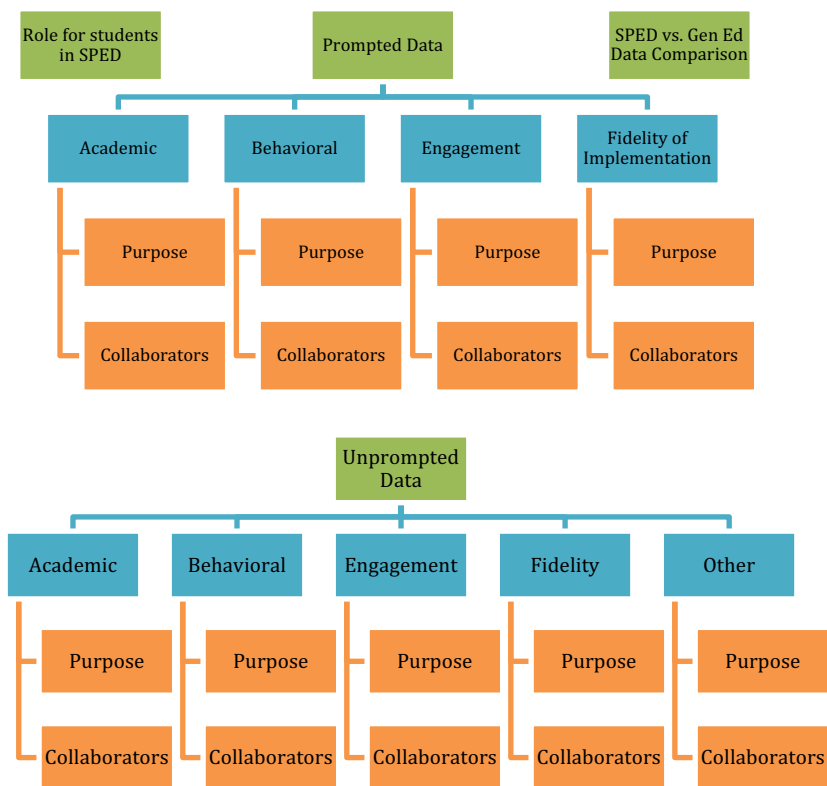
analysis that will assist with answering the research questions. Additional codes or ideas were also noted.

5. Once the entire document had been coded, the researcher examined the document to ensure no relevant information was left uncoded and that the codes used served to answer the research questions. Potential relationships between codes were also noted at this point.
6. The researcher made a final determination of codes for the dataset and coded all documents using the identified codes.

Figure 2 details the final codes that were used to analyze the semi-structured interviews.

Figure 2

*Codes used for Semi-Structured Interviews*



Each instance of data in the semi-structured interviews was coded for type (academic, behavioral, engagement, fidelity of implementation, other), the purposes the data were used for, and the individuals that leaders reported collaborating with. Data were coded separately depending on whether they were reported during the prompted or unprompted portion of the interview. In addition to data types, statements that described the roles leaders had and any statements that drew a comparison between data for students who do and do not qualify for special education were also coded for analysis. Finally, each interview was categorized for a variety of demographic information including school type (charter or traditional public). The educational background, educational level, professional background, role within the school (principal or administrator), specific job title, years in their current role, and years in education of the interviewee were also coded.

Creswell (2014) suggests that codes typically fall into three categories – codes that readers expect to find, codes that are surprising and that were not anticipated, and codes that are unusual. Codes relevant to the identified research questions (e.g. data type, purpose of data use, individual responsibilities) were utilized. Codes that asked specifically about items related to the research questions (e.g. data type, purposes of data use, individual responsibilities, demographic information) were all important and expected codes for this study. Unexpectedly, coding data that participants described unprompted by data type and the ways in which participants described their roles for students in special education yielded some of the most interesting insights for the study.

Following the conclusion of the coding process, descriptions were generated with regard to the ways in which role and setting influenced an individual's use of data.

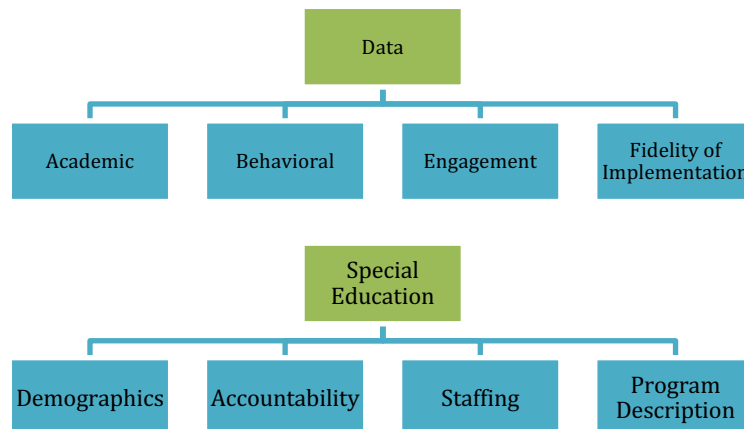
“Description involves a detailed rendering of information about people, places, or events in a setting” (Creswell, 2014, p. 200). The final step in the interview data analysis process involved making an interpretation of the findings, that is, making an effort to put into narrative form what information or lessons were learned because of the study. This information will be explored in depth in Chapters 4 and 5 of this paper.

### ***Document Analysis***

Documents were coded using a similar process as was done for analyzing the interview data. Annual reports for each school were also coded to examine the types of data reported. These documents were obtained from each participating school’s website and coded using the same program, Nvivo, as was used for coding the semi-structured interviews. Figure 3 details the final codes used for the document analysis.

Figure 3

#### *Codes used for Document Analysis*



Each instance of academic, behavioral, engagement, and fidelity of implementation mentioned in the annual reports was coded. All references to the school’s special education program were also coded, which were then further coded based on the type of data being reported (e.g. demographics, accountability data, staffing, and program

description). These were unexpected codes, given that some reports provided significant program detail and description while others provided no information with regard to their special education program.

### **Study Reliability & Validity**

Reliability and validity in this study was addressed through a number of means. One way is gathering data from different sources, which is helpful to corroborate findings from one data source with another, which contributes to the internal validity of the study. Interview data and document analysis were used to generate the findings of the study. This study provides findings that are not necessarily generalizable to other settings or schools. This is an exploratory study meant to begin to establish an understanding of how data are used by leaders who support students in special education. Therefore, external validity measures are not particularly relevant to this study. However, the rich descriptions garnered through the interview process should allow leaders to interpret the findings in a way that they can draw parallels to their own settings or practices. Internal validity was addressed in several ways. All interviews were audio recorded with the permission of the participant to ensure accurate recall of interview answers and provide a verbatim transcript to be analyzed. Construct validity was addressed through multiple interview questions designed to allow the participant to describe in detail his or her experience with data use as it relates to students in special education. Reliability in this study was addressed through the use of a standardized interview protocol for all participants, including pre-selected interview questions.

### ***Researcher Bias***

The researcher is an employee at a charter school and does not have professional experience working in a traditional public school setting in Minnesota. This creates the potential for bias to influence the research being done in this study because of the researcher's familiarity with charter school legislative requirements, professional work experience, and organizational understanding. One way this potential confound was addressed was through the use of a semi-structured interview design.

To ensure that each participant was given the same opportunities to provide information relevant to the research questions, the researcher did not ask the participants any questions that were not included in the research protocol. The research protocol can be found in Appendix D. Additionally, the researcher introduced themselves as a representative and graduate student at the University and not as an employee of a local charter school in an effort to avoid bias in the answers of the participants. Finally, the researcher was mindful to check each decision made during the collection and interpretation of data, data analysis, and final reporting in an effort to ensure that their biases did not impact the outcome of the study.

### **Human Subjects Considerations**

#### ***Risks***

There are no physical or legal risks associated with this study. There is a risk of loss of anonymity to the participants, but the researcher took precautions to prevent this. Sites and participants were assigned a pseudonym prior to data collection, and only those pseudonyms were used in both audio recordings and transcriptions of interviews. Notes

on document review were taken using the same pseudonyms to preserve anonymity of the sites.

To ensure participant anonymity during the interview process, each interview began with an explanation of participant rights and the reminder that participation is voluntary. The researcher explained that at any time the participant may refuse to answer any question or stop the interview process.

### ***Benefits***

The participants of this study may have benefited from their involvement in the interview process. The interview provided an opportunity to reflect on their role in their workplace and the data use process. It may have provided them an opportunity to consider data use in a different way than they may have before and reflect on data use processes for students. No financial compensation was provided to the participants. However, the researcher will provide each participant with a write-up of the approved final study so that they may gain some insight into the state of data use in special education and how they could better use data to support students. By examining the role of data in their own organizational role and educational context and that of others, it may have expanded their understanding of the role of data in education and the purposes for which it may be used to benefit students with special education needs.

### ***Ethical Considerations***

The researcher did not start data collection prior to approval of the study by the committee members and the University of Minnesota Institutional Review Board (IRB). Further, during the recruitment process of participating educators, the researcher will disclose her affiliation with the University of Minnesota as a student.

The researcher disclosed the nature and purpose of the study and the research procedures and reminded each participant that participation in any and all parts of the data collection process was voluntary. Participants were made aware of the expected time commitment prior to asking for their agreement to participate. The researcher explained the processes through which the participants' anonymity was to be maintained, including the use of pseudonyms, who would have access to data, and how data analysis was to be completed, as well as the procedures through which the researcher would attempt to maintain the anonymity of both site and participants.

### **Summary of Chapter III**

The study utilized an inductive, qualitative design. The group of principals or directors was identified through a local leadership program for principals and contacted for their interest in participating. Data collection took place over a two-month period. Ten principals or directors were interviewed, five from elementary charter schools, and five from traditional elementary public schools. Following the conclusion of the interview, principals were asked to identify another individual at their school who met the definition of an educational leader as defined by this study. All but one principal provided the name and contact information of an educational leader. These individuals were then contacted for an interview. All educational leaders identified by their principals (n=9) consented to participate and were interviewed. All interviews were audio recorded with the consent of the participants.

Semi-structured interviews and document review was utilized for data collection. Following the conclusion of data collection, the researcher edited audio recordings to remove all identifying information. Audio recordings were then transcribed by a

professional transcription service. The researcher checked each transcription against the recording for accuracy upon receipt of the completed transcripts prior to completing the coding and data analysis process. Interview data was transcribed and coded with the assistance of the qualitative data management program, NVivo. Document analysis was done using publicly available information reporting on school demographics and annual report reviews, accessed through the school websites or state reporting tool. Interview and document analysis included an examination of how special education data are reported, including the types of data used to support students with special needs (e.g. behavior, assessment, attendance, etc.), the purposes of the data use (e.g. accountability, student monitoring, professional development, etc.), and the primary responsibilities of the individual reporting data use.

## **Chapter IV: Results**

Following the coding of the semi-structured interview responses, four themes emerged regarding leaders' use of data. Chapter IV presents an overview of findings from the data collected. The chapter begins with a description of relevant terms used to describe the study results. This is followed by a frequency tables and a brief narrative that summarize how participants responded in the semi-structured interviews and the results of the document analysis. Next, an in-depth narrative describes leaders' use of data types identified for this study, and provides a closer look at a small number of unique and insightful responses from participants. Finally, the general and prompted responses contributed to the emergence of four themes that will be explored at the end of the chapter. For the purposes of exploring results, individuals in a principal or director role are referred to as "principals," while individuals who were identified by the principal as a leader for students in special education are referred to as "administrators" or by their specific job title (e.g. school psychologist). Participants as a whole, both principals and administrators, are referred to as leaders or educational leaders.

### **Summary of Data Findings**

#### ***Description of Relevant Terms***

Leaders were asked generally what types of data they used to support students in special education prior to being asked about the four specific data types identified by this study. Unprompted data refers to the responses given by leaders without being asked about any specific type of data use. Prompted data refers to the responses that were given by participants when they were asked specifically about the four types of data identified for this study – academic, behavioral, engagement, and fidelity of implementation.

Academic data was defined for this study as information that provided insight into students' educational progress. Examples given to participants included state, district, or classroom assessments and report cards. Behavior data for this study was defined as information related to student behavior incidents and resulting disciplinary referrals or action. Engagement data was defined as students' level of involvement and motivation to the school and learning

Fidelity of implementation data was defined for this study as the extent to which the guidelines for delivering a curriculum or intervention program were followed.

Some of the responses to the unprompted part of the semi-structured interview resulted in answers about data types that could not be categorized as any of the four data types this study identified. This "other" data encompasses everything that did not fit into any of the four identified categories and included data such as observational data and evaluation tools such as IQ tests.

### ***Response Frequency***

Each instance of data mentioned by leaders during the interview was coded as either academic, behavioral, engagement, fidelity, or other data. It was also coded as to whether or not the instance was in response to the unprompted or prompted portion of the semi-structured interview. Data type definitions and the examples that were shared with participants are noted in Table 4.

Table 4

*Data Type Definitions and Examples*

<b>Data Type</b>	<b>Definition</b>	<b>Examples</b>
<b>Academic</b>	Information that provides insight into students' educational progress.	Standardized state or district assessments (e.g. MCA, MTAS, NWEA, etc.), classroom assessments, report cards.
<b>Behavior</b>	Information related to student behavior incidents and resulting disciplinary referrals or action.	Discipline incidents, behavior reports, suspension records.
<b>Engagement</b>	Information about to students' level of involvement and motivation to the school and learning.	Student surveys regarding their interest in school subjects, class projects, activities, etc.
<b>Fidelity of Implementation</b>	Information about the extent to which the guidelines for delivering a curriculum or intervention program were followed.	Observation or self-report data regarding the frequency with which a curriculum is utilized per week or an intervention plan is followed.
<b>Other</b>	Data that did not fit into one of the four categories of data identified for this study.	IQ tests, behavioral analyses, observations

Table 5 details the breakdown of the different types of data given by principals and leaders as an answer during the unprompted portion of the semi-structured interview. This table provides insight into the frequency and intensity with which leaders talk about using different types of data. Results show that academic data was mentioned more than twice as often as the next most common type of data. Data that did not fit into one of the four categories of data identified for this study was second-most identified type of data during the unprompted portion of the interviews by participants.

Table 5

*Data type response frequency of identification in unprompted responses*

<b>Data Type</b>		<b>Academic</b>	<b>Behavioral</b>	<b>Engage ment</b>	<b>Fidelity</b>	<b>Other</b>	<b>Total</b>
<b>School Setting</b>	Traditional Public Setting	24	9	0	1	12	46
	Charter Setting	27	3	0	0	9	39
<b>Total</b>		<b>51</b>	<b>12</b>	<b>0</b>	<b>1</b>	<b>21</b>	<b>85</b>
<b>Individual Role</b>	Principal Role	26	7	0	1	7	41
	Administrator Role	25	5	0	0	14	44
<b>Total</b>		<b>51</b>	<b>12</b>	<b>0</b>	<b>1</b>	<b>21</b>	<b>85</b>

The data table does not suggest that major differences exist between data types used by leaders in different school settings or roles. Aside from academic and other data, some leaders reported using behavioral data, but only one participant mentioned engagement or fidelity of implementation without prompting. These findings suggest that academic data is at the forefront of leaders’ minds when they consider their roles for students in special education and the data they need to perform their responsibilities.

Table 6 shows the same data, unprompted data identifications, broken down by respondent rather than specific responses. This breakdown of data provides more insight into how roles affect data use because it allows for an understanding of who is using each type of data, rather than aggregating each instance of data use across all users. Similarly, academic data and other data were again the most frequently reported type of data used across roles and settings, followed by behavioral data. Only one participant reported using fidelity of implementation data unprompted, and none reported using engagement

data.

Table 6

*Data type respondent frequency of identification in unprompted responses*

	<b>Academic Data</b>	<b>Behavioral Data</b>	<b>Engagement Data</b>	<b>Fidelity Data</b>	<b>Other Data</b>
<b>Principal/Director – Traditional Public (n=5)</b>	4	3	0	1	2
<b>Principal/Director – Charter (n=5)</b>	3	1	0	0	4
<b>Administrator – Traditional Public (n=4)</b>	3	2	0	0	4
<b>Administrator – Charter (n=5)</b>	4	2	0	0	4

Once again, the numbers in these tables do not suggest that large differences exist between either roles or school settings. Principals at traditional public schools were less likely to report using data that did not fit into one of the four categories identified for this study, but rates were the same for administrators at both charter and traditional public schools, as well as principals at charter schools.

Table 7 summarizes reported total prompted data responses use by setting and role by all study participants. Similar to the unprompted question data, academic data is again the most frequently reported type of data used by leaders across roles and settings, followed by behavioral data.

Table 7

*Data Type Response Frequency of Identification in Prompted Responses*

<b>Data Type</b>		<b>Academic</b>	<b>Behavioral</b>	<b>Engagement</b>	<b>Fidelity</b>	<b>Total</b>
<b>School Setting</b>	Traditional Public Setting	17	15	7	7	46
	Charter Setting	35	15	10	14	74
<b>Total</b>		<b>52</b>	<b>30</b>	<b>17</b>	<b>21</b>	<b>120</b>
<b>Individual Role</b>	Principal Role	33	16	12	11	72
	Administrator Role	19	14	5	10	48
<b>Total</b>		<b>52</b>	<b>30</b>	<b>17</b>	<b>21</b>	<b>120</b>

This data differs from Tables 5 and 6 in that there are more reported uses of engagement and fidelity data, which is due to the prompted nature of this portion of the interview. That participants reported using engagement and fidelity of implementation data commonly during prompted questions was somewhat surprising due to the almost complete lack of responses that included these two types of data during the unprompted portion of the interview. There is also a pattern of data use that differs between settings which did not appear in the unprompted data. While rates of data intensity were relatively equivalent before, there were almost thirty more instances of data use mentioned by charter school leaders than traditional public school leaders during the prompted portion of the interview.

Table 8 provides the same information on prompted data responses by respondent, rather than total responses. This disaggregation of data allows for a clearer understanding of how data use differed by role and setting, because it looks at the presence or absence

of reported data use rather than the frequency of data mentions. Across academic and behavioral data, rates of use were most equal across roles and settings, but patterns of differences emerge for engagement and fidelity data.

Table 8

*Data type respondent frequency of identification in prompted responses*

	<b>Academic Data</b>	<b>Behavioral Data</b>	<b>Engagement Data</b>	<b>Fidelity of Implementation Data</b>
<b>Principal/Director – Traditional Public (n=5)</b>	4	4	3	2
<b>Principal/Director – Charter (n=5)</b>	5	5	5	4
<b>Administrator – Traditional Public (n=4)</b>	4	4	1	3
<b>Administrator – Charter (n=5)</b>	5	5	3	5

Leaders at traditional public schools did not reporting using engagement and fidelity data with the same frequency as leaders and charter schools did. All but one or two leaders at charter schools reported using engagement and fidelity of implementation data, which was less common among leaders at traditional public schools. One participant, a principal, reported not personally using any data in their role to support students in special education, which was unique. When this participant was asked about how they utilized data to support students in special education, they reported how their school or support staff utilized data, but when asked to clarify if they personally used each of the four types of data in their role, they answered that they did not.

In addition to the semi-structured interviews, document analysis was performed with the annual report from the most recent available year for each participating school (N=10).

Table 9

*Data Type Frequency of Reporting in Document Analysis*

	<b>Academic Data</b>	<b>Behavioral Data</b>	<b>Engagement Data</b>	<b>Fidelity of Implementation Data</b>
<b>Traditional Public (n=5)</b>	41	0	0	0
<b>Charter (n=5)</b>	45	1	4	5

The type and frequency of data reported in annual reports differed somewhat between public and charter schools. Each instance of data type reported was coded. Academic data was coded most often and included in each annual report, primarily reporting on state and other standardized test results and progress. Traditional public schools did not report on any other data than academic. Charter schools also included a small amount of data on a behavior management program, student and family engagement data through survey results, and the implementation of curriculum programs through fidelity data.

Table 10

*Special Education Reference Frequency in Annual Reports*

<b>Special Education Data Reported</b>	<b>Academic/ Accountability</b>	<b>Demographics</b>	<b>Program Description</b>	<b>Staffing</b>
<b>Traditional Public (n=5)</b>	5	0	0	0
<b>Charter (n=5)</b>	5	7	2	6

Similar to references of different types of data, traditional public schools only reported on academic or accountability data as it related to special education students. Charter schools reported on a wider range of aspects as it related to special education programming, including demographics (e.g. number of students receiving special education services), staffing (teachers and related service providers), and descriptions of the programs (e.g. qualification procedures and service delivery).

### **Data Type Summary**

#### ***Academic Data***

One of the motivations for this study was previous research findings that leaders in education were most likely to use academic data, specifically standardized assessment data, to make decisions (Wayman, Cho, Jimerson, & Spikes, 2012; Marsh, Pane, & Hamilton, 2006). The frequency academic data was reported by leaders in this study accounted for more than half of the data use mentioned in the unprompted portion of the semi-structured interview. Even without being prompted with a data type, all but one of the respondents to this study reported using academic data. No other data type was reported with similar frequency without being prompted by the researcher.

When asked why leaders chose to use the data they provided to the unprompted question with regard to academic data, the most frequent answer was to help monitor student progress. This administrator at a charter school provided an illustrative response: “I help the teachers create goals and monitor how our [students] are progressing.” (SPED coordinator, charter school). These responses align with previous research that found leaders most often reported using academic data to check student progress and identify student needs (Wayman, Cho, Jimerson, & Spikes, 2012; Marsh, Pane, & Hamilton,

2006). This finding supports the theme that academic data for accountability is on the forefront of educational leaders' priorities.

In order to fully explore leaders' data utilization, the semi-structured interview asked each participant about whether they used each type of data (e.g. academic, behavioral, engagement, fidelity), and if so, what purposes they used the data for. This inquiry allowed for a rich understanding of how and why leaders use data for students receiving special education services.

Leaders listed numerous assessments, including both state standardized assessments and other forms of assessment as sources of student data. A typical response mirrored the one expressed below:

Academic; both math and reading data and we get that data from classroom assessments. We also get that data from Scantron assessments that we take three times a year. We also use our MCA state tests in both math, reading and science in 5th grade. (Principal, traditional public school)

The semi-structured interview also sought to understand why leaders used data. Academic data was also frequently used to monitor student progress in tandem with other sources of data sources such as behavior or cognitive analyses to track progress or qualify students who may need special education services, as this administrator from a traditional public school describes:

The data that I'm collecting is primarily to look at eligibility criteria and determined needs. I use a variety of sources from standardized assessment tools to observational data, interview data, and a review of records, so I collect data from a variety of sources. (School psychologist, traditional public school)

Monitoring student progress in different areas was a frequently cited reason given for utilizing academic data in both school settings by leaders in multiple roles, like this administrator at a charter school who indicated, “It helps us to determine if our kids are making progress or not making progress” (SPED Coordinator, charter school).

Table 11 lists all the different types of academic data identified by leaders, in both the unprompted and prompted portions of the semi-structured interviews, broken down by traditional public and charter school.

Table 11

*Types of Academic Data Identified*

School Type	Data Identified
<b>Traditional Public (n=5)</b>	Minnesota Comprehensive Assessment (MCA), Measures of Academic Progress (MAP/NWEA), classroom assessments, Scantron assessments, standardized assessment tools, DIBELS, FastBridge, report cards, universal screeners, district assessments, early reading assessments, ACCESS assessment (English language assessment)
<b>Charter (n=5)</b>	Minnesota Comprehensive Assessment (MCA), Measures of Academic Progress (MAP/NWEA), district assessments, classroom assessments, curriculum assessments, DIBELS, progress reports, reading fluency, AIMSweb, Read180, Math180, grade level assessments, report cards, STAR reading, ACT Inspire, formative assessments, exit tickets, weekly assessments, STAR Math, Fountas & Pinnell

***Behavioral Data***

Behavioral data was another common response during the unprompted portion of the semi-structured interview. Behavioral data in responses to the unprompted portion of the semi-structured interview accounted for 14% of total responses. Leaders reported using behavioral data to monitor interventions and determine what student needs may be to make progress. This administrator from a charter school provided a response that was typical of respondents who discussed behavioral data during the unprompted section of

the semi-structured interview: “We ... use behavior charts or check-ins, check-outs data, collecting on different behavioral—what’s improving, what’s not working and using that data to influence how we do programming for each scholar individually.” (SPED coordinator, charter school)

When prompted with specific data types, behavioral data was reported to be used with the same frequency as academic data. Leaders across all roles and school contexts most often reported using this data to determine causes and trends for behavioral issues in order to identify potential solutions, like this principal from a charter school describes:

Sometimes, the data will show us specifically if there’s areas where they’re having more challenges in, and then we determine with that data are there more supports that we need to give these students, or is there a behavior intervention plan that needs to be developed specifically for a particular student, or are there any alternatives to suspensions if we see that the students are getting suspensions in a particular area? (Principal, charter school)

Several principals described using behavior data to evaluate staffing and procedures and planning future professional development. This principal from a charter school described the importance of being proactive and using behavioral data to improve school procedures,

One of the main ways I use it is to help train general ed teachers or paraprofessionals of our responsibilities for kids to make sure that everything is in place so that whatever behavior we anticipate we can do our best to minimize and teach replacement behaviors. (Principal, charter school)

The inclusion of general education teachers in that quote suggests that students receiving special education services are spending more time in the general education classroom. If the principal sees a need to use behavioral data from student receiving special education services to train general education teachers, the implication is that those teachers in the general education classrooms need to understand how to react to behaviors on a regular basis. The principals emphasized that using information about student behavior is essential to help them integrate students with special needs into the regular classroom, and that supporting general education teachers in the process is important.

Table 12 lists all the different types of behavioral data identified by leaders, in both the unprompted and prompted portions of the semi-structured interviews, broken down by traditional public and charter school.

Table 12

*Types of Behavioral Data Identified*

School Type	Data Identified
<b>Traditional Public (n=5)</b>	Out-of-class behavioral referrals (number, time of day, precipitating reason, etc.), functional behavior assessments, behavior reports, interventions, discipline referrals, Behavior Assessment System for Children (BASC), school-developed behavior referral forms, Behavior Rating Inventory of Executive Function, demographic data, SWIS (system for collecting behavior information)
<b>Charter (n=5)</b>	Suspension records, intervention plans, behavior charts, check-in/check-out data, SWIS, patterns of behavior, monitoring cards, observational data

***Engagement Data***

Engagement data was not identified by any leaders during the unprompted portion of the semi-structured interview, but leaders did report using it during the prompted portion of the interview. When it came to describing how leaders used engagement data,

leaders most commonly reported using this type of data to determine how students felt about school and how to better support them. This administrator from a traditional public school describes the process of collecting engagement data, “We’ll do ... a student interview where we collect some of that information. How they are feeling about school, what helps them learn, what keeps them engaged, and what keeps them interested?” (School psychologist, traditional public school)

Table 13 lists all the different types of engagement data identified by leaders, in both the unprompted and prompted portions of the semi-structured interviews, broken down by traditional public and charter school.

Table 13

*Types of Engagement Data Identified*

School Type	Data Identified
<b>Traditional Public (n=5)</b>	Student interview, observational data, schoolwide engagement data, survey data, Olweus anti-bulling survey, parent surveys
<b>Charter (n=5)</b>	Student interviews, parent surveys, staff surveys, annual student surveys, reflection surveys

***Fidelity of Implementation Data***

Fidelity data was only mentioned once during the unprompted portion of the semi-structured interview. The principal who reported using fidelity of implementation data without it being prompted discussed using this type of data to impact instruction and professional development.

We do fidelity checks to make sure that the interventions and stuff are being implemented appropriately. So I do collect data on that ... to make sure we’re doing things the right way and to see if we need to adjust any professional development for

our teachers. So it's to impact instruction and then to kind of summarize where we're at, at the end of the year. (Principal, traditional public school)

When prompted, more leaders reported using fidelity of implementation data than just the one who mentioned it before being prompted. The most commonly reported purpose for utilizing fidelity of implementation data was to monitor interventions, both behavioral and academic, like this educational leader from a charter school:

What's working and what's not working? Who's filling in the charts and who's not? Where are we getting the information? Even just as specific as like behavior charts... We talk about how... the fidelity of using those behavior charts and how we can collect data across the whole board and where do we need extra support to ensure that we are collecting the information that we need. (SPED coordinator, charter school)

A few leaders mentioned the implementation of new curriculum or programs as being an important time to collect fidelity information, as well as checks to ensure that students receiving special education services were receiving all of the minutes indicated in their IEP, as detailed by this educational leader from a charter school,

We use it a lot for our very structured reading interventions and things like that, to make sure they're implemented correctly, same thing with some of our special education programming, to make sure that it's with fidelity and the programming is done correctly. (Director of Student Services, charter school)

Finally, one educational leader from a traditional public school, a setting where not many leaders reported using this type of data, mentioned that using fidelity data was a work in progress,

That would be something that I think we are working on really hard here. I think that's a really hard piece of the puzzle is figuring out the fidelity of carrying things out. So yes, especially if there's a pre-referral process, we have a lot of conversations about fidelity and how the interventions are being carried out, and how data is being collected. If we are collecting the data we say we are going to collect, it's a work in progress. (School psychologist, traditional public school)

Table 14 lists all the different types of fidelity of implementation data identified by leaders, in both the unprompted and prompted portions of the semi-structured interviews, broken down by traditional public and charter school.

Table 14

*Types of Fidelity of Implementation Data Identified*

School Type	Data Identified
Traditional Public (n=5)	Behavior interventions, data collection, reading & math interventions
Charter (n=5)	Curriculum implementation, behavior interventions, math & reading interventions, instructional practice, child find process, professional development training

***Other Data***

Data that did not fit into one of the four data types identified by this study was the second-most identified type of data by leaders when they were not prompted with specific types. This study chose to focus on four types highly relevant to students in special education rather than attempt to examine an exhaustive list of data types. For this reason, data like perception data and observational data, two common responses that fell under the 'other' category in this study, were not included in the prompted portion of the

semi-structured interview. However, leaders like this charter school administrator discussed using observational data when gathering information on students receiving special education services: “I do a lot of observation. Some of that is time on task and time off, but some of it is just watching how they operate in the setting and comparing with peers.” (SPED case facilitator, charter school)

Another leader described the importance of asking teachers questions that allowed them to reflect on student progress in ways outside of standard responses:

When you talk about special education children, when you say, “Tell me about the progress of your special education children.” In an open-ended form like that the teacher is giving you perception based on what they’ve observed—engagement at a different level, which does play into this as opposed to just spitting out numbers. Is it level X? Is that how you look at children or should we look at them and say, “They come in; they ask good questions; they’re always helping others. They’re collaborating.” (Principal, charter school)

In addition to observation or perception data, administrators often reported using tools such as IQ test or standardized behavior analyses for students who were going through a preliminary evaluation for special education services or to check on student progress, like this administrator from a traditional public school, “I would use IQ scores, like from a WISC [Wechsler Intelligence Scale for Children]. We usually give a Woodcock Johnson for achievement. I use the BASC [Behavior Assessment System for Children] for behavior data. I use the ABAS [Adaptive Behavior Assessment System] for adaptive functioning behavior.” (School psychologist, traditional public school).

Table 15 lists all the different types of other data identified by leaders, broken down by traditional public and charter school.

Table 15

*Types of Other Data Identified*

School Type	Data Identified
<b>Traditional Public (n=5)</b>	Observational data, interview data, Cognitive Abilities Test (CogAT), IQ scores, Wechsler Intelligence Scale for Children (WISC), Woodcock Johnson (academic achievement and cognitive development assessment), Adaptive Behavior Assessment System (ABAS), Conners 3 (ADHD Assessment), intellectual assessments
<b>Charter (n=5)</b>	Teacher observation data, other observational data, IEP goals, informal teacher feedback, perception data

***Intersectionality of Data***

In addition to responding to each category of data, there were a few leaders who made unique and insightful connections between different types of data, suggesting that data affect and intersect with other types, and that together, it could provide additional insight. Three leaders, both principals and administrators, discussed how behavior data in particular may provide insight into other areas of data and student experiences to consider when working with students who may be struggling.

One principal discussed the connection they saw between engagement and behavioral data, “I also use discipline to look at engagement too. If we’re seeing a lot of discipline referrals in particular areas, that would identify to me that we’re having an engagement issue.” (Principal, traditional public school). Another administrator also described how important it is to consider the relationship between behavior concerns and other aspects of a student’s school career. They pointed out that if a student is having behavior issues, it is likely impacting their academic performance as well:

We are still looking at how behaviors are impacting their ability to perform academically and progress in a general education setting and/or in other settings—small groups, independently, and things like that. Looking at that data to help determine how we support our [students] individually. (SPED coordinator, charter school)

Another principal described the importance of monitoring behavior data as a source of information into what additional services students may need to be successful.

I do pay attention to it and try to determine—is there a need for me to intervene... are they [students] displaying tendencies that might drive us to need to pay attention to them more closely and offer a deeper level of service for them?

Especially as it relates to mental health components. (Principal, traditional public school)

### ***Data Collection ≠ Data Utilization***

Finally, several leaders expressed a unique perspective about data use and the reality that data collection does not necessarily lead to data utilization. The importance of not just collecting, but ensuring the utilization of engagement data, especially since student surveys are often given at the end of the school year, was highlighted by this principal from a charter school,

The principal who will look at it to say, “Oh, I see some concerns that [students] have brought up,” and he needs to go talk to the teacher about that. But the reason why we want the teachers to have it is to say, so you’ve looked at this data. What changes did you make as a result of the information you’ve received? Because

you have the data. It's feedback. What are you going to do to feed forward?  
(Principal, charter school)

This principal highlights an important differentiation in educational data. Information about student achievement, behavior, engagement, and numerous other aspects of the school and student environment can be collected, but that does not necessarily mean it will be used. The principal here categorizes data as “feedback” – information they have received on what is going on with various aspects of their school. They then pose the question of how they can feed that data “forward.” That is, how does a school use the data they have collected to make changes. Collecting data as its own practice does not result in change unless the users of that data know how to successfully analyze and use the information to identify areas of weaknesses and practices are put in place to strengthen their program. This principal provides a response typical of this perspective:

We ask [students], they respond, we look at the data as a school. The [idea] was to send it back to the teachers so that they can see what their own [students] are saying, but I did find out recently that [it was not sent] back to the teacher. We had the data; I got a copy. Actually it's on my desk as we speak, so I say, “Did we give this back to the teacher?” [They said], “No.” I say, “Well then why did we collect it?” (Principal, charter school).

### **Emergent Themes**

Four overarching themes emerged from analysis: (1) big-picture v. detail; (2) setting mattered; (3) similar expectations for students; and (4) data use is collaborative. The first theme, a focus on the big picture rather than on details, refers to the use of data

aggregated versus disaggregated data for primarily summative versus formative purposes. Principals and directors most often utilized data that supports a big picture role with regard to supporting students and staff in special education, while administrators relied on a more detailed approach to data use to fulfill their responsibilities. The second theme is grounded in the interview responses as well as analysis of district and school documents.

The data suggest that there is a difference in the reported data use by principals and other educational leaders that is associated with the organizational setting. Organizational context showed a pattern of higher data use among both principals and leaders at charter schools than at traditional public schools for engagement and fidelity of implementation data. The third theme reflected the pattern that educational leaders regardless of their role had similar expectations for students whether or not students received special education services. The fourth theme speaks to the pattern of collaboration found among educational leaders in their use of data in support of students. Participants in this study made it clear that data analysis is not a solitary activity. Collaborative work with individual teachers or on established teams who met regularly was a common theme throughout the data, making it clear that data use in schools is a collaborative effort.

The remainder of this section will introduce each theme and how it emerged from the data. Additionally, the discussion will explore each theme in detail and provide illustrative responses from principals and administrators that emerged from the analysis of the data collected for this study.

Given the qualitative nature of this study, the frequency of responses will be described using the terms “few,” “some,” and “most.” This is in accordance with findings on how to appropriately verbalize quantities in qualitative research without implying the presence of statistical significance or generalizability (Chang, Voils, Sandelowski, Hasselblad, & Crandell, 2009; Maxwell, 2010). For the purposes of describing the results of this study, when describing results as they relate to the whole participant pool (n=19), a “few” will refer to three or fewer participants, “some” will refer to between four and ten participants, and “most” will refer to eleven or more participants. When describing results of a subset of participants (e.g. principals vs. administrators, charter vs. traditional public) a “few” will refer to one or two participants, “some” will refer to between three and five participants, and “most” will refer to between five and ten participants.

### ***Big Picture vs. Detail Oriented***

The first theme emerged from how principals and administrators described their roles and responsibilities with regard to students in special education. Principals tended to describe their own roles in a way that spoke to the big picture of either the school or an annual review of student data, while administrators used more detail-oriented language and examples when describing their data use. These responses provided insight into the first research question of this study: How does organizational role (i.e., principal, school psychologist, counselor) play a part in the kinds of data that educators use to make decisions regarding the progress and support of students with special needs?

**Theme Description.** Principals were more likely to report using data that focused on the overall functioning of the school and supervising staff, rather than getting into daily or more formative data sources for students. Principals described looking at an

overview of student progress data, school-wide behavior or engagement data to distribute resources for the special education program and identify necessary support for staff.

Administrators were more likely to report using data on a more formative basis for individual students, and at a more disaggregated level, rather than at cumulative data for many students. Examples of detail-oriented data for administrators included surveys for specific student evaluations, daily behavior charts, and progress monitoring data. Many administrators described looking at academic data from classroom assessments in conjunction with state and district assessments to monitor student progress.

Administrators were also more likely to describe using behavioral data on an individual rather than aggregate level to help plan and implement interventions for students who may be struggling.

**Principal Roles.** The most common role principals described themselves as having for students in special education was as a district or administrative representative at Individual Education Plan (IEP) meetings. These meetings for students who qualify for special education services are required to be held once per year and report on the student's academic performance, annual goal progress, classroom setting, and participation in district and state assessments, and other aspects of an individual's program and progress depending on the needs of the student. (Department of Education, 2019).

The PACER Center, a resource and support organization for families with children who have special needs in the Twin Cities, describes the district representative role that many principals in the study reported fulfilling at their schools.

The school district representative contributes to the IEP team in the following ways: (1) Provides information regarding the array of services available in the school district. (2) Represents the interests of the school district and school district personnel, including regular and special education. (3) Commits agency resources to ensure that services in the IEP will be provided as agreed upon by the team (PACER (2012)).

That a district representative is the most common role principals' described themselves as having for students in special education lends support to the theme that principals see themselves as having a more summative and administrative responsibility for students in special education. Principals in this role interact with progress data for students in special education on an annual basis, and are responsible for ensuring the resources are available that the IEP team needs to provide the student with the Free Appropriate Public Education (FAPE) they are guaranteed by IDEA (2004). This traditional public school principal's response to their role typifies the responses of the principals in this study when they described the role as a district representative:

I attend all of the IEP meetings. We actually have a building of about [N] kids, so myself and a few other administrators attend all IEP meetings. We are responsible for being there to be able to commit resources that the building has on behalf of the students. (Principal, traditional public school)

This response reflects the description of the role of a district representative for an IEP team that many principals reported taking on. It highlights the administrative nature of the role, being responsible for ensuring resources are available, and does not require an individual with this role to interact with the student or student data outside of the annual

meeting. Another role that multiple principals described using data for was supporting other staff members. These two principals spoke to the importance of supporting their staff who worked directly with students receiving special education services:

My role as the chief school leader, chief education officer here is to support our department heads, departments leaders, and instructional leadership team, which our special education director and coordinator are part of that team, so I support them with special education needs. (Principal, charter school)

Similarly, a principal of another charter school noted in describing his role as “an advocate ... my role is to coach the coaches, follow through that they’re doing what we expect them to do, and then oversee the overall. I direct with the special ed coordinator, the special ed director, the check-ins.” (Principal, charter school)

These principals described using aggregated data from members of their leadership and teaching staff to identify and develop solutions for areas of the school or program in need of improvement. Both of the principals above described the role as an overarching support role for all staff, reinforcing that principals tend to use data to support big-picture, school-wide improvement efforts.

**Administrator Roles.** Administrators were most likely to describe their primary role as more student than staff focused. They frequently discussed being part the process to identify and organize educational services for students who qualified for special education. Participating in the evaluation process to determine if a student is eligible for special education services was the most common response for the role of the educational leader in this study. This response from an administrator was typical of a participant describing that role: “I do a lot of the evaluation planning. I do a lot of assessment around

eligibility and re-evaluations.” (School psychologist, traditional public school)

Under IDEA, the evaluation process requires, “a variety of assessment tools and strategies to gather relevant functional, developmental, and academic information about the child” (IDEA, 2004). Administrators interacting with evaluation data are looking closely at individual student needs in order to help make decisions about the educational program that a student requires, rather than overall programmatic data, which contributed to the emergence of the results theme that educational leaders tend to use more detail-oriented and formative data than principals in their roles and data use.

Providing daily support for students was also a role that many administrators described as part of their responsibilities, like this administrator from a traditional public school: “I support kid’s behavioral, social, and emotional development at different times, too, as needed.” (School psychologist, traditional public school)

While many administrators reported focusing on the student-driven roles described above, there were a few who contributed to organizing related service providers working with students who qualify for special education services. This administrator from a charter school provides an example of how they support the staff responsible for the hands-on implementation of a student’s IEP: “I provide guidance and support to our staff that are the primary people who are implementing the IEPs and services” (Director of student services, charter school). While administrators often described directly supporting students, there were some examples where they also took on a support role for staff members responsible for implementing a student’s IEP.

Administrators, more than principals, interacted with individual students and staff responsible for the direct implementation of student programming in order to plan,

implement, and support special education. This pattern of responses supports the identified theme that principals report having responsibilities requiring oversight of the school program as a whole and describe data practices that support that big-picture role.

In contrast, administrators tended to describe roles that involve looking at data for students at a more disaggregated level and providing support for teachers and other service providers to meet the needs of those individual student programs. Principals most often reported attending annual IEP meetings as a district representative and acting in a support role for other staff who were delivering more directly programming to students. Administrators were more likely to describe roles such as qualifying students for special education services and working directly with students or case managers, requiring a more detail-oriented approach to data. These findings help answer the first research question posed by this study regarding whether an individual's role influences the type of data used to support students in special education.

### ***Setting Matters***

A second theme that emerged from the data is that school setting, traditional public school or charter school, contributed to the likelihood that leaders would use different types of data. All leaders interviewed for this study, both in principal/director roles and those administrators identified by principals or directors were asked whether they used each of the four types of data identified for this study: academic, behavioral, engagement, and fidelity of implementation.

Coding and word frequency analyses from the interviews conducted for this study suggest that leaders at charter schools were more likely to report using more varied types of data than leaders at traditional public schools. The data supporting this theme help to

answer the second research question this study asked: How does educational context (i.e., charter vs. traditional public school) play a role in the kinds of data that educators use to make decisions regarding the progress and support of students with special needs?

**Frequency and Intensity.** Both principals and educational leaders at charter schools were more likely to report using a variety of data when asked about their use of specific data types. Leaders at traditional public schools and charter schools reported equal levels of both academic and behavioral data when asked about specific data types – all but one participant of the 19 principals and educational leaders surveyed reported using both academic and behavioral data. However, leaders at traditional public schools were less likely to report using engagement or fidelity of implementation data than leaders at charter schools. While most of respondent leaders at charter schools reported using engagement data, only some of the leaders at traditional public schools indicated that they used engagement data.

The pattern was similar for fidelity of implementation data. When asked about using fidelity data about half of the principals and educational leaders interviewed from traditional public schools reported using this type of data, compared with all but one of the leaders at charter schools who reported using fidelity data. This study relied on a purposive sample and utilized a small sample size, so this finding is not intended to be generalizable beyond the scope of the current study, but it was a common pattern among respondents that contributed to the emergence of this theme.

**Charter School Illustrative Responses.** In addition to the frequency of responses, the emergent theme that setting can affect the type of data used by leaders is also supported by the responses given by participants. Charter schools leaders were more

likely than traditional public school leaders to report using engagement and fidelity of implementation data.

When it came to using engagement data, the most common reason given by charter school leaders for conducting engagement surveys was for improving school practices and helping to plan for the next school year, “It does include questions about if they feel there is a supporting adult, if they feel safe at school, if they like school, things like that. We analyze that to help us plan for the next year and make changes and adjustments.” (Principal, charter school)

With regard to utilizing fidelity of implementation data, leaders at charter schools reported using fidelity checks to ensure curriculums and interventions were being implemented correctly, as summarized by this administrator:

We use it a lot for our very structured reading interventions and things like that, to make sure they're implemented correctly, same thing with some of our special education programming, to make sure that it's with fidelity and the programming is done correctly. (Director of student services, charter school)

A charter school principal also described how they monitored school teams to ensure that things that were supposed to be getting done were done and people were participating appropriately as another form of a fidelity check:

I ... sat in [the meeting] and listened and watched the interaction of how it is going; who was talking; what level of advice or counsel is given; how ready are the teachers when they come to present and prepare; how is the time distribution; is everybody allowed to participate fully. That's another form of fidelity check. (Principal, charter school)

Outside of the four specific types of data each participant was asked about, charter school respondents often cited less structured data such as observational data or teacher perception and feedback, compared to only one leader at a traditional public school who reported using observational data. Charter school leaders described numerous uses for observational data, like this individual describes: “I do a lot of observation. Some of that is time on task and time off, but some of it is just watching how they operate in the setting and comparing with peers.” – SPED case facilitator, charter school.

This quote highlights the importance the administrator placed on collecting data outside of traditional means such as assessments or behavioral analyses. Their emphasis on using observational data emphasizes the reality that schools serve children who learn and grow quickly and make progress in areas that traditional assessments may not necessarily capture. Areas such as social or emotional growth would not be captured on a more traditional assessment, and this administrator’s inclusion of observational data suggests that those areas of development have a place of importance in schools alongside academic data.

Another charter school principal gave a response that highlights that reality as well with regard to how to get information from teachers about how students are doing in school outside of traditional forms of data collection, something they referred to as perception data:

What I’ve learned in my years of reading, researching, and engaging with people is that teachers are always told what to do. The same thing is true about students. Teachers always tell students what to do, but rarely do you find somebody who goes in and says to the teacher, “Can you tell me how well your students are doing?”...

No leading; right? ... They'll say, "They're doing well." I say, "What do you mean?" Then they start [naming other categories] and it's amazing what they show you. What you find out is they rely on observable data, so they will say something like, "My [students] come ready every day. When they come in, here's what they do." They don't [respond with assessment data] when you ask for that level of perception. (Principal, charter school)

Responses to the semi-structured interview questions for this study suggest that leaders at charter schools tend to report utilizing a wider variety of data types, including engagement data, fidelity of implementation data, and a number of types of data that are less structured such as teacher feedback or observational data.

**Traditional Public School Illustrative Responses.** While there were more leaders at charter schools who reported using engagement and fidelity of implementation data, there were a few leaders at traditional public schools who also reported using fidelity data at their school. Those leaders at traditional public schools who reported using engagement data typically reported doing it for all students to get a better sense of school climate, compared with charter school leaders whose responses focused more on planning for the next school year,

Right now we've been using it to kind of analyze our school culture and climate and look at how safe the students feel. Do they feel like they can talk to their teachers and other adults on our campus if they're having a problem? (Principal, traditional public school)

Most participants from traditional public school settings reported using fidelity data. The most common reason for using fidelity of implementation data reported by the

leaders from traditional public schools is to ensure that academic or behavioral interventions were being delivered correctly. “We do data collection on behavioral needs and the intervention that we've tried and then if it's not working, what is the reason for that? Do we need to change the intervention?” (School psychologist, traditional public school)

In addition to the four specific types of data participants were asked about, leaders at traditional public schools were more likely to report using data from sources such as cognitive or behavioral analyses, specifically for the purposes of evaluations for students in special education. One educational leader described the different assessments they would use during an evaluation to see if a student qualifies for special education services.

Behavior Rating Inventory of Executive Functions ... I would use for students that I was looking for data to qualify for ASD [Autism Spectrum Disorder], SLD [Specific Learning Disability], OHD [Other Health Disability] and even EBD [Emotional Behavior Disorder] ... I would use the BASC, the Behavior Assessment System for Children 3. That would be more for ASD and for EBD, to look at how significant their behaviors are compared to their peers, to see if they need Special Education, based on that significance. (School psychologist, traditional public school)

**Annual Report Insights.** In addition to the semi-structured interviews providing insight into how the setting of a school may influence data use, document analysis of each participating school’s annual report also provided some insight into how schools reported data to the public. The document analysis conducted for this study also contributed to the emergence of the theme that setting matters. Annual reports are the

primary way that schools and districts communicate the results of their program to the public, and are therefore complimentary, they share school results in a positive light, and complementary, they provide insight into how the school reports data use compared with how leaders at the school actually discussed their use of the same information during the interviews.

The annual report from the 2017-2018 school year for each participating location (n=10) were collected and analyzed for the same four types of data identified in the semi-structured interviews, as well as for references to the school's special education program. It is important to note that charter schools produced their own individual report specific to the school, while traditional public schools published district-wide information rather than school-specific documents, so the comparison here is not comparing the same kind of document for the two school settings, which confounds in the data.

Academic data was by far the most commonly cited type of data among both charter and traditional public schools. Both types of schools reported on a variety of assessment results as the primary type of data reported in their annual report. However, where the settings differed was data reporting beyond academic. Traditional public schools did not report on any of the other three types of data identified for this study, while charter schools did. Although behavioral, engagement, and fidelity of implementation data were not reported often, it is notable that some charter schools did report on other types of data, while traditional public schools did not. This reflects the pattern that emerged from the semi-structured interviews as well – academic data was most commonly reported by leaders in both settings, but engagement and fidelity of

implementation data were more likely to be reported by leaders at charter schools than leaders at traditional public schools.

In addition to data types, the annual reports were also analyzed for mentions of the special education program. All ten documents reported on the academic data for students receiving special education programming. Differences emerged between school settings when looking at special education program reporting beyond academic results. Traditional public school reports made no mention of special education programming outside of academic data, while charter schools provided a varying amount of additional information. Charter schools reported on staffing, including the number of teachers and other related service providers, the demographics of their special education students, and two charter schools included descriptions of how students qualify for services and how programming is delivered.

Overall, the document analysis further supported the emerging theme that the type of school setting may make a difference in the type of data used and reported by schools. Traditional public schools were less likely to report using engagement and fidelity of implementation data than charter schools, and provided less details regarding their special education programs in their annual reports. However, it is important to consider the difference between charter schools producing their own annual reports and traditional public schools publishing district-wide reports. The reality of those differences may play a role in the differences found between data reported in documents and limit the reliability of the conclusions drawn from them.

### *Similar Expectations for All Students*

While this study asked specifically about how leaders used data for students in special education, there was a noticeable theme that emerged when analyzing how leaders spoke about comparison data between students who both did and did not receive special education services. Many leaders volunteered that with regard to numerous expectations, they did not regularly disaggregate data by special education status, and that they held the same expectations for all students, and had very little, if any, data or assessments that were used for students receiving special education services that weren't also used with students in the general education population.

This theme relies on the idea of "similar" expectations. When interpreting this study results, "similar" means that all students, regardless of their special education status, are held to the same standard in terms of behavior in school, making progress academically based on grade-level norms, and being engaged in the school community.

**Leaders' Expectations for All Students.** Leaders in both traditional public and charter schools, in a variety of roles, used data to monitor student progress, and the leaders in this study frequently reported their academic, behavioral, and engagement expectations and use of data do not differ based on whether or not a student qualifies for special education services. Many leaders highlighted the fact that there are data tracking systems naturally set up in the IEP process for goal tracking and progress monitoring, requiring a regular collection and analysis of data with regard to those students' progress.

The final question of the semi-structured interview asked leaders whether there were any types of data used specifically for students in special education that weren't used for students in the general education program. Many leaders said that all of the data

were the same, or was looked at the same, regardless of a student's special education qualification. Only one leader reported using a literacy program that was only used for students receiving special education services that was not used by staff in the general education program.

The use of data without disaggregating between students who do and do not receive special education services was common across multiple types of data. Behavior data was one of the most commonly discussed areas where leaders look at data without distinguishing between students based on special education status. Two leaders discussed how they have the same expectations for students regardless of whether or not they qualify for special education services:

Purposes of behavior data for special education students—again, this is for all of our students, but we're talking about special education in particular here. One, to assess for our school where our students are socially as well the other for academically. We assess our students socially as far as behaviorally what does their track record, what data shows. (Principal, charter school)

[Analyzing behavior data is] not specifically towards special ed. We expect them to conduct themselves in the same way. So, we deal with the situation differently, but in terms of the classroom expectations and things of that nature, they're held to the same standard as anyone else because we don't want to send the wrong message to them or to other students, but our intervention strategies change from student to student. (Principal, charter school)

This administrator highlights an important point that schools use student-specific data to determine strategies and interventions necessary to give students what they need,

regardless of whether or not the student has qualified for special education services. This supports the emergent theme that leaders in education use data in an attempt to personalize curriculum, intervention, or other programs for all students if they are able, not just those who qualify of Individualized Education Plans.

Academic data was another type of data that leaders discussed having similar expectations for all students. A principal from a charter school mentioned using state assessment data the same way for all students, “I would look at special ed students in the context of all of the other students and see where they fall in comparison I guess if I’m looking or talking about MCA scores or something like that.” (Principal, charter school)

Finally, a principal at a traditional public school conveyed the same mindset with regard to engagement data, “We have some schoolwide engagement data, but it doesn’t get broken down into students in special education as opposed to students in general education.” (Principal, traditional public school)

### ***Leaders are Collaborative Users of Data***

Almost all of the principals and educational leaders interviewed for this study were part of the IEP team, either as a district representative, school psychologist, or special education coordinator. This reality led to the emergence of the final theme that no principal or educational leader is collecting and analyzing data in a vacuum. There was a strong pattern of collaboration throughout the interviews regarding leaders’ use of data.

In addition to being asked about the types of data they used and the purposes for which different types of data were used, each participant was asked if they collaborated with anyone when using data. If a participant replied in the affirmative, they were then asked to describe who they collaborated with using each different type of data. Many

participants mentioned collaborating with members of their staff during the unprompted portion of the interview and reiterated the collaborative nature of their data use when asked about it specific to each data type. Many leaders reported meeting with a team of individuals on a regular basis to ensure data was being collected and monitored regularly and appropriately, which gave rise to the final theme that educational leaders often use data in collaboration with others.

**Collaborative Response Examples.** Collaboration for this study means that leaders reported meeting with colleagues on a regularly scheduled or spontaneous basis for the purposes of using data to have discussions, identify problems, and/or create solutions to problems. Some data collaborations described by educational leaders were regularly scheduled, similar to this principal from a traditional public school:

We have data days where we meet with the entire team. So it's the classroom teachers plus any intervention teachers or ed assistants that work with the students. They all attend the meeting together, and we go through the data of every single kid at the grade level. And we make instructional decisions and grouping decisions—we do that every six weeks. (Principal, traditional public school)

One administrator from a charter school described scheduled time to analyze data even more frequently, as often as every single day, “I meet every day with our behavioral team. So we have five people at our school that are identified as student success coaches. One of them is a social worker as well. We start every day by looking at our report of the prior day.” (Academic dean, charter school)

Principals were most likely to talk about being part of building-wide teams who reviewed data on a regular basis or as problems were identified, like this administrator from a charter school, “Pretty much everything that we do is part of the IEP team.” (SPED case facilitator, charter school). Educational leaders were more likely to talk about working closely with individual teachers and emphasized that when students needed an intervention or additional supports, decisions were made collaboratively by that team, like this educational leader from a traditional public school described,

I'll grab a classroom teacher and then the Special Ed person who will be testing, just to get their support. We like to collaborate and as a team decide how impactful is [the student's data] with Special Education, how average does it seem; that sort of thing.” (School psychologist, traditional public school)

The data resulting from this study indicate that data are used often by leaders in different roles and different settings, but it is almost always done in collaboration with other staff and leaders in the school.

#### **Summary of Chapter IV**

The information that this study provides answers several questions that had previously been unexplored by research, including what types of data leaders for students in special education utilize. The results provide a rich description of the different types of data and the amount of data use, collaboration, and purpose behind that utilization for leaders in a variety of roles.

The interviews with principals and administrators provide evidence that support existing research findings educational leaders most often report using academic data over other types of data, including with students receiving special education services. Four

themes emerged from the semi-structured interview data. The first theme to emerge was a big picture versus detail-oriented point of view. Data suggested that principals and directors most often utilized data that supports a big picture role with regard to supporting students and staff in special education, while administrators required a more detailed approach to data to fulfill their responsibilities.

The second theme that emerged from the data found that organizational context showed a pattern of higher data use among both principals and leaders at charter schools than at traditional public schools for engagement and fidelity of implementation data, suggesting that setting matters in terms of the likelihood for leaders to reporting using different kinds of data.

The third theme to emerge came from semi-structured interview responses that suggest leaders have similar expectations for students regardless of whether they received special education services or not. Finally, the last theme to emerge from the data makes it clear that educational leaders in this study do not consider data analysis to be a solitary activity. Collaborative work with individual teachers or on established teams who met regularly was a common theme throughout the data, making it clear that data use in schools is a collaborative effort.

## Chapter V: Discussion

Data collected for this study resulted in the emergence of four primary themes: (1) big picture versus detail-oriented data use, (2) school setting influences data usage; (3) leaders had similar expectations for all students regardless of the special education status; and (4) participants described practices that suggest data analysis and use is a collaborative activity.

This chapter will highlight how the data and resulting themes that emerged in Chapter IV inform the research questions posed by this study. This chapter will also highlight the importance of these findings within the context of research that has been done previously, and conclude with the implications of those findings for practice and future research.

### Research Question 1

*How does organizational role (i.e., principal, school psychologist, counselor) play a part in the kinds of data that educators use to make decisions regarding the progress and support of students with special needs?*

The data collected from educational leaders for this study provided some insight into how individuals in different roles use data and how they perceived their own role for students in special education. Data suggested that individuals in a principal or director role used data in a big picture way while other leaders tended to be more focused on detail-oriented types of data. This finding was not surprising, given that principals are responsible for the whole school building, while the leaders they identified have more specific roles as they relate to programs in the building. It would naturally follow that the roles principals describe as having and the data they report using have a wider lens of

focus than leaders with more specified roles throughout the building. In this area, roles were more similar than different. Individuals with similar roles across educational contexts used similar types of data, that is principals in charter schools used data similarly to principals in traditional public schools.

Principal's use of data in this study is encouraging, given that previous research has found that their attitude regarding data utilization has a major impact on the likelihood of the rest of the school to be data-driven (Levin & Datnow, 2012; Cosner, 2012). Most principals saw their role for students in special education as a representative of the school and the resources available and a source of support for other school personnel who work more directly with the students, which fits in with what previous research has found that the roles educational leaders fill (McLeskey & Waldron, 2000; Hoopey & McLeskey, 2013; Kilpatrick & McCarthy, 2015).

Administrators described their responsibilities in a more detail-oriented way, describing their roles as identifying and organizing the necessary educational services for students who have qualified for special education services, and working directly with students and teachers. Previous research that specifically defined the educational leader as a principal, assistant principal, or superintendent (Levin & Datnow, 2012; Mense & Crain-Dorough, 2018), this study contributes a description of how leaders in additional roles who are responsible for making decisions for students in special education interact with data. A broader understanding of how individuals in different roles who use data to make decisions on behalf of students in special education often is important. Individuals in decision-making roles extend beyond a specific titles and should be studied comprehensively rather than with a limited scope based on titles to ensure we have a full

understanding of how leaders make decisions regarding the educational progress of children with special needs.

The finding that role does influence the type of data educational leaders use supports previous findings regarding the roles that principals described themselves as having. This study contributes some preliminary data on how leaders in a principal or director role use data to support students in special education, something that had not yet been explicitly explored in the literature. Additionally, roles beyond that of the principal were explored with regard to data use and supporting students in special education, which further contributes to our understanding how leaders in different roles and with different responsibilities interact with data to support students receiving special education services.

The information from this study contributes perspectives from both principals and other educational leaders on what they perceive their roles to be, and what data they use to support those roles. The semi-structured interview method of data collection allowed the participants to discuss in depth how they viewed their role for students who receive special education services, which contributes a variety of detailed perspectives to the literature on how leaders in education perceive their responsibilities.

This is important given the increase in the number of students identified as qualifying for special education (NCES, 2019), and the requirement by IDEA (2004) for students to participate in the “least restrictive environment.” The amount of time students who qualify for special education are spending in the general education classroom has steadily increased over the past two decades from less than 50% spending most of their time in the general education classroom, to over 60% by 2017 (NCES, 2019). This shifts some of the responsibility of leaders from just those in special education onto those in

general education to have an understanding of the needs of these students and how to utilize data to make decisions about their education. The in-depth discussion of individual roles and responsibilities and the ways in which they use data is an important contribution to this field of study.

### **Research Question 2**

*How does educational context (i.e., charter vs. traditional public school) play a role in the kinds of data that educators use to make decisions regarding the progress and support of students with special needs?*

The second theme identified in Chapter IV informs the second research question posed by this study. Results showed that while rates of academic and behavioral data use were similar across both school contexts, leaders at charter schools were more likely to report using engagement data and fidelity of implementation data, suggesting that educational context may play a role in the type of data used by leaders.

Regarding engagement data, most of leaders at charter schools, regardless of role, reported using engagement data, compared with only some of the leaders at traditional public schools. Rates were similar for fidelity of implementation data: most leaders at charter schools, regardless of role, reported using fidelity data, compared with half of the leaders at traditional public schools. It was somewhat surprising to find a consistent difference between school settings. Individual variation among schools was expected given the naturally different priorities and levels of expertise with data use among personnel at different schools, but there was consistently higher reported types and frequency of data use among leaders at charter schools than leaders at traditional public schools.

Much of the previous research on the differences between charter schools and traditional public schools has looked at the achievement of students in both settings. While this study does not directly contribute to supporting previous research, it does provide some preliminary information on data use and how it may differ between educational settings with regard to special education students, which has yet to be explored in the literature. This is an important area of research given the increasing charter school enrollment and population of students who require special education services at charter schools (NCES, 2017). If there exists a persistent difference in the likelihood of leaders to use data between educational contexts, more information is needed to understand how to promote data utilization among leaders across school settings and to ensure equitable programs and services for students. Unfortunately, the scope of this study did not extend to any data collection that could shed light on why this difference exists.

### **Research Question 3**

*How do organizational context and individual roles inform the purpose of data utilization for educators supporting students with special needs?*

The last two themes that emerged from the data provide information to help answer the third research question about why leaders use the data, and whether the purposes identified were affected by an individual's role or the type of school they worked for. The first theme that emerged that helps to answer this question is the one that academic data was the most frequently reported by leaders across all roles and settings. Leaders commonly reported using this data to track student progress, which aligns with previous research findings that leaders report using academic data to check student

progress and identify additional needs (Wayman, Cho, Jimerson, & Spikes, 2012; Marsh, Pane, & Hamilton, 2006). The results of this study follows the patterns of data use by leaders in education established in previous research, suggesting that academic data are used most frequently by leaders across roles and school settings. A major motivation for this study was to establish whether this previously established pattern of behavior use extended to leaders who were using data for students in special education programs. The results of this study contribute a preliminary finding to the literature suggesting that the data use by leaders is similar for both students who do and do not receive special education services.

Following a similar pattern, the theme that emerged that leaders had similar expectations for all students regardless of whether they qualified for special education services also contributes to answering the third research question in this study. Leaders expected students to make academic progress and behave appropriately in the school setting. This conclusion was based on the finding that there was very little data used for students in special education that wasn't used for other students in the school. Only one school reported using a specific literacy program for students in special education that wasn't used by students who did not qualify for services.

Many leaders directly emphasized that they had the same expectations for students regardless of their special education status with regard to behaviors, engagement, and academic progress. These findings contribute to answering one of the motivational questions of this study and whether or not leaders use data for students in special education and general education in the same way. The data from this study

suggests that leaders use data for similar purposes for both general education students and students who qualify for special education services.

The final theme that emerged also informs this study's third research question. Data suggested that leaders rarely used data in a vacuum, they almost always used it as part of a team. Many leaders described being part of data teams, intervention teams, behavior teams that regularly met and reviewed data for the purposes of tracking academic progress, behavioral events, intervention success, etc. This is an encouraging finding, given the importance of a collaborative environment and opportunities for shared leadership, including for data use, in establishing a data-driven school environment (Earl & Katz, 2002; Kruse & Seashore, 2009). While this study did not attempt to examine data use by groups or their efficiency in identifying or solving problems, this finding contributes to the existing literature evidence that leaders tend to collaborate on data use for students in special education, extending our understanding of how data teams function in schools.

## **Implications for Practitioners**

### ***Data Fluency***

The almost universal use of data by leaders and the varying educational and professional backgrounds that principals and administrators in this study reported prompts questions regarding how individuals with different backgrounds are differentially prepared to use data to support students. Minnesota's requirements for leadership competencies cites data use competency by principals twice: "Organizational management by ... defining and using processes for gathering, analyzing, managing, and using data to plan and make decisions for program evaluation;" and "Instructional

management for the success of all learners by ... demonstrating the ability to utilize data for instructional decision making.” (MN Administrative Rule 3512.0510, 2006). These requirements vary by state, however, and states have varying degrees of expectations for issuing principal licenses for individuals who received their initial degree or licensure in a different state. Even the small sample of participants in this study came to their leadership positions in schools through a variety of educational and professional paths. A greater understanding of how individuals in both principal and other leadership positions are trained to utilize data is necessary in order to address potential gaps in training or knowledge.

Leaders in this study use data for numerous purposes, and should have the training and continuing professional development to support that practice. Data has become ingrained in education since the advent of standardized testing, and it is essential that teacher and leadership licensure programs offer the training necessary to allow individuals in education to collect, interpret, and utilize data well for their program area. It is a little more challenging to pinpoint where and how this training would be most effective in reaching the most individuals, since leaders even just in the small sample in this study came from a variety of educational and professional backgrounds. For that reason, professional development programs and requirements may be the best method to ensure that the users of data in a school are all given sufficient training on how to responsibly and efficiently utilize data.

### ***Practitioner Expectations***

Data from this study indicate that many leaders have similar expectations for students regardless of whether they qualify for special education services or not. There

are a couple of resulting implications for practice to ensure that students in special education have their progress appropriately monitored with data from high-quality sources. An implication for practice is that leaders establish and maintain rigorous goals for students in special education with an expectation of progress appropriate for their cognitive and skill level. There exists a number of seminal and current research studies suggesting that teachers and leaders have often unconsciously lower expectations for students with a special education label than those who do not (Foster, Ysseldyke, & Reese, 1975; Rolison & Medway, 1985; Vlachou, Eleftheriadou, & Metallidou, 2014; Woodcock & Hitches, 2017), and that teacher expectations of a student can lead to real effects on a student's performance (Rosenthal & Jacobson, 1992; Szumski & Karwowski, 2019). School policy and educational leaders should monitor their own practices to ensure that students receiving special education services are given rigorous but appropriate goals, with clear definitions of how the types of data to be used to track the progress of the student.

The second implication for practice relates to the type of data used. This study was motivated based on the finding that leaders tended to report using standardized assessment data as their most frequent source of data (Wayman, Cho, Jimerson, & Spikes, 2012; Marsh, Pane, & Hamilton, 2006). One of the motivating arguments for this study was that standardized assessment data results are often not representative of the performance and growth of students in special education due to the rigid method of administration that often challenges the need for accommodations and modifications for students with special needs. Academic data was the most frequently cited type of data used by leaders in this study as well, and most mentioned the standardized assessments

required for their students to take. This is another area that should be addressed in leadership programs and reinforced in professional development to ensure that a school can develop a comprehensive data plan that benefits all students, and ensures that students in special education programs can have their progress monitored effectively.

Finally, the way that leaders collect, categorize, and utilize data is an important aspect of data to consider. This study identified four types of data relevant to education – academic, behavioral, engagement, and fidelity. However, results found that a quarter of the data leaders identified as relevant for their roles did not fall into any of the four categories this study asked about. Recent research has conceptualized data in different ways that may be beneficial for practitioners to consider in order to maximize the effectiveness of their data practices. Schildcamp, Poortman, Lyuten, and Ebbeler (2017), for example, defined three categories of data in their recent study on factors that promote or hinder data-use in schools that were based on how the data were used, rather than categorizing the type of data itself. The three categories in their study included accountability data, school development data, and instructional data.

The authors defined accountability data as data used for reporting, such as assessment results. School development data was information that could answer whether or not the school was achieving its goals, such as student results (e.g. pass/fail) or teaching quality (obtained through observation). Finally, instructional data was information that could be used to influence student achievement and improve teaching methods (Schildcamp, Poortman, Lyuten, & Ebbeler, 2017). This method of categorizing data may help leaders make a more direct connection between the collection and utilization of data, since they categorize it by ultimate use rather than the type of data.

Without additional consideration of how leaders think about data, principals and administrators may miss recognizing and collaborating on a huge amount of data, as identified by this study, as “other” data that did not fit neatly into any one category of traditional education data types.

### ***Data Collaboration***

Leaders in this study rarely used data in a vacuum, they almost always collaborated with colleagues, either informally or as part of a team. Many leaders described being part of data teams, intervention teams, behavior teams that regularly met and reviewed data for the purposes of tracking academic progress, behavioral events, intervention success, etc. This is an encouraging finding, given the importance of a collaborative environment and opportunities for shared leadership, including for data use, in establishing a data-driven school environment (Earl & Katz, 2002; Kruse & Seashore, 2009).

School and district leadership should build dedicated time for collaborative data use into faculty schedules in order to ensure that leaders and other educators have the time necessary to review data and collaborate with other leaders and educators. Based on the findings that leaders use data in collaboration with other staff members, and the findings of Earl and Katz (2002) and Schildkamp, Poortman, Luyten, & Ebbeler (2017), in order to facilitate data use among school teams, time should be built into faculty members’ schedules. The PCOLT framework from Kruse and Seashore (2009) requires a strong school culture of professional community (PC), organizational learning (OL) and trust. According to the data collected in this study, leaders are already using data for special education students collaboratively. In order to facilitate, increase, and improve

that practice, it is important that schools build time, a shared sense of responsibility, and trust in their team members to facilitate quality collaboration on data use (Kruse & Seashore, 2009).

### **Directions for Future Research**

The information obtained through this research study serves to fill a gap in the literature about how leaders use data to support students in special education programs. It provides rich descriptions of how leaders perceive the roles with regard to supporting students in special education programs, and how and why they use data to fulfill those responsibilities. The detailed descriptions should allow educators to relate the information to their own experiences, regardless of the fact that this study was conducted with a small sample size. However, new questions arise and additional questions remain unanswered. There are several areas that future research should seek to fill.

This study took place with a small sample size in one metropolitan area. Future research should continue to pursue this area of inquiry with larger sample sizes and with principals and other educational leaders from wider and more diverse settings and areas to determine whether or not the practices found by leaders in this study are similar to those in other contexts. Another future area of research relates to the policy recommendations discussed above. While leaders in this study indicated that they use data frequently in their positions, it did not inquire as to whether they had any training with data analysis, either in their academic programs or through professional development. Future research should seek to understand more about the current state of data proficiency among educational leaders to make more effective recommendations about training programs and professional development. This is especially important given

that each state has different requirements for licensure programs and granting licenses to leaders who were initially licensed in other states. A preliminary analysis of leaders' data expertise how it may vary depending on the state of current or initial licensure would be an interesting contribution to the literature,

Another area of future research should seek to fill in some of the questions still evident in the area of leadership, data use, and educational context. The next step in understanding this research area is determining whether the findings from this study translate to areas outside of the Twin Cities and the state of Minnesota. Additionally, future research should seek to understand why the likelihood of data use differed between traditional public schools and charter schools as they did in this study. Control over programming decisions, the number of students, and priorities of leadership are just a few factors that could account for differences found in this study. Additional studies should seek to understand more about why these differences exist, which could subsequently help educators better understand how to remove barriers to data use and improve student outcomes.

Finally, future research should continue to expand the research base on how leaders use data for groups beyond those students in special education, including students with a minoritized status, students in an English Language program, students from different SES backgrounds, or students who have recently arrived in the United States. Future research should also focus on gathering information on data use from a diverse group of schools, including schools in rural and urban areas, schools with a range of free- and reduced-lunch (FRL) qualifying rates, and schools across different states to determine whether state policies have an effect on data use. The more we are able to learn

about how different factors affect data use among educators, the better we can understand how to promote responsible and effective collaboration for data use to ensure that leaders can successfully monitor the progress of all students, regardless of the school setting or whether the student qualifies for special education services.

## References

- Alexander K.L., Entwisle D.R., & Dauber S.L.. (1993). First-grade classroom behavior: Its short- and long-term consequences for school performance. *Child Development, 64* (801-814).
- Alexander, N.A. (2013). *Policy Analysis for Educational Leaders: A Step by Step Approach*. New York: Pearson.
- Anderson, S., Leithwood, K., and Strauss, T. (2010). Leading Data use in Schools: Organizational Conditions and practices at the School and District Levels. *Leadership and Policy in Schools, 9*(3), 292-327.
- Assessment [Def. 1]. (n.d.). *Merriam-Webster Online*. In Merriam-Webster. Retrieved October 4, 2016, from <https://www.merriam-webster.com/dictionary/assessment>
- Bardach, E. (2009). *A practical guide for policy analysis: the eightfold path to more effective problem solving* (3<sup>rd</sup> ed.). Washington, DC: CQ Press.
- Bell, M. & Palmer, C. (2015) Shaping a strengths-based approach to relational leadership, in H. Askill-Williams (Ed.), *Transforming the Future of Learning with Educational Research* (Hershey PA: IGI Global).
- Bergh, B. and Cowell, J. (2013). Discipline Referral Outcomes: Meeting the Needs of Students. *NCPEA Education Leadership Review, 14*(3), 12-21.
- Betts, J.R., and Tang, Y.E. *A Meta-Analysis of the Literature on the Effect of Charter Schools on Student Achievement*. Presented at the Society for Research on Educational Effectiveness, Spring 2016.

- Bifulco, R., and Ladd, H.F. (2006). School choice, racial segregation, and test-score gaps: Evidence from North Carolina's charter school program. *Journal of Policy Analysis and Management*, 26(1), 31-56.
- Billingsley, B.S. (2007). Recognizing and Supporting the Critical Roles of Teachers in Special Education Leadership. *Exceptionality*, 15(3), 163-176.
- Booker, K., Gilpatric, S.M., Gronberg, T., and Jansen, D. (2006). The impact of charter school attendance on student performance. *Journal of Public Economics*, 91(5-6), 849-876.
- Boscardin, M.L., Weir, K., and Kusek, C. (2010). A National Study of State Credentialing Requirements for Administrators of Special Education. *Journal of Special Education Leadership*, 23(2), 61-118.
- Bradley, R., Danielson, L., and Doolittle, J. (2005). Response to Intervention. *Journal of Learning Disabilities*, 38(6), 485-486.
- Buske, R., & Zlatkin-Troitschanskaia, O. (2019). Investigating principals' data use in school: The impact of evidence-oriented attitudes and epistemological beliefs. *Educational Management Administration & Leadership*, 47(6), 925-942. <https://doi.org/10.1177/1741143218753192>
- Buzick, H.M., and Laitusis, C.C. (2010). Using Growth for Accountability: Measurement Challenges for Students with Disabilities and Recommendations for Research. *Educational Researcher*, 39(7), 537-544.
- Carlson, D., Borman, G.D., and Robinson, M. (2011). A Multistate District-Level Cluster Randomized Trial of the Impact of Data-Driven Reform on Reading and

- Mathematics Achievement. *Educational Evaluation and Policy Analysis*, 33(3), 378-398.
- Catacun, M.R.G., and de Guzman, A.B. (2015). Ethical decision-making in academic administration: A qualitative study of college deans' ethical frameworks. *The Australian Association for Research in Education*, 42, 483-514.
- Center for Applied Research and Educational Improvement (CAREI). (February, 2016). *Minnesota Needs Assessment: Research, Evaluation, Assessment, and Data Use in Schools*. Minneapolis: CAREI at the University of Minnesota.
- Chang, Y., Voils, C.I., Sandelowski, M., Hasselblad, V., and Crandell, J.L. (2009). Transforming Verbal Counts in Reports of Qualitative Descriptive Studies into Numbers. *Western Journal of Nursing Research*, 31(7), 837-852.
- Cosner, S. (2012). Leading the Ongoing Development of Collaborative Data Practices: Advancing a Schema for Diagnosis and Intervention. *Leadership and Policy in Schools*, 11(1), 25-65.
- Creswell, J.W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks, CA: Sage Publishing.
- Data [Def. 1]. (n.d.). *Merriam-Webster Online*. In Merriam-Webster. Retrieved October 4, 2016, <https://www.merriam-webster.com/dictionary/data>
- Dougherty, C. (2015). Use of Data to Support Teaching and Learning: A Case Study of Two School Districts. *ACT Research Report Series, 1*. Retrieved from <https://files.eric.ed.gov/fulltext/ED558033.pdf>

- Earl, L., & Katz, S. (2002). Leading schools in a data-rich world. In *Second international handbook of educational leadership and administration* (pp. 1003-1022). Springer Netherlands.
- Earl, L., and Fullan, M. (2010). Using Data in Leadership for Learning. *Cambridge Journal of Education*, 33(3), 383-394.
- Every Student Succeeds Act (ESSA) of 2015, Pub. L. No. 114-95 § 114 Stat. 1177 (2015-2016).
- Finnegan, K., Adelman, N., Anderson, L., Cotton, L., Donnelly, M.B., and Price, T. (2004). *Evaluation of the Public Charter Schools Program*. United States Department of Education. Retrieved from:  
<https://www2.ed.gov/rschstat/eval/choice/pcsp-final/finalreport.pdf>
- Foster, G., Ysseldyke, J., & Reese, J. (1975). I wouldn't have seen it if I hadn't believed it. *Exceptional Childre*, 41, 469-473.
- Frontiera, C. (2019). A Mixed-Methods Study of Principals' Experience using Data Analytic Tools in Hawai'i. (Unpublished doctoral dissertation). University of Hawai'i at Manoa, Honolulu, Hawai'i.
- Goor, M.B., Schwenn, J.O., and Boyer, L. (1997). Preparing Principals for Leadership in Special Education. *Intervention in School and Clinic*, 32(3), 133-141.
- Guba, E.G. and Lincoln, Y.S. (1994). Competing Paradigms in Qualitative Research. In N.K. Denzin & S. Lincoln (Eds.). *Handbook of Qualitative Research* (pp. 105-117). Thousand Oaks, CA: Sage.

- Halverson, R. (2010). School Formative Feedback Systems. *Peabody Journal of Education, 85*, 130-146.
- Halverson, R., Grigg, J., Prichett, R., and Thomas, C. (2005). The New Instructional Leadership: Creating Data-Driven Instructional Systems in Schools. *Wisconsin Center for Education Research*.
- Halverson, R., Grigg, J., Prichett, R., and Thomas, C. (2007). The New Instructional Leadership: Creating Data-Driven Instructional Systems in Schools. *Journal of School Leadership, 7*, 159-194.
- Henry, S.F. (2012). *Instructional Conversations: A qualitative exploration of differences in elementary teachers team discussions* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database (UMI No. 3535056).
- Hoopey, D., and McLeskey, J. (2013). A case study of principal leadership in an effective inclusive environment. *The Journal of Special Education, 46*(4), 245-256.
- Hubers, Mireille D. (2016) Capacity building by data team members to sustain school's data use (doctoral dissertation, University of Twente).
- Hughes, J.N., Luo, W., Kwok, O., & Loyd, L.K. (2008). Teacher-Student Support, Effortful Engagement, and Achievement: A 3-Year Longitudinal Study. *Journal of Educational Psychology, 100*(1), 1-14.
- Ikemoto, G.S., and Marsh, J.A. (2007). Cutting through the “data driven” mantra: Different conceptions of data-driven decision making. *Yearbook of the National Society for the Study of Education, 106*(1), 105-131.
- Imberman, S.A. (2009). The Effect of Charter Schools on Achievement and Behavior of Public School Students. *Journal of Public Economics, 95*(7-8), 850-863.

- Individuals with Disabilities Education Act, 20 U.S.C. § 1400 (1990)
- Individuals with Disabilities Education Act, 20 U.S.C. § 1400 (2004)
- Jarvis, J.M., Bell, M., and Sharp, K. (2016). Leadership for Differentiation: An appreciative inquiry of how educational leadership shapes pedagogical change. *Leading and Managing*, 22(1), 75-91.
- Johnson, L. (2006). “Making her community a better place to live”: Culturally responsive urban school leadership in historical context. *Leadership and Policy in Schools*, 5(1), 19-36.
- Kettler, R.J., Elliott, S.N., and Beddow, P.A. (2009). Modifying Achievement Test Items: A Theory-Guided and Data-Based Approach for Better Measurement of What Students with Disabilities Know. *Peabody Journal of Education*, 84, 529-551.
- Ketterlin-Geller, L.R. (2008). Testing Students with Special Needs: A Model for Understanding the Interaction Between Assessment and Student Characteristics in a Universally Designed Environment. *Educational Measurement: Issues and Practice*, 27(3), 3-16.
- Kilpatrick, J.E. and McCarthy, M.H. (2015). Global Education and School Leaders’ Role in Equitable Access for All Students: Synthesis of Two Qualitative Studies from Massachusetts, USA. *Literacy Information and Computer Education Journal*, 6(4), 2039-2045.
- Kremer KP, Flower A, Huang J, Vaughn MG. Behavior problems and children's academic achievement: A test of growth-curve models with gender and racial differences. *Child Youth Serv Rev*. 2016;67:95-104.  
doi:10.1016/j.chilyouth.2016.06.003

- Kruse, S.D. and Seashore Lewis, K. (2009). *Building Strong School Cultures: A Guide to Leading Change (Leadership for Learning Series)*. Thousand Oaks, CA: Corwin Press.
- Lange, C., Range, B., and Welsh, K. (2012). Conditions for Effective Data Use to Improve Schools: Recommendations for School Leaders. *International Journal of Educational Leadership Preparation*, 7(3). Retrieved from: <https://files.eric.ed.gov/fulltext/EJ997478.pdf> on June 8, 2020.
- Levin, J.A., and Datnow, A. (2012). The Principal Role in Data Driven Decision Making: Using case study data to develop multi-mediator models of educational reforms. *School Effectiveness and School Improvement*, 23(2), 179-201.
- Mann, B. (2014). Equity and Equality Are Not Equal. Retrieved from The Education Trust: <https://edtrust.org/the-equity-line/equity-and-equality-are-not-equal/> on November 20, 2016.
- Marsh, J.A., and Farrell, C.C. (2015). How leaders can support teachers with data-driven decision making: A framework for understanding capacity building. *Educational Managment, Administration, & Leadership*, 43(2), 269-289.
- Marsh, J.A., Pane, J.F., and Hamilton, L.S. (2006). Making Sense of Data-Driven Decision Making in Education. *Rand Education Occasional Paper*. Retrieved from: [http://www.rand.org/content/dam/rand/pubs/occasional\\_papers/2006/RAND\\_OP170.pdf](http://www.rand.org/content/dam/rand/pubs/occasional_papers/2006/RAND_OP170.pdf)
- Maxwell, J.A. (2010). Using Numbers in Qualitative Research. *Qualitative Inquiry* 16(6), 475-482.

- McLeskey, J., and Waldron, N. (2000). *Inclusive Schools in action: Making differences ordinary*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Mense, E. G., & Crain-Dorough, M. (2018). *Data Leadership for K-12 Schools in a Time of Accountability*. Information Science Reference.
- Miles, S.B. & Stipek, D. (2006). Contemporaneous and longitudinal associations between social behavior and literacy achievement in a sample of low-income elementary school children. *Child Development*, 77 (103–117).
- Miller, A. (2013). Principal Turnover and Student Achievement,” *Economics of Education Review*, 63 (60–72).
- Minnesota Association of Charter Schools. *Authorizing*. Retrieved from <http://www.mncharterschools.org/resources/authorizing-a-charter-school.php> on December 1, 2017.
- Minnesota Department of Education. (2008). Minnesota Manual of Accommodations for Students with Disabilities in Instructions and Assessment. Retrieved from: <https://nceo.umn.edu/docs/Teleconferences/tele16/MNmanualOfAccommodationsPDF.pdf>
- Minnesota Department of Education. (2020). *Charter Schools*. Retrieved from: <https://education.mn.gov/MDE/fam/cs/> on March 4, 2020.
- Moreira, P.A.S., Bilimória, H., Pedrosa, C., Pires, M., Cepa, M., Mestre, M., Ferreira, M., and Serra, N. (2015). Engagement with School in Students with Special Educational Needs. *International Journal of Psychology and Psychological Therapy*, 15(3), 361-375.

- Murray, J. (2012). Critical Issues Facing School Leaders Concerning Data-Informed Decision-Making. *The Professional Educator*, 38(1).
- National Center for Education Statistics. (May 2017). *Elementary and Secondary Enrollment*. Retrieved from: [https://nces.ed.gov/programs/coe/indicator\\_cga.asp](https://nces.ed.gov/programs/coe/indicator_cga.asp) on December 1, 2017.
- National Center for Education Statistics. (May 2019). *Children and Youth with Disabilities*. Retrieved from: [https://nces.ed.gov/programs/coe/indicator\\_cgg.asp](https://nces.ed.gov/programs/coe/indicator_cgg.asp) on April 13, 2020.
- National Center for Education Statistics. (May 2020). *Students with Disabilities*. Retrieved from: [https://nces.ed.gov/programs/coe/indicator\\_cgg.asp](https://nces.ed.gov/programs/coe/indicator_cgg.asp) on May 29, 2020.
- National Policy Board for Educational Administration (2015). *Professional Standards for Educational Leaders 2015*. Reston, VA: Author.
- No Child Left Behind (NCLB) Act of 2001, Pub. L. No. 107-110, § 115, Stat. 1425 (2002).
- Orlikowski, W.J. and Baroudi, J.J. (1991). Studying Information Technology in Organizations: Research Approaches and Assumptions. *Information Systems Research*, 2(1), 1-28.
- Pacer Center. (2020). *Who Is On My Child's IEP Team*. Pacer Center. <https://www.pacer.org/parent/iep/guide-to-iep/who-is-on-my-childs-iep-team.asp>
- Progress [Def. 2]. (n.d.). *Merriam-Webster Online*. In Merriam-Webster. Retrieved October 4, 2016, from <https://www.merriam-webster.com/dictionary/progress>

Rosenthal, R., & Jacobson, L. (1992). *Pygmalion in the classroom: teacher expectations and pupil's intellectual development*. Bancyfelin, Carmarthen, Wales: Crown House Pub.

Rolison, M.A., & Medway, F.J. (1985). Teachers' Expectations and Attributions for Student Achievement: Effects of Label, Performance Pattern, and Special Education Intervention.

Ruble, L. A., McGrew, J. H., Wong, W. H., & Missall, K. N. (2018). Special Education Teachers' Perceptions and Intentions Toward Data Collection. *Journal of early intervention, 40*(2), 177–191. <https://doi.org/10.1177/1053815118771391>

Schildkamp, K., Lai, M. K., and Earl, L. (Eds.). (2012). *Data-based decision making in education: Challenges and opportunities* (Vol. 17). Springer Science & Business Media.

Schildkamp, K., Karbautzki, L., Breiter, A., Marciniak, M., & Ronka, D. (2012). The use of data across countries: Development and application of a data use framework. In D. Passey, A. 221 Breiter, A. Visscher (Eds.), *IFIP Advances in Information and Communication Technology: Vol. 400, Next Generation of Information Technology in Educational Management* (pp. 27–38). Berlin, Germany: Springer. doi:10.1007/978-3-642-38411-0\_3

Schildkamp, K., & Poortman, C. (2015). Factors Influencing the Functioning of Data Teams. *Teachers College Record, 117*, 1-42.

Schildkamp, K., Poortman, C. L., and Handelzalts, A. (2016). Data teams for school improvement. *School effectiveness and school improvement, 27*(2), 228-254.

- Schildkamp, K., Poortman, C.L., Luyten, H., and Ebbeler, J. (2017). Factors promoting and hindering data-based decision making in schools. *School Effectiveness and School Improvement*, 28(2), 242-258.
- Schildkamp, K., Poortman, C.L., Ebbeler, J. *et al.* How school leaders can build effective data teams: Five building blocks for a new wave of data-informed decision making. *J Educ Change* 20, 283–325 (2019). <https://doi.org/10.1007/s10833-019-09345-3>
- Shen, J., Cooley, V.E., Reeves, P., Burt, W.L., Ryan, L., Rainey, J.M., and Yuan, W. (2010). Using data for decision-making: perspectives from 16 principals in Michigan, USA. *International Review of Education*, 56(4), 435-456.
- Scotland, J. (2012). Exploring the Philosophical Underpinnings of Research: Relating Ontology and Epistemology to the Methodology and Methods of the Scientific, Interpretive, and Critical Research Paradigms. *English Language Teaching*, 5(9), 9-16.
- Sireci, S. G., Scarpati, S., and Li, S. (2005). Test accommodations for students with disabilities: An analysis of the interaction hypothesis. *Review of Educational Research*, 75, 457–490.
- Smith, D.D., Robb, S.M., West, J., and Tyler, N.C. (2010). The Changing Landscape: How Special Education Leadership Preparation Can Making a Difference for Teachers and Their Students With Disabilities. *Teacher Education and Special Education* 33(1), 25-43.
- Szumski, G., and Karwowski, M. (2019). Exploring the Pygmalion effect: The role of teacher expectations, academic self-concept, and class context in students' math

achievement. *Contemporary Educational Psychology*, 59. DOI:

[10.1016/j.cedpsych.2014.10.006](https://doi.org/10.1016/j.cedpsych.2014.10.006)

Tesch, R. (1990) *Qualitative research: Analysis types and software tools*. Falmer, New York.

Thurlow, M.L. and Kopriva, R.J. (2015). Advancing Accessibility and Accommodations in Content Assessments for Students with Disabilities and English Learners. *Review of Research in Education*, 39, 331-369.

U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics. (2016). Children and Youth with Disabilities. Retrieved from [http://nces.ed.gov/programs/coe/indicator\\_cgg.asp](http://nces.ed.gov/programs/coe/indicator_cgg.asp) on November 5, 2016.

U.S. Department of Education. (2016). Standards, Assessments and Accountability. Retrieved from <http://www2.ed.gov/admins/lead/account/saa.html#plans> on November 20, 2016.

U.S. Department of Education. (2019). A Guide to the Individualized Education Program. Retrieved from <https://www2.ed.gov/parents/needs/speced/iepguide/index.html> on March 8, 2020.

U.S. Government Accountability Office. (June 2012). *Additional Federal Attention Needed to Help Protect Access for Students with Disabilities*. Retrieved from: <http://www.gao.gov/assets/600/591435.pdf> on November 28, 2017.

Vlachou, A., Eleftheriadou, D., & Metallidou, P. (2014). Do learning difficulties differentiate elementary teachers' attributional patterns for students' academic failure? A comparison between Greek regular and special education

teachers. *European Journal of Special Needs Education*, 29, 1–15.

doi: 10.1080/08856257.2013.830440

Waitoller, F.R., Maggin, D.M., and Trzaska, A. (2017). A Longitudinal Comparison of Enrollment Patterns of Students Receiving Special Education in Urban Neighborhood and Charter Schools. *Journal of Disability Policy Studies*, 28(1), 3-12.

Wayman, J.C., Brewer, C., and Stringfield, S. (2009). Leadership for Effective Data Use. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.

Wayman, J.C., Cho, V., Jimerson, J.B., and Spikes, D.D. (2012). District-Wide Effects on Data Use in the Classroom. *Educational Policy Analysis Archives*, 20, 1-31.

Wiliam, D., Klenowski, V., and Rueda, R. (2010). What Counts as Evidence of Educational Achievement? The Role of Constructs in the Pursuit of Equity in Assessment. *Review of Research in Education*, 34, 254-284.

Winters, M.A. (2018, November). *Principal Turnover in New York's Charter and Traditional Public Schools, 2008-2018*. (Issue Brief). Retrieved from <https://files.eric.ed.gov/fulltext/ED594228.pdf>

Woodcock, S., & Hitches, E. (2017). Potential or problem? An investigation of secondary school teachers' attributions of the educational outcomes of students with specific learning difficulties. *Annals of Dyslexia*, 67, 299–317. doi: 10.1007/s11881-017-0145-7

Young, C., McNamara, G., Brown, M. *et al.* Adopting and adapting: school leaders in the age of data-informed decision making. *Educ Asse Eval Acc* **30**, 133–158 (2018).

<https://doi-org.ezp1.lib.umn.edu/10.1007/s11092-018-9278-4>

Ysseldyke, J., Nelson, J.R., Christenson, S., Johnson, D.R., Dennison, A., Triezenberg, H., Sharpe, M., and Hawes, M. (2004). What We Know and Need to Know About the Consequences of High-Stakes Testing for Students With Disabilities.

*Exceptional Children*, 71(1), 75-94.

APPENDIX A. Study  
Consent Form.

Consent Form

***Title of Research Study:*** A Qualitative Study of Data Utilization in Special Education

**Investigator Team Contact Information:** *Erin Giebink, M.A.*

For questions about research appointments, the research study, research results, or other concerns, call the study team at:

Investigator Name: Nicola Alexander, Ph.D. Investigator Departmental Affiliation: Organizational Leadership, Policy, and Development Phone Number: 612-624-1507 Email Address: nalexand@umn.edu	Student Investigator Name (if applicable): Erin Giebink Phone Number: 913-515-9345 Email Address: and01789@umn.edu  Study Staff (if applicable): N/A Phone Number: Email Address:
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**Supported By:** N/A

**Financial Interest Disclosure:** The following disclosure is made to give you an opportunity to decide if this relationship will affect your willingness to participate in this research study: N/A

### ***Key Information About This Research Study***

The following is a short summary to help you decide whether or not to be a part of this research study. More detailed information is listed later on in this form.

#### **What is research?**

- The goal of research is to learn new things in order to help people in the future. Investigators learn things by following the same plan with a number of participants, so they do not usually make changes to the plan for individual research participants. You, as an individual, may or may not be helped by volunteering for a research study.

#### **Why am I being invited to take part in this research study?**

We are asking you to take part in this research study because of your role as an educational leader in your school. The purpose of the proposed study is to obtain a better understanding of the kinds of data and for what purpose educators use data in supporting students with special needs.

## Consent Form

### What should I know about a research study?

- Someone will explain this research study to you.
- Whether or not you take part is up to you.
- You can choose not to take part.
- You can agree to take part and later change your mind.
- Your decision will not be held against you.
- You can ask all the questions you want before you decide.

### Why is this research being done?

The purpose of the proposed study is to obtain a better understanding of the kinds of data and for what purpose educators use data in supporting students with special needs. This information is necessary given that many students in special education have needs that may not be met during the administration of a standardized assessment, and therefore it is important for educators to be able to utilize data from other sources in order to make decisions to best support students with disabilities.

### How long will the research last?

We expect that you will be in this research study for no more than 45 minutes, depending on how the flow of the conversation between you and the researcher conducting the interview.

### What will I need to do to participate?

You will be asked to answer a number of interview questions either in person or over the phone. You may be asked to review the interview notes to ensure the researcher is accurately representing your views and opinions expressed during the interview process.

***More detailed information about the study procedures can be found under “What happens if I say yes, I want to be in this research?”***

### Is there any way that being in this study could be bad for me?

There are no physical or legal risks associated with this study. There is a risk of loss of confidentiality to the participants, but the researcher will take precautions to prevent this.

More detailed information about the risks of this study can be found under ***“What are the risks of this study? Is there any way being in this study could be bad for me? (Detailed Risks)”***

### Will being in this study help me in any way?

We cannot promise any benefits to you or others from your taking part in this research. However, possible benefits include opportunity to reflect on your role in their workplace and

## Consent Form

the data use process. It may provide you an opportunity to consider data use in a different way than they may have before and reflect on data use processes for students.

We cannot promise any benefits to others from your taking part in this research. However, possible benefits to others include insights for other educational leaders regarding their use of data with special education students, which may lead to an increased quality of educational programming and assessment for those students who require special education needs.

More detailed information about the benefits of this study can be found under ***“Will being in this study help me in any way? (Detailed Benefits)”***

### **What happens if I do not want to be in this research?**

Nothing will happen because of your refusal to participate. You do not have to participate in this research.

## ***Detailed Information About This Research Study***

The following is more detailed information about this study in addition to the information listed above.

### **How many people will be studied?**

We expect about 3-5 people here will be in this research study out of 20-30 people in the entire study statewide.

### **What happens if I say *“Yes, I want to be in this research”*?**

If you agree to participate in this research study, the primary investigator will contact you to set up a time to conduct the interview either in person or via phone at your earliest convenience. This interview can be conducted at your place of work or at a place of your choosing. It is expected that the interview will take 30-45 minutes. No additional time commitment is required of you beyond the time for the interview unless you consent to follow-up contact.

The interview will be audio recorded, with your permission, to ensure that your contributions are represented as accurately as possible and so the interviewer may focus on conversing during the interview rather than on taking notes. If you would prefer that the interview not be recorded, written notes will be taken instead.

The questions in the interview will focus on your role in the organization and the types of data you use with students receiving special education services. It is not expected that you prepare for the interview or acquire knowledge beyond what you use in your day-to-day responsibilities. We are interested in your professional experience with data use and special education.

Any follow-up contact after the initial interview is completely voluntary and will be to ensure

## Consent Form

that the researcher is accurately interpreting and representing your contribution to the study.

### **What are my responsibilities if I take part in this research?**

If you take part in this research, you will be responsible for: participating in an interview process of approximately 30-45 minutes, and possibly participating in a follow-up to ensure the researcher is correctly interpreting your responses and opinions.

### **What happens if I say “Yes”, but I change my mind later?**

You can leave the research study at any time and no one will be upset by your decision.

If you decide to leave the research study, contact the investigator so that the investigator can determine the most appropriate handling of any data already collected from you.

### **What are the risks of being in this study? Is there any way being in this study could be bad for me? (Detailed Risks)**

This research may hurt you in the following ways: There are no physical or legal risks associated with this study. There is a risk of loss of confidentiality to the participants, but the researcher will take precautions to prevent this. Sites and participants will be assigned a pseudonym prior to data collection, and only those pseudonyms will be used in both audio recordings and transcriptions of interviews. Notes on document review will be taken using the same pseudonyms to preserve confidentiality of the sites.

To ensure participant confidentiality during the interview process, each interview will begin with an explanation of participant rights and the reminder that participation is voluntary. The researcher will then explain that at any time the participant may refuse to answer any question or stop the interview process.

### **Will it cost me anything to participate in this research study?**

Taking part in this research study will not lead to any costs to you.

### **Will being in this study help me in any way? (Detailed Benefits)**

We cannot promise any benefits to you or others from your taking part in this research. However, possible benefits include an opportunity to reflect on your role in your workplace and the data use process. It may provide them an opportunity to consider data use in a different way than they may have before and reflect on data use processes for students. No financial compensation will be provided to the participants. However, the researcher will provide each participant with a write-up of the final study so that they may gain some insight into the state of data use in special education and how they could better use data to support students. By examining the role of data in their own organizational role and educational context and that of others, it may expand their understanding of the role of data in education and the purposes for

## Consent Form

which it may be used to benefit students with special education needs.

### **What happens to the information collected for the research?**

We cannot promise complete confidentiality. Organizations that may inspect and copy your information include the Institutional Review Board (IRB), the committee that provides ethical and regulatory oversight of research, and other representatives of this institution, including those that have responsibilities for monitoring or ensuring compliance.

### **Will anyone besides the study team be at my consent meeting?**

You may be asked by the study team for your permission for an auditor to observe your consent meeting or a recording of your consent meeting. Observing the consent meeting is one way that the University of Minnesota makes sure that your rights as a research participant are protected. The auditor is there to observe the consent meeting, which will be carried out by the people on the study team. The auditor will not document any personal (e.g. name, date of birth) or confidential information about you. The auditor will not observe your consent meeting (or a recording of your consent meeting) without your permission ahead of time.

### **Whom do I contact if I have questions, concerns or feedback about my experience?**

This research has been reviewed and approved by an IRB within the Human Research Protections Program (HRPP). To share feedback privately with the HRPP about your research experience, call the Research Participants' Advocate Line at [612-625-1650](tel:612-625-1650) or go to <https://research.umn.edu/units/hrpp/research-participants/questions-concerns>. You are encouraged to contact the HRPP if:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You have questions about your rights as a research participant.
- You want to get information or provide input about this research.

### **Will I have a chance to provide feedback after the study is over?**

The HRPP may ask you to complete a survey that asks about your experience as a research participant. You do not have to complete the survey if you do not want to. If you do choose to complete the survey, your responses will be anonymous.

If you are not asked to complete a survey, but you would like to share feedback, please contact the study team or the HRPP. See the "Investigator Contact Information" on this form for study team contact information and "Whom do I contact if I have questions, concerns or feedback about my experience?" on this form for HRPP contact information.

### **Will I be compensated for my participation?**

## Consent Form

No compensation will be provided for your participation.

### Optional Elements:

The following research activities are optional, meaning that you do not have to agree to them in order to participate in the research study. Please indicate your willingness to participate in these optional activities by placing your initials next to each activity.

Yes,  
I agree

No,  
I disagree

\_\_\_\_\_

\_\_\_\_\_

The investigator may audio record me to aid with data analysis. The investigator will not share these recordings with anyone outside of the immediate study team.

\_\_\_\_\_

\_\_\_\_\_

The investigator may contact me in the future for member checking this project.

If yes, provide the following contact information:

Email Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_

### Signature Block for Adult Able to Consent:

Your signature documents your permission to take part in this research. You will be provided a copy of this signed document.

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name of Participant

## Consent Form

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Signature of Person Obtaining Consent

---

Date

---

Printed Name of Person Obtaining Consent

Hello NAME,

Appendix B. Email Communication to Principals.

I hope your semester is off to fantastic start. My name is Erin Giebink, and I am a doctoral student and researcher in the field of educational policy and research at the University of Minnesota. I also work as an administrator at a local charter school that specializes in serving students with disabilities.

I'm writing because I'm currently conducting research on data use among educators in special education and wanted to tell you about it and ask for your help.

As a school administrator, I am tasked with making using data to make decisions every day for our students receiving special education services to ensure that we are providing them with the best possible program and resources in order for them to reach their potential. I am now at an exciting stage in my research where I am looking to talk with other educators and administrators around the Twin Cities to begin to understand a bit more about how data is used to help educators make decisions for their students in special education programs.

I am looking for several schools that have students in grades K-6 (it is okay if you only serve K-5 or some other variation of grades) this year for this research program. The time commitment is small (approximately 30-45 minutes) and would contribute to an important understanding of how we can best utilize data in education to support some of our most vulnerable students.

I am looking for school principals who are interested in learning more about data use and special education who would be willing to spend about an hour of your time talking with me during MONTHS. I would also ask that you consider what other individuals on your staff may play a role in making decisions for students in special education, as I would be interested in asking them for about an hour of their time as well.

If this feels like a topic you are interested in, I'd love to work with you. [Reply to this email if you are interested in discussing this opportunity more.](#)

Thank you for considering this project!

Sincerely,

Erin Giebink, M.A.

Hello!

## Appendix C. Email Communication to Educational Leaders.

I hope your semester is off to fantastic start. My name is Erin Giebink, and I am a doctoral student and researcher in the field of educational policy and research at the University of Minnesota. I also work as an administrator at a local charter school that specializes in serving students with disabilities.

I'm writing because I'm currently conducting research on data use among educators in special education and wanted to tell you about it and ask for your help.

As a school administrator, I am tasked with making use of data to make decisions every day for our students receiving special education services to ensure that we are providing them with the best possible program and resources in order for them to reach their potential. I am now at an exciting stage in my research where I am looking to talk with other educators and administrators around the Twin Cities to begin to understand a bit more about how data is used to help educators make decisions for their students in special education programs.

I contacted your principal/director, NAME, and he/she agreed to contribute to the study I am conducting. After my interview with NAME, I asked him/her for a list of staff members that he/she believed also work with data to help make decisions for students in special education, and he/she indicated that you are someone who could make a valuable contribution to the study. I would ask for no more than about an hour of your time and you would be contributing to an important understanding of how we can best utilize data in education to support some of our most vulnerable students.

If this feels like a topic you are interested in, I'd love to work with you. Please [reply to this email if you are interested in discussing this opportunity more.](#)

Thank you for considering this project!

Sincerely,

Erin Giebink, M.A.

Date: APPENDIX D. Semi-Structured Interview Protocol.  
Time:  
Interviewer:  
Location Code:  
Participant Code:  
Interview ID: Participant Code + Location Code + Date

#### INTRODUCTION, ASSURANCE OF CONFIDENTIALITY, CONSENT

Good morning/afternoon, my name is Erin Giebink; I am a doctoral candidate in Education Policy and Leadership at the University of Minnesota. I am also an administrator at a local charter school. I want to thank you for agreeing to meet with me today.

The purpose of this project is to learn more about how educators use data to support students who receive special education services. Given your role here, I am interested in how you use data to help make decisions regarding students in special education. I am conducting a number of interviews with individuals at several different schools and in different roles to help me gain an understanding of how data are used by educators for students in special education.

This interview is completely voluntary. At any time you may decide to withdraw your participation from this research project and/or end the interview. This interview is also completely confidential. Your name and school will not be attached to any record of this interview, or any publications or presentations. All files containing any recording, transcript, or notes from this interview are confidential and will be identified only by using a code that cannot be connected to you by anyone other than me. I will maintain sole possession of all identifiable interview materials.

In order to preserve as accurate a record as possible from this interview, I would like to audio record it. This will allow me to produce a verbatim transcript of our conversation for the purposes of data analysis, and it will also allow me to spend more time listening to your insights and responses, and less time taking notes. If you do not consent to an audio recording, I will take typed notes during our talk.

Do you consent to an audio recording of this interview? YES NO

This interview will last no more than 45 minutes. It will be a semi-structured interview with open-ended questions. I hope that it will flow similar to a conversation as you reflect on the topics. If at any point you have questions or need clarification about anything we discuss, please feel free to ask. Do you have any questions before we get started?

## SEMI-STRUCTURED INTERVIEW QUESTIONS

### Background

1. How long have you worked for this school?
2. What is your educational background?
3. What is your professional background?
4. What are your primary job responsibilities in your current role?
5. How do you support students who receive special education services?
  - a. CLARIFICATION IF REQUIRED: Which job responsibilities like the ones you described in the previous question relate to making decisions for or about students receiving special education?

### Types of Data

6. What kinds of data do you use to support students in special education?
  - a. CLARIFICATION IF NECESSARY: when you describe the types of data you use to support students in special education, are you describing data for individual students or data for a special education program in general?
7. Think about these data types:
  - a. Assessment –
    - a. CLARIFICATION IF NECESSARY: [examples drawn from school/district assessment inventory obtained prior to each interview (e.g. NWEA MAP assessments, MCA assessments)]
  - b. Behavioral
    - a. CLARIFICATION IF NECESSARY: For example, behavior reports or discipline incidents, such as when a student has aggression towards other students or staff and a record is required due to the severity of the behavior.
  - c. Engagement
    - a. CLARIFICATION IF NECESSARY: For example, survey data of students regarding how interested they are in different school subjects or projects.
  - d. Fidelity of implementation
    - a. CLARIFICATION IF NECESSARY: For example, observation or self-report data from teachers regarding the frequency of use of a new math curriculum to improve student data.
      1. Do you use \_\_\_\_\_ data? Why/why not?  
**(repeated for each data type).**
        - a. PROMPT: You feel comfortable using or interpreting it, you have practice or experience with this type of data, you are required to use it, you

have had professional development to use this type of data

- b. CLARIFICATION IF NECESSARY: when you are talking about \_\_\_\_\_ data you use to support students in special education, do you use that type of data to make decisions about individual students in special education or for a special education program in general?

## Data Purpose

*Questions 8-11 will be repeated four times for each of the four data types identified in question seven above. Each data type will be discussed via questions 8-11, and then repeated starting with question 8 again for the next data type.*

8. Think about ( a-d from question seven) data. What do you use this type of data for?
  - a. PROMPT: accountability, program and/or resource decisions, reporting to state/district/supervisor/authorizer
9. Why do you use (a-d from question seven) data for (stated purpose) instead of another type of data?
10. Do you share, discuss, or collaborate (a-d from question seven) with anyone within this school? For what purpose?
  - a. WHO PROMPT: teachers, psychologists, principal, supervisor, intervention or academic specialist, etc.
  - b. PURPOSE PROMPT: evaluations, intervention plans, resource planning, formative assessment, summative assessment, etc.
11. Do you share, discuss, or collaborate (a-d from question seven) with anyone outside of the school? For what purpose?
  - a. WHO PROMPT: district level staff, other schools, authorizer, parents, state, etc.
  - b. PURPOSE PROMPT: accountability, program planning, intervention plan, requirement by state/district, etc.

## CONCLUSION

Thank you so much for your time today, your insights will be very valuable to my research. While I am conducting my analysis, would you be available in case I have a follow up question? If so, would you prefer that I contact you via phone or email?

PHONE      EMAIL

Part of the data analysis for this project includes member checking, which will be used to ensure that I am understanding your statements correctly and representing your

perspectives accurately in my dissertation. Would you be interested in reviewing my initial analysis and offer feedback?

YES            NO

Thank you again for your time today, I know it is valuable and I appreciate your willingness to contribute to this project. If you have any questions at all, please do not hesitate to contact me. Here is my contact information in case you have any questions or concerns. (PROVIDE) I will send you a final copy of this the results and discussion section of my dissertation when it is complete. Do you have any final questions before we are finished? (ANSWER QUESTIONS) Thank you again, have a great day.

*Twin Cities Campus*

*Human Research Protection Program  
Office of the Vice President for Research*

*D528 Mayo Memorial Building  
420 Delaware Street S.E.  
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Minneapolis, MN 55455  
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<http://www.research.umn.edu/subjects/>*

April 2, 2018 Nicola Alexander

612-624-1507 [nalexand@umn.edu](mailto:nalexand@umn.edu)

EXEMPTION DETERMINATION

Dear Nicola Alexander:

On 4/2/2018, the IRB reviewed the following submission:

Type of Review:	Initial Study
Title of Study:	A Qualitative Study of Data Utilization in Special Education
Investigator:	Nicola Alexander
IRB ID:	STUDY00002724
Sponsored Funding:	None
Grant ID/Con Number:	None
Internal UMN Funding:	None
Fund Management Outside University:	None
IND, IDE, or HDE:	None
Documents Reviewed with this Submission:	<ul style="list-style-type: none"> <li>• Interview Protocol, Category: Other;</li> <li>• Email To Participants Identified by Principal, Category: Recruitment Materials;</li> <li>• Indigo Education Email, Category: Recruitment Materials;</li> <li>• Data Types Example Sheet for Participants, Category: Other;</li> <li>• Giebink - HRP 595, Category: IRB Protocol;</li> <li>• Giebink - Consent Form 2/13/18, Category: Consent Form;</li> <li>• Email to Principals, Category: Recruitment Materials;</li> </ul>

**Driven to Discover<sup>SM</sup>**

The IRB determined that this study meets the criteria for exemption from IRB review. To arrive at this determination, the IRB used “WORKSHEET: Exemption (HRP-312).” If you have any questions about this determination, please review that Worksheet in the [HRPP Toolkit Library](#) and contact the IRB office if needed.

This study met the following category for exemption:

- (4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. (For research conducted, funded, or otherwise subject to regulation by any federal agency “existing” means “existing at the time the research is proposed.” Otherwise, it means “existing at the time the research is proposed or will exist in the future for non-research purposes”)

Ongoing IRB review and approval for this study is not required; however, this determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these activities impact the exempt determination, please submit a Modification to the IRB for a determination.

In conducting this study, you are required to follow the requirements listed in the Investigator Manual (HRP-103), which can be found by navigating to the [HRPP Toolkit Library](#) on the IRB website.

For grant certification purposes, you will need these dates and the Assurance of Compliance number which is FWA00000312 (Fairview Health Systems Research FWA00000325, Gillette Children's Specialty Healthcare FWA00004003).

Sincerely,

Jeffery P Perkey, CIP, MLS IRB Analyst

We value feedback from the research community and would like to hear about your experience. The link below will take you to a brief survey that will take a minute or two to complete. The questions are basic, but your responses will help us better understand what we are doing well and areas that may require improvement. Thank you in advance for completing the survey.

Even if you have provided feedback in the past, we want and welcome your evaluation.

[https://umn.qualtrics.com/SE/?SID=SV\\_5BiYrqPNMJRQSBn](https://umn.qualtrics.com/SE/?SID=SV_5BiYrqPNMJRQSBn)