Principal Perceptions of Students with Disabilities: A Q-Sort Investigation of Mindset and Leadership Practices

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Stephanie L. Morgan

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Stephanie L. Morgan

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Signature:

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Stephanie L. Morgan, Candidate Date

Approvals:

_____

Dr. Karen Larwin, Dissertation Advisor Date

_____

Dr. Kathleen Aspiranti, Committee Member Date

_____

Dr. Matthew Erickson, Committee Member Date

_____

Dr. Patrick Spearman, Committee Member Date

_____

Dr. Salvatore A. Sanders, Dean of Graduate Studies Date

Abstract

This study examined Ohio public school principal perceptions of students with disabilities and leadership practices. Q methodology provided insight into how mindset orientations manifest in leadership and decision-making in the face of accountability for improved outcomes for students with disabilities. Despite general orientation toward a growth-mindset, analysis of Q-sorts completed by 20 public school principals resulted in three factor groups. Shared viewpoints emerged representative of Empowering, Constrained, or Pragmatic leadership practices. Empowering Principals reflected a high sense of efficacy in the ability of staff and students to learn and develop, collaborative problem-solving, shared leadership decision-making, and minimized the existence of staff resistance or operational barriers. Constrained Principals highlighted the difficulties of operational barriers, staff resistance, and difficulties in differentiating to meet student needs. Constrained perspective expressed frustration, limited ability to meet expectations and less collaborative planning for student learning. The final group discussed the struggle of the school experience for students with disabilities. Pragmatic Principals prioritized dealing with day to day emergencies, attendance and discipline issues and expressed limited site-based input in leadership decisions. Implications support the critical role of the principal and suggest that orientation and leadership practice may be just as important, if not more so, than the skills and behaviors outlined in professional standards or acquired through experience. Empowering Principals' perspective could be leveraged to set vision, create culture and establish the collaborative leadership necessary to contribute to narrowing the gap that has existed between students with disabilities and nondisabled peers despite legal and accountability mandates.

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Chapter 1

The current investigation examines Ohio public school principals' mindset perceptions specific to leadership practices for students with disabilities identified under the Individuals with Disabilities Improvement Act ([IDEIA], 2004). This study seeks to add to the literature regarding the leadership challenge principals must adapt in meeting the accountability expectations in the current era of public education. Accountability expectations include closing the gap between students with and without disabilities on several measures. Accountability metrics highlighted include the ability of students with disabilities to learn and achieve at high levels as measured by achievement tests, meeting graduation requirements via the same expectations as typical peers, and to achieve post-secondary outcomes related to independent living, education, and employment. Principals in public schools have significantly increasing responsibility for the instructional programming, organizational structure, and outcomes for students with disabilities as a result of policy mandates such as No Child Left Behind Act ([NCLB], 2001), reauthorized as the Every Student Succeeds Act ([ESSA], 2015) and laws such as IDEIA (2004) (Angelle & Bilton, 2009; Sumbera, Pazey, & Lashey, 2014). Despite increased access to educational opportunities and mandated attempts to raise outcomes for students with disabilities, improved outcomes for students with disabilities have not been realized (McLeskey & Waldron, 2015). Equality of educational opportunities and outcomes have yet to be achieved for students with disabilities, despite being an area of increasing federal monitoring and priority (García & Ortiz, 2013; Jeynes, 2015).

Aside from legal and policy mandates, the role of individual institutional practices has not been thoroughly examined in terms of sustaining the achievement gap (García &

Ortiz, 2013). The role of the principal as the leader of local institutions has evolved from organizational management to instructional and social justice leadership as a result of such accountability pressures. Principals now need to be more responsive to supporting increasingly diverse student populations by creating a vision and environment in which effective instructional practices for all students are a priority (DeMatthews, 2014). The role of the principal's leadership is to prioritize needs, establish relationships, and shape school culture as part of the improvement process (Coviello & DeMatthews, 2016). Educational leaders must adapt and engage in a reconsideration of beliefs, especially related to the education of students with disabilities if outcomes are expected to change (Connor, 2012).

Research on mindset theory and the iceberg model of competence provides a context for examining the influence of internal attitudes and traits on leadership behaviors. In particular, it is suggested that mindset orientation manifests influence in the application of content knowledge and skill-related leadership behaviors. Given the principal's role in translating accountability expectations into instructional practices and improved outcomes for students with disabilities (Fedigan, 2018), it is imperative to understand the internal factors such as the mindset beliefs held by principals about students with disabilities, when examining why the achievement gap to this point has been intractable.

Internal factors influencing decision-making can be categorized as any of the following: beliefs, values, efficacy, adaptability, and mindset (Hattie & Yates, 2014; Dev & Haynes, 2015; Marzano, Waters, & McNulty, 2005; Collie & Martin, 2017; O'Malley, Long, & King, 2015; Brooks & Goldstein, 2008; Dev & Haynes, 2015). Research in the

area of such internal factors has been lacking compared to other areas of educational focus (Christensen, Siegel Robertson, Williamson, & Hunter, 2013). Decisions regarding instructional practices are shaped by the foundation of values and beliefs of the educators delivering services to students (Arduin, 2015; Robinson, 2016; Sumbera et al., 2014). Considering the lack of improved outcomes from mandates and policies alone, it may be necessary to examine and adjust beliefs before practices can be expected to change (Hintz, 2017). The current study intends to gather perceptions from principals and their mindset beliefs about students with disabilities and the impact of leadership practices contributing to the persistence of the performance gap for students with disabilities.

This research is designed to gain more insight into the problem of the unrelenting persistence of the achievement gap for students with disabilities, when compared to students without disabilities, by examining what, if any role internal beliefs have on leadership practices. Despite the existence of federal legislation and state mandates to protect the access to schooling and instructional rights of students with disabilities since 1975, the achievement of students with disabilities attending public schools remains significantly behind compared to the performance of non-disabled peers. Increased accountability expectations have failed to eliminate the achievement gap even though students with disabilities have been included in general education classes at increasing rates and common instructional standards for all students have been implemented (Bacon, 2015).

Research on leadership practices has also been examined extensively in recent decades. Yet, students with disabilities continue to underperform in spite of the research on effective leadership knowledge, skills, and behaviors. Mandates for accountability as

defined by knowledge, or skill-based competencies, are observable and measurable factors that principals as educational leaders, must interpret and implement. However, less understood to date is the role of the educational leaders' internal beliefs regarding the ability of students with disabilities to learn and achieve; specifically, how such beliefs influence leadership behavior and decision-making. The current study seeks to contribute to the literature on effective leadership and gap closure for students with disabilities by obtaining a better understanding, if or how, principal beliefs impact leadership decisions and achievement results for students with disabilities.

Problem Statement

The achievement gap for students with disabilities persists despite decades of efforts to eliminate the disparity. Certainly, funding and decreasing resource concerns, coupled with increasing challenges related to student needs, could explain the persistence of the gap. However, researchers have not extensively examined how internal beliefs about mindset and the ability of students with disabilities to learn and achieve at high levels influence leadership practice decisions influencing student outcomes. Despite decades of legislated access directives, increased accountability sanctions, and definitive research on effective leadership practices the equity of outcomes gap persists for students with disabilities (Angelle & Bilton, 2009; García & Ortiz, 2013; Jeynes, 2015; McLeskey & Waldron, 2015; Sumbera et al., 2014). Specifically, in Ohio, only 65.13% of students with disabilities spend 80% or more of their school day inside the regular class (Ohio Department of Education, [ODE], 2018a), and only 47% of students with disabilities earn diplomas by meeting standard graduation requirements (National Center for Learning Disabilities [NCLD], 2017). National Assessment of Educational Progress ([NAEP],

2017 results for 4th-and-8th-grade reading and math continue to provide evidence of lower academic achievement for students with disabilities compared to peers. Educational leaders must adapt and recognize the impact of internal beliefs related to the education of students with disabilities if achievement outcomes are expected to change (Connor, 2012). Mindset orientations influence how principals interpret and implement instructional leadership decisions, which, in turn, impact the achievement of students with disabilities. The achievement gap may persist as a result of the enactment of beliefs through leadership practices. Research studies have not directly examined how internal mindset orientations held by principals influence leadership practice decisions that contribute to the achievement gap for students with disabilities. The problem this study addresses is the lack of understanding of principal mindset on leadership decisions that impact gap closure efforts for students with disabilities.

Purpose Statement

The purpose of the current investigation is to examine the relationship between Ohio public school principal mindset orientations, leadership decisions, and the achievement of Ohio students with disabilities in order to contribute to the knowledge-base on narrowing the achievement gap. Research investigations have not fully vetted the relationship between leader beliefs and student achievement outcomes as mediated by leadership practices. Increased understanding of this relationship could assist in identifying why some schools are better than others at narrowing the achievement gap for students with disabilities. Results could also increase school districts' abilities to recruit and retain leaders who are most effective in improving outcomes.

Research Questions

Because the intent of this research study is to increase understanding of the mindset orientations of Ohio principals relative to the gap closure achievement of students with disabilities, it is essential to obtain information about the perspectives from practicing principals. In particular, this investigation seeks to gain a better understanding of the following research questions:

1. Relative to students with disabilities, what mindset orientations do principals hold?
2. What influence does mindset orientation have on leadership practices?
3. What impact do leadership practices/decisions have on gap closure for students with disabilities?
4. What principal beliefs related to mindset are associated with improved gap closure for students with disabilities?

The purpose of the current investigation is to examine the relationship between Ohio public school principal mindset orientations related to the ability of students with disabilities to learn and achieve at high levels. Because principal mindsets are internal beliefs or opinions, Q methodology will be used in order to capture such perspectives through the operant behavior of the Q-sort activity.

Methodology

Q methodology is a mixed-methods, factor analysis approach that relies upon standardization of measured scores; it inverts the traditional factor analysis process to examine associations within individual participant responses. Q methodology was designed as an approach to identify a "series of shared viewpoints or perspectives

pertaining to your topic of interest" (Watts & Stenner, 2012, p. 52). Participants within this methodology are required, in an activity called a Q-sort, to prioritize provided statements in rank order (Watts & Stenner, 2012). Given this study's intention of capturing principal perspectives to contribute to the literature base in this area, Q-sort methodology allows for analysis of mindset perceptions with a small, manageable number of participants.

Delimitations and Limitations

Federal laws, such as the IDEIA (2004) or the NCLB Act (2001), outline national standards or expectations related to access to educational opportunity and achievement outcomes for students. However, because each state interprets these federal directives in unique and individualized ways, the scope of this research will be limited to the state of Ohio for the sake of consistency in procedures related to implementation of such laws. Maintaining a focus within the state of Ohio also reduces the variability of other potentially confounding factors such as standards for principal licensure and evaluation standards.

Within the state of Ohio, this research will be further restricted to principals employed in public-school settings in order to use a student achievement metric that holds accountability expectations consistent across participants and settings. In Ohio, all students in public schools are required to participate in statewide assessments in third through eighth grade, and in specific subject-area, end-of-course exams at the high school level. Achievement results on required tests are published annually by the ODE for each public school and district. Students attending parochial or private schools are not required to participate in the same accountability measures. In order to examine how

principal mindset orientations are related to decreasing the discrepancy between disabled and non-disabled students as measured by the gap-closing measure on the ODE's annual local report card, only principals employed in Ohio public schools are included in this research.

As a result of the self-report nature of the survey used to build the concourse, a potential limitation in this research is expectancy bias. Participants may be inclined to answer according to what they believe to be the perceived correct answer as opposed to actual, acted-upon beliefs. A second potential limitation is related to the methodology used as results obtained will not be generalizable beyond the sample of participants and settings from which data will be collected. However, the purposeful selection and design of this research employing Q methodology is not to generalize, but to gather and understand individual orientations on a topic specific to principals in the state of Ohio serving students with disabilities. Due to staffing changes and administrative turnover combined with the lag in gap closure data as collected and reported by the state, an additional limitation could be difficulty in matching current principal mindset orientations with performance results that were assessed under the leadership of a previous administrator.

Finally, while this research is designed to better understand how principal mindset orientations impact the learning and achievement of students with disabilities, there are many other factors aside from principal beliefs that impact student achievement. For example, allocation of district resources, prioritization of district goals and initiatives, staffing ratios, and special-needs programming continuum options are all outside the discretionary influence of individual principals. As a result of these confounding factors,

it is anticipated that individual principal mindset orientation alone will not account for all of the variability between gap closure measures.

The purpose of the current investigation is to examine the relationship between public school principal perceptions of mindset related to the ability of students with disabilities to learn and achieve at high levels. Despite the scope and limitations described above, obtaining a deeper understanding of the characteristic mindset orientations of principals about the ability of students with disabilities to learn and achieve at high levels will contribute to the current literature about effective leadership practices. Improved understanding of leadership practices will then serve to support gap closure for students with disabilities regardless of other district circumstances.

Key Terms

Achievement gap - pattern of significantly discrepant (lower) educational performance on achievement measures by students with disabilities as compared to the performance of students without disabilities. In Ohio, gap closure is measured by comparing the performance of students with disabilities performance on English Language Arts (ELA), math, and graduation with expected targets calculated by the State (ODE, 2018a).

Adaptability - how an individual experiences and responds to changing and possibly challenging circumstances (O'Malley et al., 2015)

Concourse - the process of finding and including representative statements to be used in the Q-sort activity. A concourse identifies important, diverse, and comprehensively representative statements collected from previous literature in the field, interviews, or use of existing survey or assessment items (Watts & Stenner, 2012).

Efficacy - perception of confidence that an individual can be successful at something based on competence and ability to adjust as needed (Hattie & Yates, 2014)

Gap closure - effort to reduce the discrepancy between the annual measurable objective using achievement measures in English/language arts, and math, and graduation rates on the local report card between the group of students with disabilities and all Ohio students (ODE, 2017)

Mindset - "established set of attitudes." Dweck (2016) defined mindsets as either fixed/stable, meaning incapable of change, inflexible; or growth/incremental, meaning permeable and able to be altered (Dictionary.com, n.d.).

Q-sort - a standardized activity where participants prioritize provided statements in rank order (Watts & Stenner, 2012).

Students with disabilities - students identified as eligible for special education and related services under the IDEA as defined in the Ohio Operating Standards for Schools Serving Students with Disabilities (2014), and as reported to the State of Ohio as having one of 13 possible disability categories through the State's Education Management Information System (EMIS, 2019).

Chapter 2

Literature Review

Special education exists in the contexts of political, legal, social, and cultural influence (García & Ortiz, 2013). As a professional field, special education was born in 1975 with the passage of PL 94-142, or the Education for All Handicapped Children Act (EAHCA). This legislation afforded children with disabilities, who had been largely excluded from school, the right to receive an education in the Least Restrictive Environment ([LRE] Villegas, 2017, para. 2). In 1990, EAHCA (1975) was reauthorized. With the change in name to the Individuals with Disabilities Education Act ([IDEA], 1997), the reauthorization also expanded access to the LRE and increased emphasis on parental participation in the development of the IEP (Villegas, 2017, para. 4). The review of IDEA (1990) in 1997 introduced academic achievement expectations and a focus on transition from school to post-secondary services (Villegas, 2017, para. 6). In 2004, the update to IDEA (restated the emphasis on LRE combined with improved academic outcomes. This iteration also introduced a focus on research-based practices delivered in a tiered system of supports using a Response to Intervention (RTI) approach (Villegas, 2017, para. 7). Currently, under reauthorized IDEIA (2004), the law continues to require public school districts to provide access and meaningful educational services to students with disabilities. These laws and policies such as NCLB (2001) and ESSA (2015) have increased students with disabilities' access to schooling in the LRE, while simultaneously increasing expectations for higher achievement and more time spent in general education settings when appropriate (Day, Gu, & Sammons, 2016; DiPaola, Tschannen-Morgan, & Walther-Thomas, 2004). Such legal and policy mandates have increased principal

responsibility for and attention to the instructional programming for students with disabilities (Fedigan, 2018; Sumbera et al., 2014). However, despite increased legal and political mandates and attention to, and research on principal leadership and instructional effectiveness, students with disabilities continue to underperform, both, non-disabled students and the expectations set forth in the name of accountability (DiPaola et al.), albeit the performance of students with disabilities on accountability measures now matters (Christensen et al., 2013).

Intersectionality

Accountability demands fail to recognize that an educational leader's awareness of staff and student needs must expand beyond a solely academic focus to prioritize competing demands (Iachini, Pitner, Morgan, & Rhodes, 2016). Given the complex and dynamic environment in which special education is situated, it is necessary to consider how all aspects interact to support or hinder school improvement efforts for students with disabilities. Several researchers examined results of special education placements or service delivery models and observed that the many complex factors associated with students, educators, and the environmental and cultural influences are likely the reason why inconsistent or mixed results are often found in research on students with disabilities (Cosier, Causton-Theoharis, & Theoharis, 2013; Ham, Duyar, & Gumus, 2015; Sibley et al., 2017; Urick & Bowers, 2014; Wieczorek, 2017). Furthermore, the examination of how educator beliefs interact with practice and use of resources has not been well researched (Kintz, 2017).

The study of the combination of all these influences is known as intersectionality. Intersectionality as a theory is concerned with the intersection of complex issues of

power, politics, and inequity, in particular, to marginalized groups (García & Ortiz, 2013, p. 33-34). In considering students with disabilities as a marginalized group with unequal social and political capital, research on the lack of gap closure for students with disabilities over the past 43 years needs to expand beyond the limited use of unidimensional constructs. To better understand the complex and challenging factors that come together to impact the education and performance of students with disabilities, researchers need to account for the multiple differences within students, the educational environment in which students learn, and the interaction between the student and environmental variables (García & Ortiz, 2013, p. 44).

To date, "the intersection of beliefs, practice, curricular resources is not widely researched" (Hintz, 2017, p. 285). Intersectionality allows for an expanded analysis of the simultaneous interactions of disability, and, the often overlooked, or invisible influences of society. The combination of these leadership decisions are evident in the institutionalized practices, structures, and allocation of resources, which are largely determined by building principals. García and Ortiz (2013) referred to these elements as the "organizational responses" (p. 34). If examined through the lens of intersectionality, research on the education of students with disabilities might assist in transforming the nature of the educational services, organizational structures, and societal understandings necessary to maximize improved outcomes for students with disabilities. In other words, to fully understand how educational institutions recognize and respond to the needs of underperforming students with disabilities, research in this field needs to be expanded beyond the limited or narrow perspectives used in much of the research that has been conducted to date (García and Ortiz, 2013, p. 32-33). To understand the larger

perspective of intersectionality, an introduction to the societal influence of disability is warranted. An examination of the organizational responses as described in the role of principal and leadership practices follows later.

Social and Cultural Considerations of Disability

Disability as a label can be a rather subjective term that means different things to different people (Dudley-Marling & Burns, 2014). For example, a disability can refer to a physical or biological impairment that causes limitations in specific areas of function for an individual; or, disability can refer to the social constructionist/contextual oppression that causes social limitations in functional performance and interaction (Hernández-Saca, Gutmann Kahn, & Cannon, 2018). Social constructionist perspectives of disability are based on the premise that individuals with disabilities are identified on a comparative basis against an expected norm. This comparison is constructed by society through social interactions, attributing meaning to the nature of the impairment of the individual based on contextual or social standards. In other words, society's judgement defines the degree of disability based upon the context and situation. This constructed meaning of disability is currently under-recognized in the current structure of public education.

In contrast, most widely-recognized perspectives to defining disability in schools rely on the existence of intrinsic deficits unique to the individual. This perspective fails to recognize or consider the impact of the social context of the school and instructional model (Dudley-Marling & Burns, 2014; Harry & Klinger, 2007). This definition of disability is referred to as the traditional or deficit-model of disability. When educators perceive students as deficient from the normative standard (what is typically expected),

their problem-solving focus shifts to blame. The resulting intervention approach is to remedy the deficient individual, thereby, redirecting attention away from changing the school processes in a responsive way to systemically support the perceived deficiency (Dudley-Marling & Burns, 2014, p. 18). Harry and Klinger (2007) further asserted that the requirement to identify a disability category of eligibility under IDEIA (2004) perpetuated the institutionalization of the deficit model. As a result, the gap between students from dominant groups and their non-dominant, in this case, identified as disabled peers, is reinforced, and the system continues to ignore and neglect attention or effort toward effective, quality universal instruction for all students.

The difference in how disability is perceived has a significant impact on the priorities and actions taken in response to or support of individuals with disabilities (Anastasiou & Kaufmann, 2011; Dudley-Marling & Burns, 2014). As an example, the difference is evident in how civil rights' and disability rights' organizations have assumed the social model of the term, in contrast to political, medical, and educational institutions in the United States that persist in defining disability in the traditional deficit-model (Anastasiou & Kaufmann, 2011; Dudley-Marling & Burns, 2014; Hernández et al., 2018). Historically, the design and structure of public schooling's interpretation of disability in the traditional sense, the use of merit-based practices, ability grouping, and deficit-based labeling approaches, has perpetuated inequity for underperforming students (Dudley-Marling & Burns, 2014; Ishimaru & Galloway, 2014). Increased accountability pressures, such as public accountability measures on student and teacher performance, have increasingly narrowed the focus of poor performance to blaming within-student

characteristics without consideration of the instructional environment (Frattura & Topinka, 2006).

Public schools still tend to understand and define disability in the more individual, deficit-based model. The requirement of IDEIA (2004) for students to receive one of the 13 recognized disability labels before being entitled to specially designed instruction and related services, causes disability identification to be a relevant metric. Therefore, it makes sense to examine current rates and categories used for identification to provide a contextual background in understanding the outcome gaps. These gaps between disabled and non-disabled students are measured in various ways. Some of the different ways in which the underperformance of students with disabilities are measured include access, achievement, expectations for graduation, and post-secondary outcomes including employment.

Identification Rates

Understanding how many students are identified and the types of disabilities that are most frequently assigned to students in public schools, at both the national and state level, contributes to building an understanding of the context in which public school principals are currently functioning.

National identification data: In 2015, the identification of students into disability categories as defined by IDEIA (2004) revealed that the largest category-was Specific Learning Disability (SLD) at 38.3%. An additional 17.3% were identified as having Speech Language Impairment and another 15% were identified as having Other Health Impairment (U.S. Department of Education, National Center for Education Statistics, [NCES], 2017). Considering eligibility criteria for each of these three most

frequently used categories, none of the definitions for these categories suggests that students identified in these areas would not be able to be instructed in a general education classroom setting when provided with appropriate specially designed instruction, supports, and services as required in an LRE.

Ohio identification data. Ohio data from the 2015-16 school year indicated that 14.8% of Ohio's students between the ages of 3-21 were identified as students with disabilities (ODE, 2017). The largest disability identification category in 2015 was Specific Learning Disability at 41.3%, followed by Speech and Language Impairment at 12% followed by Other Health Impairment with 16.5% of identified students. Ohio's data resemble the national identification data described, above, for these same disability categories.

Examination of the accuracy of disability identification and the processes used to do so is beyond the scope of the current investigation, but it is important to note that there is another layer of complexity for consideration in the larger picture of how public schools are serving students with disabilities. In particular, there is a lack of consistent definition, interpretation, and agreement as to the processes used in the identification of students as having disabilities, both, within and across states (Fuchs, Fuchs, & Stecker, 2010).

Despite legal actions, accountability mandates, and efforts to monitor compliance, students with disabilities continue to underperform relative to their non-disabled peers. Unfortunately, mandates for inclusive educational services have not resulted in improved outcomes for students with disabilities (McLeskey & Waldron, 2015). Along with all of the mandates and accountability expectations, there have also been focused efforts

examining disaggregated student performance at all levels of government (federal, state, and local) as a measure to reform and improve outcomes for students. To provide evidence of the performance gaps for students with disabilities, a few of the most relevant measures are described below. The methods selected here are believed to be subject to the influence of educational leadership practices.

Achievement Gap

Achievement on standardized assessments has been the primary method of documenting and measuring the achievement gap between dominant and non-dominant student groups (Ladson-Billings, 2006). Regardless of the type of assessment, the performance of marginalized student groups, including students with disabilities, remains significantly below the performance of the dominant group. Traditionally, the dominant group has been White middle- and upper-class students. For the purpose of this research investigation, the dominant group refers to students not identified with a disability under IDEIA (2004).

As a specific illustration of this gap in achievement outcomes, the results of the 2017 NAEP (2017) revealed that the national average scores for non-disabled students on 4^{th-} and-8^{th-} grade reading, respectively, were 227 and 271, compared to 187 and 232 for students with disabilities, respectively. On the 2017 NAEP (2017) math assessment, students without disabilities scored 243 and 288 in 4^{th-} and-8^{th-} grades, respectively, while students with disabilities scored 214 and 247, respectively.

Ohio's 2017 NAEP (2017) data were similar. Ohio's average math scores for students without disabilities were 246 and 294 in 4^{th-} and-8^{th-} grade, respectively, while students with disabilities scores were 212 and 250, respectively. In reading, students

without disabilities, in Ohio, scored 231 (4th grade) and 274 (8th grade); and, their corresponding peers with disabilities scored 189 and 234, respectively (NCES, 2017).

The snapshot of NAEP (2017) scores provided evidence that students with disabilities are not performing commensurate with typical peers despite increased access to the LRE as mandated by IDEIA (2004).

Equal Access

The ideas of LRE and Inclusion are two separate but related concepts that have been blurred in many educational discussions regarding education of students with disabilities. Although they are connected, they are different concepts that building administrators must understand. Inclusion represents a movement to place students with disabilities in general education with typical peers (Yell, 1995). Conversely, LRE refers to a continuum of placements, with the most appropriate placement for an individual student decided by the student's IEP team (Yell, 1995). While access to educational opportunity is most often measured by the percentage of time spent in the LRE and is not the most meaningful measure of access to educational opportunity, Ohio uses the percentage of school-day time in general education settings as a measure of access (DeMatthews, 2015, p. 1031). Although LRE is not specifically defined in IDEIA (2004), the law does that students with disabilities be educated to the maximum extent possible with non-disabled peers. Furthermore, IDEIA (2004) required that removal from the general education environment and typical peers only takes place when, even with supplementary supports and services, it is not possible to achieve educational outcomes for the student because of the nature and severity of their disability (IDEIA, 2004). Since the passage of this legislation, data indicate that more time is spent in the

general education setting by an increasing number of students with disabilities as reviewed below.

National LRE data. In the United States during the 2014-15 school year, 13% of students between the ages of 3 and 21 received services as students with disabilities under the IDEIA (2004). During that same year, 95% of these students spent time in regular education settings, for part of their school day (U.S. Department of Education, 2017). More specific data on LRE placements for the same year, revealed that 62% of students spent at least 80% of the school day in general education, representing an increase from 33% of students who spent 80% or more of the day in general education classrooms in 1990 (U.S. Department of Education, NCES, 2017). An additional 18.7% of identified students spent between 40%-79% of their school day in a general education setting with typical peers, while 13.5% were in general education settings less than 40% of the day. Slightly over 5% of students were in more restrictive settings as reported in the 39th Annual Report to Congress (U.S. Department of Education Office of Special Education Rehabilitative Services, [OSERS], 2017).

Despite the dramatic increase in the percentage of students with disabilities spending 80% or more of the day in general education, the achievement gap persists at the national level.

Ohio LRE data. Based upon 2015 data, 62.3% of Ohio students served under Part B of IDEIA (2004) were within the general education setting for 80% or more of the time. An additional 18.3% spent time in general education between 40-79% of the school day. In Ohio, 11.3% spent less than 40% in general education, and 3.9% of identified students were in a more restrictive placement (ODE, 2017). Ohio's data closely resemble

the national averages. Despite increasing rates of inclusion at both the national and state level, students with disabilities are still not realizing the same educational opportunities as typical peers. These statistics suggest that increased access to general education classrooms alone is not producing the desired achievement outcomes for students with disabilities. Realizing that access alone is insufficient, learning expectations for SWD in the general environment are worthy of examination in order to contribute to improved outcomes.

Expectations

High expectations for students with disabilities is yet another area of increasing concern and monitoring at the federal and state level. From an accountability perspective, expectations held for students can be measured and reported by using graduation requirements as a metric. Each state sets forth the minimum requirements that must be met in order to receive a diploma. Although each state has different requirements, the typical requirement for a diploma consists of a combination of acquired credits by content area and demonstration of mastery of critical subject area content as assessed by national- or state-developed and administered assessments. The assumption is that accountability and reporting mandates have been effective in increasing the performance of students with disabilities, and as students with disabilities' access to the general education setting has increased over the years, larger numbers of students with disabilities would be meeting standard graduation requirements. A closer examination of national and Ohio-specific graduation rates follows.

National graduation data. Historically, students with IEPs have been able to be excused by their IEP teams from participation in standard accountability assessments

(Bacon, 2015, p. 367). Aside from participation exemption, some students with disabilities have had access to a modified or adjusted form of assessment, while others have been required to participate but have been exempted from the consequences of below proficient performance. Increasing attention is now focused at the federal and state level on the expectations placed upon students with disabilities as measured by meeting graduation requirements through standard (same as typical peer) expectations (Bacon, 2015, p. 367). During the 2014-15 school year, 69.9% of students, in the United States, receiving services under the IDEIA (2004) graduated with a diploma attained through the same requirements as non-disabled peers (NCES, 2017).

Ohio graduation data. Based on 2015-16 Ohio graduation data, only 35% of students with disabilities met standard diploma requirements, which represents a decrease from 47.1% in 2008-09 (ODE, 2017). More recent data for Ohio were not available within the 39th Annual Report to Congress, likely as a result of changes to data-reporting requirements at the federal level. Another reason that recent data may not be reported is because the Ohio Revised Code (ORC) has allowed the issuance of a regular diploma even when an IEP team has exempted an identified student from consequences of not passing required graduation tests with or without accommodations. Based on critical feedback that Ohio has received from the Federal Office of Special Education Programming, Ohio will no longer be able to include students whose IEPs contain exemptions from the consequences of not passing end-of-course exams as graduating with a standard diploma on the publicized metrics designed to increase accountability for this expectation (Poiner, 2017).

Ultimately, a goal of an effective education is for all individuals to obtain the knowledge and skills necessary to lead as independent and self-directed a life as possible. Having considered achievement, access, and expectations for graduation, outcomes for students with disabilities once they exit public school services should also be examined

Post-Secondary Outcomes

Individuals with disabilities often experience disparate outcomes across many aspects of independent functioning, including education, access to employment, and post-secondary living arrangements (Hernández et al., 2018). Many students with disabilities exit high school services and fail to enter post-secondary education or competitive employment. Instead, they transition to segregated employment, workshops, or day activity programs (Hill, Kline, & Richards, 2018). Recognizing these areas of concern, IEP teams, as another accountability development, are charged with designing comprehensive transition plans to support students' post-secondary education and training, employment, and independent living outcomes. These transition plans are intended to include annual measurable goals that are attained through instructional activities and supports provided by school staff. As evidence of the increasing accountability mandate regarding transition, Ohio now requires progress reporting on the transition activities within a student's IEP, in addition to the previously required progress reporting on the annual goals historically required under IDEIA (2004). The goal of the increased post-secondary preparedness efforts is for students with disabilities to have equal opportunity to support themselves in directing their lives as independently as possible. Employment opportunities during and after high school are critical to this endeavor.

Employment

The Workforce Innovation and Opportunity Act of 2014 (WIOA) is a federal law designed to ensure that students with disabilities have "a meaningful opportunity to prepare for, obtain, maintain, and advance in, or regain competitive integrated employment" (Zake, 2016, p. 1). WIOA (2014) outlined the rigorous expectation that the primary employment goal for all students is integrated, competitive employment. This legislation revealed another area where a gap between students with and without disabilities exists in the capacity and effectiveness of public schools in preparing students for employment. Students with disabilities are often not offered the same employment and job-training experiences as their non-disabled peers, and, instead, are subject to pre-vocational training and activities that are not adequately-timed, relevant, or equivalent to meaningful job development skills (Hill et al., 2018).

Upon consideration of the gaps discussed above, there is evidence to justify examination of outcomes compared to intended results as mandated by laws and policies. The intersection of complex and dynamic contextual factors related to education of students with disabilities creates unique challenges for public education and educational leaders. Uniform achievement expectations for all students imply that there is only one right way to learn or measure learning and often fails to account for the complexity and magnitude of variability in learning differences and educational and leadership structures. Failing to recognize the intersection of such complex dynamics results in an ineffective, one-size-fits all approach to educational service delivery that fails to close the achievement gap (Frattura & Topinka, 2006; Schulte, Stevens, Elliott, Tindal, & Neese, 2016). Such unidimensional approaches also fail to realize the benefits received from the

more flexible and individualized nature of special education services as they have developed over time (Anastasiou & Kauffman, 2011).

Demands related to testing performance and accountability have caused changes to the way special education services are delivered in various ways (Lombardo-Graves, 2017), but these changes have not been coordinated or effective in producing intended outcomes. In fact, one example of a response to accountability pressure gone awry is that accountability has sometimes had the unintended outcome of increasing exclusionary practices for students with disabilities. Exclusionary practices sometimes result from increased fear of negative evaluations, perceptions of increased risk of disrupted learning environments, and the creation of segregated classrooms for students with disabilities (Bacon, 2015; DeMatthews, 2014). Another example of an unintended consequence of accountability is found in how implementation of high-stakes accountability measures has reduced the instructionally-focused professional development opportunities for teachers (Wieczorek, 2017). In summary, evidence suggests that over the last 25 years, students with disabilities, although increasing in number and expectation, are less likely to graduate, are more likely to receive instruction using less rigorous curriculum, and have fewer post-secondary opportunities than the normative, general-education student population (Frattura & Topinka, 2006, p. 329).

Based upon the disheartening review of the various results obtained thus far within the current educational system, it is evident that the current structure of schooling is failing to achieve desired, intended, and mandated results for students with disabilities. Despite reform efforts and data tracking, equality of educational services and outcomes has yet to be achieved (García & Ortiz, 2013; Jeynes, 2015). Given the multiple areas

(education, expectation, employment) in which students with disabilities are still underperforming compared to same-aged peers, efforts to achieve gap closure will likely require more coordinated efforts across larger contexts (Jeynes, 2015). Specifically, reducing the performance gap for students with disabilities will require a systemic change in the structure of the educational system. Education needs a shift in perspective from the deficit-based traditional model to an asset-based approach that builds upon the strengths of all learners as valued and relevant members of the school community (Frattura & Topinka, 2006; Ishimaru & Galloway, 2014).

Few schools have determined what it takes to be both inclusive and effective (DeMatthews, 2015, p. 1031; McLeskey, Waldron & Redd, 2014). Aside from misaligned, unintended side effects of accountability pressures, perhaps the achievement gap continues to persist despite reform efforts because of a mismatch between principal effectiveness or level of experience and the student needs within the building. The more needy the group of students, the higher level of efficacy and increased longevity of the leader within the building are necessary (Bacon, 2015; Swearingen, 2014). This is contrary to retention patterns. More often, higher student-need buildings have less experienced or less effective administrators (Swearingen, 2014).

We have learned from the few schools that have produced improved outcomes regarding roles the educational leaders play in serving students in schools by coordinating and redefining the structure of school to support equitable outcomes for students with disabilities. More can be learned about transforming education to address the gap between non-disabled and disabled students by studying those school leaders who have shown efficacy in improving learning and life outcomes for students with disabilities

(Ishimaru & Galloway, 2014). Examination of the impact of accountability expectations on school leaders is warranted.

Impact of Accountability on the Principalship

Increased accountability pressures have resulted in an amplified focus on the effectiveness of principals as individuals (Searby, 2014). The principal's role in educational leadership for students with disabilities has certainly expanded as a result of legislation such as NCLB (2001) and IDEIA (2004) (Angelle & Bilton, 2009; Ishimaru & Galloway, 2014). Understandably, the principal as a traditional leadership influence within the current organization of school structures, represents a critical opportunity for leveraging desired change toward more inclusive and effective learning environments for underachieving student populations (DiPaola et al., 2004; Ishimaru & Galloway, 2014; Leithwood, Seashore-Louis, Anderson, & Wahlstrom, 2004). Such legal requirements are translated into action by educational leaders on the front lines in practice. As a result of changing policy, the role of the principal has had to evolve from manager to instructional leader, capable of supporting diverse learners. The principal, as instructional leader, is the primary vision-setter and creator of a school's culture (Mendels, 2012). The implication is that it takes more than a management perspective and legal mandates to impact educational practices that impact the performance of students with disabilities (Ishimaru & Galloway, 2014).

The principal's impact on student achievement has been demonstrated by prior research. The impact of the building leader has been determined to be an indirect influence on student learning that is second only to the impact of teacher quality (Leithwood et al., 2004; Marzano, 2005; Mendels, 2012). Educators need to stop over-

focusing on technical aspects of inclusive service delivery (such as compliance with procedural mandates) and shift attention toward efficacy of services (McLeskey & Waldron, 2015). In order to adjust to the increased expectations, principals need to examine how their internal beliefs impact their decision-making in order to tackle the enormity of such expectations in leading effectively. The need to adjust to the demands of accountability have forced educational leaders to adapt and engage in a reconsideration of beliefs, especially as related to students with disabilities (Connor, 2012).

Several challenges arise from that course of evolution, including principal preparation and training, experience, and leadership practices (Burdette, 2010; Fedigan, 2018). Preparation and training requirements for building leaders have not kept pace with the increased demands expected of principals to be effective within the role. Principals must adapt by changing their leadership practices and decision-making as a result of the increased expectations for students with disabilities.

Efficacy within the Role of Principal

To build an equity framework within schools, principals must have preparation in special education (Pazey & Cole, 2012). Given the increasingly diverse student population served in general education settings, educators need to be better prepared with knowledge and training in evidence-based practices to meet student needs (Loiacono & Valenti, 2010; Pazey & Cole, 2012; Sumbera et al., 2014). Researchers have investigated the knowledge, training content, and skill set related to effective principal leadership for serving students with disabilities. However, many principals report feeling as though their preparation related to knowledge and skills for serving identified students in special education has been insufficient (Fedigan, 2018). There are several obvious areas of skill

and knowledge where expertise is expected of building leaders. These areas include legal knowledge, leadership capacity and style, curricular and instructional best practices for all students, including students with disabilities, and management capabilities. Furthermore, given principals' roles as district representatives in special education supervision and resource allocation decision-making, logic would expect principal training and practice standards to include an emphasis on the required special education content knowledge and leadership skill development to achieve necessary competencies. In an effort to understand how the knowledge and skills are developed for aspiring and practicing principals, a review of preparation and practice standards is in order.

Knowledge and Skills Needed for the Principalship

Legal knowledge. Education is always evolving. Special education is even more so as a heavily mandated and monitored area of education. School leaders must be aware of the legal requirements and be able to use legal training to inform the frontline decisions made regarding students with disabilities. However, many principals have not had extensive training in school law and are unaware of legalities, especially related to special education. Lack of knowledge, in this area, can lead to uninformed decisions that could be very expensive for the district under threats of litigation (Militello, Schimmel, & Eberwein, 2009; Schaaf, Williamson, & Novak, 2015).

Principal preparation standards. In 1996, the Council for Chief State School Officers ([CCSSO], n.d.) developed standards for educational leadership preparation known as the Educational Leadership Constituents Council ([ELCC], 2011). These standards were revised slightly in 2008. However, given the significant changes in the larger environmental, political, and accountability context in which education now exists,

these standards were recently overhauled and renamed the National Educational Leadership Preparation Program Recognition Standards ([NELP], 2018, September). Educational leaders at the building-level are now expected to do more than building management in the effort to improve the learning outcomes of all students. Principals and other building-level leaders must create a balance between providing enough challenge for each student, while simultaneously creating supportive and collaborative working conditions. Accountability expectations now include emphasis on current and future academic readiness, including preparing students for college and career readiness, in addition to providing for the general overall well-being of each student (National Policy Board for Educational Administrators, [NPBEA], 1987). Due to the increased expectations for building administration, the new NELP (2018) standards reflect an expanded need for more collaborative and distributed approaches to leadership. The NELP (2018) standards serve as an organizational framework consisting of eight standards that are used to outline the knowledge and skills that novice building leaders are expected to know and demonstrate upon completion of an accredited/high quality, advanced-degree, school-leadership preparation program (NPBEA, 1987). The NELP (2018) standards are summarized below.

1. Mission, Vision, & Improvement – principals focus on continuous improvement through development and articulation of core values with a reliance on data, community relationships, and infusion of technology as a resource (p. 11).
2. Ethics & Professional Norms – principals model and cultivate professionalism, persistently engaging in ethical decision-making (p. 13).

3. Equity, Inclusiveness, & Cultural Responsiveness – school leaders must be aware of, confront injustice, and implement culturally responsive practices, behavior supports, and be able to identify the causes of inequity and develop procedures to reduce and reform unjust practices (p. 15).
4. Learning & Instruction – principals ensure high quality, goal-aligned instruction that is technology-accessible, data-based, and informed by both formal and informal assessment and evaluation results (p. 18).
5. Community & External Leadership – principals engage as advocates, develop external resources and relationships within the larger community, engage diverse stakeholder groups, and effectively communicate (p. 21).
6. Operations & Management – building leaders are adept at budgeting, resource allocation, application of law and policy, effective governance, resource planning and scheduling, and managing interconnected systems (p. 24).
7. Building Professional Capacity – principals ensure collaboration, respect professionalism, cultivate systems of evaluation and support, provide effective supervision and professional development, model reflective practice, and are responsible for hiring and retention of high-quality staff. They also distribute leadership and decision-making in order to promote instruction aligned to improvement efforts (p. 27).
8. Internship – Finally, principals have access to a role model through a mentorship experience that provides the opportunity for application of content knowledge to authentic experience (p. 30).

The NELP (2018) standards serve as a framework for clarifying the essential knowledge and competencies that beginning school leaders must acquire in the process of seeking advanced training from preparatory institutions (NPBEA, 1987). In comparison to the previous ELCC (2011) standards, there is a greater emphasis on creating an inclusive school culture, increased focus on individual student needs, ensuring equitable access to educational opportunities, and sustainable improvement through hiring and retention practices. Principal preparation programs are evaluated as either having met, met with conditions, or not meeting these standards based upon candidate performance on six assessments and documentation of an internship experience (NPBEA, 1987).

Principal standards for practice. The knowledge and content of what is known and understood about effective leadership is translated into actionable application through the development of standards of practice (Ishimaru & Galloway, 2014). Effective principal leadership practices have been defined through various iterations of professional standards. Currently, the Professional Standards for Educational Leaders ([PSEL], 2015) guide expectations for effective leadership. The PSEL (2015) were developed as an evolution from the prior version known as the Interstate Leaders Licensure Consortium ([ISLLC], 1996) (National Policy Board for Educational Administration, [NPBEA], 1987). The ISLLC (1996) standards served as the basis for professional principal expectations in at least 40 states (Ishimaru & Galloway, 2014).

Due to the lack of focus on marginalized populations in the language of the ISLLC (1996) standards, the development of the revised PSEL (2015) standards intentionally included language specific to preventing marginalization, promoting effective instruction for all students, and holding high standards for all students.

The changing context in education requires that principals go beyond a focus of daily to-do-list activities toward a larger focus on instruction, equal access to educational opportunities, higher expectations for learning and achievement for all students, and a strength-based appreciation culture that values diversity as an asset to learning (NPBEA, 1987).

The PSEL (2015) standards leveraged research-based leadership behaviors that have been found to impact student learning. These standards serve as a tool to provide clear expectations, professional discussion, reflection on changes from previous expectations, and creation of a shared understanding of what building leaders should know and be able to do. Application of such standards also allows for consistency and sustainability across a diversified context of educational leadership by informing selection, training, hiring, evaluation, and retention of quality leaders within the field. The 10 standards consist of 83 elements that expand previous standards and provide for more specificity of leadership actions than the previous version. Beyond increased specificity, the new standards also include the rationale behind the standard to align the means with the intended end-goal of each action (Murphy, Seashore-Louis, & Smylie, 2017). Each of the 10 standards summarized below explicitly address each student's academic success and well-being (p. 22).

1. Mission, Vision, and Core Values – school leaders develop, advocate, and enact a shared vision focused on high quality education.
2. Ethics and Professional Norms – principals make ethical decisions and abide by professional norms.

3. Equity and Cultural Responsiveness – effective leaders are continuously focused on ensuring equitable educational opportunities.
4. Curriculum, Instruction, and Assessment – leaders support rigorous and coherent curricular and instructional programs.
5. Community of Care and Support for Students – quality leadership builds a community that is caring and inclusive of all students.
6. Professional Capacity of School Personnel – principals build the professional skills and abilities of all staff in support of student outcomes.
7. Professional Community for Teachers and Staff – school leaders develop a community of professionals.
8. Meaningful Engagement of Families and Community – effective leaders initiate and maintain mutually beneficial partnerships with internal and external stakeholders.
9. Operations and Management – leaders focus on effective operations and resource allocation.
10. School Improvement – effective building leaders are agents and advocates for ongoing school improvement.

The PSEL (2015) as revised reflect both content knowledge and personal qualities as the essential elements of leadership for improved student learning outcomes (Murphy et al., 2017, p. 26). The inclusion of the emphasis on equitable educational opportunities, high expectations for all students, and internal values and characteristics reveal that effective leaders are more than just successful managers.

By comparing both the NELP standards for preparation and the PSEL standards for practice, it is evident that there is an emphasis on content knowledge and skills principals need to be effective leaders. Less evident are the internal drivers that influence the application of the knowledge and skills.

Ohio standards for principals. Specifically in Ohio, there are 10 standards derived from the PSEL (2015) standards, defining the expectations, practices, roles, and responsibilities that are required for effective leadership. Ohio has organized the standards into areas or domains, including Leadership, Learning, Culture, and Management. Similar to the PSEL (2015), the intention is to extend the role of the principal beyond that of a manager. In the era of standards-based reform and accountability demands, principals need to implement the high-quality leadership practices required to meet the challenges of the changing context of educational leadership (ODE, 2018). The current standards for Ohio's principals as outlined by the ODE (2018) are provided in Table 1.

Table 1.

Summary of Ohio Standards for Principals

Domain	Standard	Description
Leadership	1: Mission, Vision, and Core Values	The effective educational leader develops, advocates and enacts a shared mission, vision and core values.
	2: Ethics and Professional Norms	The effective educational leader acts ethically and according to professional norms.
	3: School Improvement	The effective educational leader implements collaborative structures and shared leadership to analyze data and causality, align evidence-based strategies to deliberate goals, develop the capacity of staff, and partner with internal and external supports to improve teaching and learning conditions and outcomes.
Learning	4: Curriculum, Instruction and Assessment	The effective educational leader fosters an environment of effective and rigorous personalized instruction by ensuring each student has equitable access to effective teachers, leaders and learning supports.
	5: Professional Capacity of School Personnel	The effective educational leader supports all staff by promoting and organizing an environment focused on continuous improvement and personal growth to achieve positive outcomes for each student.
Culture	6: Equity and Cultural Responsiveness	The effective educational leader models, supports and cultivates a school culture characterized by equity and inclusiveness.
	7: Community of Care and Support	The effective educational leader develops and sustains positive partnerships with and among students, staff and stakeholders to create a safe and caring school environment.
	8: Meaningful Engagement of Families & Communities	The effective educational leader develops and sustains partnerships with families and the community by acknowledging the school as a community resource and understanding the context of its existence within the larger community.

Management	9: Strategic Staffing	The effective educational leader is integral to the recruitment, hiring and assignment of staff to ensure representation of diverse expertise and skill sets are aligned to the priorities of the focused plan while also promoting staff professional growth, cultural competence and opportunities for leadership.
	10: School Operations	The effective educational leader develops and implements structures to maximize learning through relationships, management, fiscal responsibility and adherence to district and state laws, policies and procedures.

Note. Ohio Department of Education. (2018b). Ohio standards for principals (p. 6). Retrieved from https://education.ohio.gov/getattachment/Topics/Teaching/Educator-Equity/Ohio-s-Educator-Standards/Ohio_Principal_Standards.pdf.aspx?lang=en-US

Historically, various standards for principal preparation have been used to guide educational leader-development programs. In addition to principal training standards, professional practice standards have intended to outline the foundational skills that leaders need to possess to effectively support student learning outcomes (NPBEA, 1987). Professional standards also attempt to provide a common definition of the essential knowledge, skills, and expectations for building leaders (Fedigan, 2018). The prior ELCC (2011) standards provided an implicit context for social justice and special education (Pazey & Cole, 2012). As a result of increasing accountability, the PSEL (2015) standards now include language specific to preventing marginalization, promoting effective instruction for all students, and holding high standards for all students. Despite the emphasis on diverse learners in the standards, principals report that leadership standards have not adequately prepared leaders to meet the demands of their role regarding special education (Schaaf et al., 2015). As such, standards alone have failed to address the leadership expectations relative to students with disabilities (Christensen et al., 2013). The current version of the standards focuses on expected knowledge and skills for principals, despite the impossibility for one person to single-handedly produce all

those competencies in isolation (Ishimaru & Galloway, 2014). Therefore, principal leadership ability in the current educational context must extend beyond the minimum requirements outlined in professional standards (Voltz & Collins, 2010) and beyond the traditional hierarchical role of the principal (Ishimaru & Galloway, 2014).

Applied Role and Leadership Practices of the Principal

The standards relevant to principal preparation and practice, as well as research, reveal the leadership practices that are essential for principals to demonstrate school improvement efforts focus on improving student performance. Mendels summarized these practices in five basic areas (Mendels, 2012, p. 55, as cited in The Wallace Foundation, 2002), including:

1. Shape the vision – the vision creates the expectation of high standards for all learners and the commitment by all staff.
2. Climate creation – an unwavering commitment to a collaborative learning environment that supports and works toward improving learning outcomes
3. Leadership in others – a pivotal practice is empowering the leadership capacity and influence of others in decision-making.
4. Instructional improvement – principals working to improve school outcomes relentlessly pursue effective instructional strategies and leverage organizational structures for the benefit of struggling learners
5. Resource management – principals working toward improvement focus consistently on systemic data analysis and plan and monitor accordingly.

All of these place an increased emphasis on the importance of the principal. Researchers have investigated all these elements, both, in isolation, and, in various

combinations. Findings discussed below will highlight each of these areas as pertaining to students with disabilities.

Culture and advocacy. The function of the principal is to respond to contextual and competing demands by advocating for changes to support students with diverse learning needs and to create the vision and context to support effective instructional practices (DeMatthews, 2014). Primarily, the principal has a significant role in establishing a positive culture within a building, which, in turn, fosters collaboration and an environment conducive to productive learning (Fedigan, 2018; Swearingen, 2014). This requires strong principal involvement in leading change on behalf of students with disabilities as well as the development of a vision centered on core values committed to effectively supporting students with disabilities (Fedigan, 2018; McLeskey & Waldron, 2015).

State and district initiatives. Interpretation and implementation of various initiatives impact how instructional services are delivered to students with disabilities. Principals are required to follow district policies and work toward identified state or district goals (Fedigan, 2018; Swearingen, 2014). As an example, Marks, Kurth, and Bartz (2014) describe how inclusion can have a different meaning within educational settings. For some educators, inclusion refers to providing access to the general education setting. For others, it means being an included and valued member of the school community. The difference in these definitions implicates not only instructional practices, but beliefs also (Bacon, 2015, p. 379; Cosier et al., 2013; Fedigan, 2018). District and building leaders must examine decisions related to instructional practices and organizational structures that promote students with disabilities access to quality

educational opportunities. The influence of the principal on student achievement is also likely to vary based upon the arrangements such as the grade-level structure of the building, or presence of other administrative assistance. The goals and priorities of the district, along with how the school system is structured, will invariably impact how a principal executes leadership practices. The redesign of special education services has been coerced as an afterthought in the accountability reform efforts (Connor, 2012), which further compounds the lack of attention to special education efficacy at the organization level.

Principal as the district representative in special education meetings. One of the main responsibilities of principals related to special education decision-making comes in the form of participation in IEP team meetings. The Ohio Operating Standards for the Education of Children with Disabilities (ODE, 2014) outlined the state and federal requirements for the provision of FAPE through the delivery of special education and related services for students identified under the IDEIA (2004). Included within these guidelines are the required roles and responsibilities related to students' IEP team membership. The law requires that one member of the IEP team include:

> A representative of the school district who: (i) Is qualified to provide, or supervise the provision of, specially designed instruction to meet the unique needs of children with disabilities; (ii) Is knowledgeable about the general education curriculum; and (iii) Is knowledgeable about the availability of resources of the school district. (ODE, 2014, p. 122)

Given the responsibility for the allocation and commitment of resources combined with the obligation of supervision, this role of district representative is frequently served

by the principal as the primary building-level administrator. Moreover, examination of the role of institutional practices has been lacking, to date, as a potential contributory factor sustaining the achievement gap (García & Ortiz, 2013).

The role of the principal logically possesses some degree of social and political influence because the principal is the cultural constructor of institutional structures that convey implicit power and significance. The way the principal creates organizational structures (schedules, allocation of human and capital resources, etc.) conveys priorities, power, and significance that either refutes or perpetuates stereotyped beliefs about students with disabilities' capacity to learn (Fedigan, 2018; García & Ortiz, 2013). While the role of the principal has many similarities regardless of district or building assigned, individual interpretation and application of the duties results in unique and individualized assignment of importance or prioritization of values, resulting in variability in the creation of the organizational structures and leadership decisions (Swearingen, 2014).

A review of extant research also confirms that longevity of consistent leadership within a building has demonstrated a significant positive correlation to student achievement and school improvement efforts (Swearingen, 2014). Turnover among building principals obviously confounds improvement efforts. Such turnover among principals or the lack of consistent application of the duties of the role due to variability in values, priorities, and beliefs could also contribute to differences in student achievement levels. The leadership approach used to implement all these elements could also impact expectations, delivery of services, and student outcomes.

Leadership Approach

Leadership can be considered the ability to inspire change in others (Bozkurt, 2009). While leadership characteristics are unique and variable from one leader to another, and exist in many established styles, there are core elements of leadership that are non-negotiable to affect change. Bozkurt (2009, p. 46) articulated these as (a) dissatisfaction with the status quo, (b) a vision of the desired goal as a possibility, and (c) action aligned to that goal. Only when the totality of these three elements is greater than the resistance does change occur. These three practices are essential to leveraging change for more equitable outcomes for marginalized students (Ishimaru & Galloway, 2014). What is valued and prioritized within a school community will be dependent upon how issues are understood, how leadership is dispersed, and upon the degree of inquiry in understanding the nature of the issue (Ishimaru & Galloway, 2014). As an example related to improved outcomes for students with disabilities, if educators do not expect students with disabilities to perform better, an achievement gap is to be expected and is therefore not a problem. If a problem is not perceived, no improvement efforts are necessary. How the problem is perceived will impact approaches to solving the problem of the gap between students with disabilities and peers. As accountability expectations bring the discrepant performance of students with disabilities to light, it is more likely that the deficit-based model of disability will be reinforced. As a result, the issue will be addressed as a problem centered in that population. This means the attempts to intervene will be focused on fixing those individuals with disabilities as opposed to changing the systemic context of the school's organizational structures and instructional practices (Ishimaru & Galloway, 2014). Transformative change in outcomes will not be realized

unless educators recognize and confront the intersection of systemic, context-based perceptions with the traditional organizational responses that perpetuate the current educational dilemma.

Relative to the transformative nature of leadership, if the source of leadership within the building resides in the principal as the titled authority in the organizational chart, the onus of solving the issue will rest upon the shoulders of the principal alone (Ishimaru & Galloway, 2014). If leadership is genuinely exercised across formal and informal leaders within the building, there will be an increased sense of ownership and accountability for remedying the poor performance of students with disabilities.

Finally, if, as a leadership practice, teams of educators engage in deep analysis and understanding of the discrepant performance of subgroups using varied and multiple sources of data, there will be a more expansive and shared understanding of root causes, ownership of the issue, and potential solutions at the system-level, than if there is lacking or superficial reliance upon data. Most often, teams engage in superficial data review, which relies only on the use accountability data from state assessments without any cross-checking with other data sources to identify root causes (Ishimaru & Galloway 2014).

The role of the principal is to translate accountability expectations into school practices (Finnigan, 2010; Ishimaru & Galloway, 2014). Effective leadership is required in order to effectively adapt to changing expectations and meet increasing demands for improving school and student performance. The function of the principal, as the effective leader, is to prioritize needs, build relationships and trust within the school community, and to shape school culture (Coviello, & DeMatthews, 2016).

School environments that are conducive to learning incorporate effective progress-monitoring of all students, require high expectations of all students, and ensure quality, differentiated first-instruction designed to meet diverse student needs (García & Ortiz, 2013). While different styles of leadership, highlighted below, serve a purpose in student achievement, the most noted leadership approach in the evolving role of the principal is that of instructional leadership. Subsequently, in order to improve learning outcomes of the students who have been less-effectively served by traditional schooling, it is imperative to incorporate aspects of multiple leadership theories (Ishimaru & Galloway, 2014), the most relevant of which are briefly described next.

Instructional leadership. Instructional leadership centers on the quality and effectiveness of the instructional program (Urick & Bowers, 2014). The ability to meaningfully include students with disabilities in general education assumes the capacity to provide differentiated instruction, support social skill development, and design effective behavior management (Dev & Haynes, 2015; Day et al., 2016). Instructional leadership practices that include providing administrative support to teachers in areas of pedagogical practice have been found to have an impact on achievement results. Specifically, teachers need to feel supported in taking risks and trying new approaches (Finnigan, 2010). In support of students with disabilities and other diverse learners, all educators need to be committed to quality, universal, core instruction through best-practice instructional techniques (DeMatthews, 2014). Principals must be aware of and able to identify and support high-yield instructional strategies (Shen et al., 2012). Researchers have attempted to investigate instructional leadership practices, including how principals prioritize and allocate time, attention, and resources (Camburn, Huff,

Goldring, & May, 2010). Despite such attempts, more information is needed to accurately measure and fully understand the impact of principal leadership practices and the resulting impact on student learning. Camburn et al. suggested the use of a variety of research methods in order to increase common understanding of the most effective prioritization of principals' time in pursuit of improved student outcomes.

Regardless of how leadership practices are measured, research reviews have revealed that instructional leadership alone is insufficient in reducing the achievement gap (DiPaola et al., 2004; Leithwood et al., 2010). Upon consideration of gap closure as measured by test scores in an era of accountability, effective principals focus on test results, but simultaneously attend to the bigger picture of the purpose of education beyond data and test scores (Day et al., 2016). The bigger picture of purpose recognizes the importance of acceptance and inclusion in a social-constructionist perspective of disability and creates environments that welcome students with diverse learning needs as meaningful members of the classroom and school (Kirby, 2017).

Distributed leadership. To truly create a welcoming environment within a school, principals cannot be the only leader in the school (Leithwood et al., 2010). Distributed leadership disperses leadership responsibility to others and not just the principal (Urick & Bowers, 2014). Models of shared leadership have been found to support efficacy of special education services (DeMatthews, 2015, p. 1030). Within a distributed leadership model, the principal ensures that all educators have the capacity to contribute to serving all students and that teachers are involved in leadership responsibilities and have shared ownership for decisions and outcomes (DeMatthews, 2014). In a distributed model of leadership, principals establish the vision, build

collaborative structures, rely upon data-based decision making, and engage staff in participatory decision-making (Coviello, & DeMatthews, 2016; Day et al., 2016; Hoppey & McLeskey, 2013).

Transformational leadership. Transformational leadership extends beyond instructional practice to leverage school challenges as opportunities for change and improvement (Lowrey, 2014). Transformational leaders question the status quo and confront the perpetuation of inequity, creating a sense of urgency for change (Ishimaru & Galloway, 2014). In transformational leadership models, principals establish a vision and create the culture that supports improving the organization over advancement of oneself (Urick & Bowers, 2014). Included in this improvement is the ability to recognize and confront one's own complicity in the currently oppressive nature of the existing system (Frattura & Topinka, 2006; Ishimaru & Galloway). Transformational leadership has been shown to have a positive correlation with increasing years of experience as a principal as well as higher organizational performance (Cohen, 2015; Day et al., 2016). Specifically, Cohen found that more experienced principals were rated by teachers as more effective leaders (p. 763). Day et al. reported that successful school leaders use instructional leadership focused on improving student learning but maximize that impact by relying on transformational leadership to improve the vision, culture, and organizational structures to support learning.

Given the complexities of leading instruction in an era of increasing accountability, legal mandates, coupled with the simultaneous increase in diverse student needs, it stands to reason that a principal would need to be familiar with various leadership practices and use appropriate leadership techniques according to the unique

characteristics of any given situation in which a decision is made (Urick & Bowers, 2014). Regardless of which leadership style principals employ, what is clear is that principal leadership has an impact upon the achievement of students with disabilities. An examination of the research on the nature and underlying factors of principal leadership decisions' impact on students with disabilities is warranted.

Impact of Principals' Mindset on Students with Disabilities

The principal is not only the vision-setter for the school (Hitt & Tucker, 2016), but also the primary designer of the supports and structures that organize the delivery of instruction within a school setting (Christensen et al., 2013; Cartledge & Kourea, 2008; Mendels, 2012; Schaaf et al., 2015). Principal impact on student achievement is indirect through the influence on teacher motivation, building of trust, reflection on practices, and a willingness to learn from risks and failure (Kearney, Kelsey, & Herrington, 2013; Leithwood & Jantzi, 2008). Leaders striving for effective inclusive schools must have strong core values, be willing to redesign school structures, and be committed to working tenaciously (McLeskey et al., 2014; Mendels, 2012).

Administrators need to be willing to hold themselves accountable for implementation of equitable instructional practices (Frattura & Topinka, 2006; Ishimaru & Galloway, 2014). They must also recognize the influence of both external and internal factors on leadership practices. Educators must reflect on how their attitudes and beliefs influence their own interpretation of external influences on special education service delivery to address the complex challenges stagnating the performance of students with disabilities (Fedigan, 2018; Ishimaru & Galloway, 2014).

Philosophy and language. Internal attitudes are expressed through priorities and verbalized descriptions (Harry & Klinger, 2007). Priorities become visible through the descriptions of students and expectations in conversations, as well as in the organization and timing of school structures such as schedules, class sectioning processes, and allocation of resources: mostly staffing resources. Although inclusive practices for students with disabilities are impacted by the overall size of the district, the philosophy of the district and the language of the leaders impact the approach to services. Marks, Kurth, and Bartz (2014) found some common differences among descriptions of the continuum of special education services in districts of various sizes. Directors and building principals, in more inclusive districts, described students as starting in general education and moving up the continuum or as starting more restrictive and moving down the continuum toward general education (Marks et al., p. 80). Marks et al. concluded that the language used by those in the school community to describe the special education process influenced the overall culture regarding perceptions of students with disabilities. Also worth noting from the Marks and colleagues' study is the impact of the variability in the definitions describing inclusion. The schools in the study interpreted the same legal requirement for "inclusion" differently (p. 76). This difference impacted the approach to services and expected outcomes for students with disabilities. In particular, districts that focused on individual students, and, where leaders described services in terms of labeled programs, were found to be more segregated than districts where descriptions were focused more on how services could be delivered in the general education setting. The latter were found to be more inclusive (Marks et al.). Marks et al. asserted that the

biggest barriers to being more inclusive are hiring staff with different philosophies and changing the mindset of the educators and then providing necessary support and training.

Internal influences. Previous researchers have demonstrated that student achievement is improved when positive relationships exist between staff and students (Collie, Martin, Papworth, & Ginns, 2016). School leaders are pivotal in creating a sense of belonging and setting the culture of the building (Fedigan, 2018). Mental attitudes tend to manifest in habits or behaviors that are demonstrated consistently over time (Searby, 2014). As such, it is necessary to examine the beliefs, perceptions, dispositions, and attitudes of the leaders relative to students with disabilities and inclusive educational practices (Pazey & Cole, 2012). Researchers have also demonstrated that the principal's identity of self as a leader changes over time and in response to career demands (Robertson, 2017). Understanding how these types of influences develop and evolve over time, and the impact these internal factors have on decision-making is vital to understanding the impact of principal leadership. Research on internal beliefs and mindset of principals is lacking (Searby, 2014). Therefore, it is important to consider what research findings have demonstrated, so far, relative to principal beliefs, efficacy, adaptability, and mindset, and the impact of each of these various internal factors on gap closure and leadership decision-making relative to students with disabilities. Fedigan (2018) researched attitudes, beliefs, and practices of principals and determined that the difference in performance outcomes for students with disabilities could be explained by the internal characteristics of building leaders. The internal characteristics examined by Fedigan (2018) included values, beliefs, traits, self-concept, and motives in a transformative leadership model. Specifically, while these characteristics are often

overlooked and are harder to observe and measure, these traits must not be static or fixed. The more they are viewed as "malleable," the stronger the leadership impact (Fedigan, 2018, p. 52).

Beliefs. Research investigating the training, content knowledge, and instructional skill-set, has been lacking in the area of beliefs (Christensen et al., 2013). Instructional practices are shaped by the values and beliefs of the educators delivering services (Arduin, 2015; Robinson, 2016; Sumbera et al., 2014). Principal beliefs regarding inclusive practices such as collaboration, shared ownership for learning, principal support, and an inclusive vision, impact the logistical implementation of the structures and supports that are necessary for service delivery (Irvine, Lupart, Loreman, & McGhie-Richmond, 2010). In the existing system of educational service delivery, students who do not conform to the norm are at risk for lower performance. Educators need to be aware of their own personal beliefs and attitudes about students who are different than the norm and hold high expectations for such learners (Cartledge & Kourea, 2008). If educators fail to change their beliefs, classroom practices will not change (Hintz, 2017). Differing values relative to including students with disabilities interfere with the implementation of a cohesive system of instructional supports.

Efficacy. Self-efficacy refers to the confidence that one can be successful at a task based on competency and the ability to cope (Hattie & Yates, 2014). The critical role of teacher self-efficacy on student performance has been previously identified in research (Dev & Haynes, 2015; Marzano et al., 2005). Specifically, educators with higher efficacy show more confidence and higher motivation which leads to improved student performance (Lombardo-Graves, 2017). Furthermore, leadership efficacy has

also been linked to student learning through the design of organizational conditions and management of instructional programs (Leithwood & Jantzi, 2008). The impact of principals' efficacy on learning has been measured to be second only to teacher efficacy (Ham et al., 2015; Mendels, 2012). While principal sense of efficacy is required for transformational leadership, high measures of principal efficacy alone do not translate to high degrees of collective efficacy among staff (Lowery, 2014). Principals who rate high on efficacy must work to develop people within their organization and set a clear direction in order to impact the efficacy of others in the organization collectively. This finding implies that school improvement must be a collective effort and not just an isolated individual.

Adaptability. Adaptability refers to how an individual experiences and responds to change or novel situations and negotiate challenges. Given the increasing number and types of daily challenges faced by principals, leaders need to be adaptable to function effectively (O'Malley et al., 2015). Collie and Martin (2017) demonstrated that positive adaptability self- and teacher-ratings resulted in improvement on subject-specific achievement in student math performance. Translating the idea of adaptability into adult populations, how does adult-educator adaptability impact student performance? Principals need to engage in situational or context-specific leadership due to the complexities involved in designing organizational structures and instruction to improve the performance of students with disabilities (Ham et al., 2015; Irvine et al., 2010; Lowrey, 2014). Similar to mindset, principals high in adaptability may be more effective leaders if they view challenges as opportunities. By recognizing the value in learning from perceptual disagreements, principals who leverage this information increase

relational trust and build the capacity of others in their organization by modeling a growth orientation focused on improvement (Ham, Duyar, Gumus, 2015). Although adaptability resembles mindset, adaptability includes behaviors and emotions in response to how barriers or challenges are perceived (Collie & Martin, 2017).

Mindset. Mindset represents implicit beliefs regarding ability (Gutshall, 2013). Fixed mindset views characterize intelligence as innate and static, while growth-minded orientations view intelligence as more malleable and able to be changed through effort, persistence, and learning from mistakes. Dweck's (2006, 2007) descriptions of mindset took the idea of belief about ability one step further by stressing that these beliefs center on how enduring or stable these perceptions are, and how they can differ from construct to construct, even within one individual (Dweck, 2006, 2007). Generally stated, the concept of mindset represents a continuum between two opposite perspectives, both of which influence learning. On one end of the spectrum is a fixed mindset orientation and on the other end is a growth mindset. Fixed mindset approaches are static, view struggle or effort as an indication of lacking ability and are often manifested as frustration by challenges or failure. To the contrary, a growth mindset orientation views ability as malleable, accepts challenges as an opportunity, learns from failure, and demonstrates persistence and effort when faced with struggle (Dweck, 2010; Gutshall, 2013; Renwick, 2016).

Despite the impact of mindset on student achievement established in the literature, Dweck (2010) acknowledged assessing such beliefs and the resulting impact on learning is more challenging. Much of the research on mindset has been focused on students' mindset orientation about their own abilities and less on the impact of educators' beliefs

about students. However, it is clear that students and their performance are susceptible to behaviors and implicit messages that indirectly relay this value-based perception about them as learners (Dweck, 2010). Aside from impact on achievement, mindset orientation can lead to stereotype-driven categorization, or judgements, inappropriately assigned ownership for student learning (on student, or on educator), as well as influence pedagogical practice (Gutshall, 2013). As a result, the potentially aversive consequences of a fixed mindset regarding struggling learners are worthy of additional investigation.

Although mindset has been researched, the widespread, practical application of mindset orientation has not taken hold in educational practice (Renwick, 2016). Renwick (2016) speculated that actions impacting educational and instructional leadership have not resulted from the discourse about these internal beliefs. In order to implement actions aligned with knowledge about the impact of mindset, educational leaders need to possess several leadership characteristics that facilitate the paradigm shift toward a growth orientation. First, leaders foster conditions that are student- and improvement-focused. Second, leaders allow for time and structures required for collaboration and the development of shared goals. Next, leaders provide clarity on alignment of actions. Then, principals ensure that constructive, descriptive, and student-centered feedback is expected and accepted. Finally, learning by all (students and staff) is relevant, authentic, and collaborative over competitive. Ultimately, the role of the principal as the leader is to enact these elements and model the "living of our beliefs" (Renwick, 2016, p. 6).

According to Brooks and Goldstein (2008), positive mindset among educators included: an understanding of teachers' long-term impact upon students, belief that all students want to be successful, empathy for the experience of the whole-child,

understanding that success comes from a sense of ownership of learning, and how fear of mistakes inhibits learning. Research on the role of mindset relative to gap closure for students with disabilities is limited and has produced mixed findings. When disability is viewed by educators as a fixed characteristic, the impact of this label is negatively related to student achievement (Fuchs et al., 2010). Brooks and Goldstein (2008), Dev and Haynes (2015), Hitt and Tucker (2016), and Kearney et al., (2013) asserted that educator mindset influences behavior, instructional actions, and expectations for student learners. As a result, it is imperative for educators to have a strength-based approach to education as opposed to a deficit-based approach.

Other research has resulted in-less compelling results regarding the impact of mindset. Beziat, Bynum, and Klash (2017), in investigating principal experience, metacognition, and mindset influences determined that leaders generally believe that people can learn and grow, but research is most often focused on adult learners as opposed to students when considering the impact of mindset. Beziat et al. reported that awareness of the impact of mindset about student learning is a form of metacognitive awareness that is often overlooked in schools and training programs. Although, the influence of metacognitive thinking is lacking in schools, it is able to be developed through formal and informal professional development (p. 24). While these authors found that more experienced principals demonstrated significantly higher metacognitive strategies for planning and declarative knowledge, there was no significant difference between aspiring and practicing leaders on the measure of mindset. Most leaders were assessed to have a growth-mindset orientation.

Although research has been conducted on principals as individual/heroic leaders, principal leadership styles, and on principal beliefs about inclusion, few studies examined how beliefs or attitudes toward inclusion of students with disabilities influence leadership decisions or practice. Additional research in this area could potentially yield results for improved gap closure (Cohen, 2015; Ishimaru & Galloway, 2014; Mendels, 2012). More research is needed on the impact of how mindset orientation impacts pedagogical practice within the structural design of inclusive education (Dukes & Lamar Dukes, 2009; Gutshall, 2013). Fedigan (2018) also suggested that additional research be conducted on leadership mindsets to clarify how to better support students with disabilities in closing the achievement gap. Given the significant influence of the principal's leadership practice in this capacity, examination of internal influences of principal leadership, including mindset orientation, ability to learn, and gap closure for students with disabilities is warranted, and, perhaps, the missing component to the complicated process of transforming performance results for students with disabilities. Future research needs to gain a better understanding of why and how principals make the decisions they do and take the strategic actions they take when tasked with closing the gaps for students with disabilities (DiPaola et al., 2004).

Theoretical Framework

In order to situate the current research into the larger field of existing literature, and to provide an attempt at explaining how principal mindset orientation about students with disabilities impact leadership practices, two overarching theories were considered. These theories included Dweck's Mindset Theory (1999, 2016) and the Iceberg Model of Competency as used in Fedigan's (2018) research. Each of these theories are described

below. The overall intent is to illustrate the rationale for using these two concepts to explain how today's public-school principals exercise leadership practices by relying on the knowledge and skills attained in preparation and function as a public-school principal. Because researchers such as Beziat et al. (2017) reported that mindset of leaders did not impact student performance, this investigation extends the theoretical framework beyond mindset in isolation to examine more closely the relationship between mindset and enacted behaviors, defined as leadership competencies. Of specific interest in the current investigation is how principal knowledge and skill are influenced by the internal characteristic of mindset in the era of educational accountability for students with disabilities.

Mindset Theory

Dweck (1999, 2006) developed Mindset Theory as an attributional theory describing individual perceptions of intelligence as oriented toward either a fixed/entity or growth/incremental perspective. Dweck and Molden (2017) asserted the importance of understanding mindset because there are practical consequences resulting from the mindset adopted. As an example relevant to this research, Dweck and Molden (2017) described how a fixed-mindset approach tends to lead to increased-performance measurement tendencies. They reported that the more performance is measured, the more learning outcomes may be hindered as a result (p. 137). Additionally, student engagement, goal-setting, and beliefs about academic efforts are impacted by mindset orientation. The importance of mindset orientation for principals stems from the fact that mindset impacts motivation and beliefs about competence, especially when presented with challenges (Dweck & Molden, 2017, p. 135). The impact of a principal's mindset

orientation relative to students with disabilities will inevitably influence the attitudes of staff delivering specialized instructional services. Another potential area of impact will be the design of organizational supports and structures and how resources are allocated to support the learning of students with disabilities. The allocation of resources can be used to illustrate how mindset orientation impacts leadership decisions. If the leader's mindset inspires a fixed-view of equity, where everyone has the same uniform and fair access, then resources are not likely to be distributed to produce maximal improvement for underperforming students. To the contrary, principals that perceive equity from a growth perspective may be more likely to allocate more intensive resources to needier populations in order to design systemic supports to improve performance (Ishimaru & Galloway, 2014).

Iceberg Competency Model

Competency as a concept was initially studied by David McClelland in 1973. Since then, competency has been proposed in research as being a better predictor of career success than content knowledge or skill (Vazirani, 2010, p. 121). Several researchers have studied models of competency related to job or task performance. Within that area of research, two distinct vocabulary terms have emerged from the research. The first term is competence, which is the more general term referring to the task being capable of completion. The second term that emerged is competencies. Competencies refer to the personal traits that influence work performance (Bozkurt, 2009). Competency models provide a theoretical framework in evaluating and aligning professional expectations with individuals within the position (Vazirani, 2010, p. 125). Investigating how individual principals perceive the competencies needed to adapt to the

ever-changing expectations, provides insight into better understanding effective leadership.

A simple model to explain how competencies impact performance is the iceberg model (Spencer, 1997, p. 8). Visible at the top of the iceberg are the knowledge (information) and skills (behaviors) (Vazirani, p. 124), which equate to many of the skills identified in the PSEL (2015) and NELP (2018) standards for principals. These skills are often more evident and tend to be easier to assess, train, and develop among principals. Knowledge and skills are the most evident and recognized indicators of competency but are insufficient in characterizing competency when used alone to explain performance (Bozkurt, 2009).

Under these elements are characteristics that consist of personal traits including attitudes, dispositions, and thoughts (Vazirani, 2010). It is these underlying characteristics that, although hard to measure and observe, are more enduring drivers of behaviors (Bozkurt, 2009; Vazirani, 2010). In an era of rapidly changing and increasing demands of the principal's role, the personal competencies underlying content knowledge and skill may be more important considerations for adapting to changing expectations.

Advantages of using a competency model to provide context to this research include the following, adapted from those outlined by Vazirani (2010, p. 127). The iceberg competency model:

- Recognizes those underlying characteristics that expand the role of an effective leader beyond knowledge and management skill;
- Clearly outlines standardized expectations and structure within the role of principal;

- Identifies the areas in most urgent need of further development or training;
- Contributes to the development of a consistent culture within the organization (building or district); and
- Assists in evaluating effective performance

Within the field of competence, it is suggested that when an individual's competencies are aligned with an organization's objectives, the likelihood of success is increased (Bozkurt, 2009). Relative to students with disabilities, if front-line educational leaders have the necessary skills and knowledge which are influenced by the most effective personal traits, perhaps, then, the complex task of leading for improved learning and lifetime outcomes will be realized. The visible portion of the iceberg represents the skills and knowledge principals are expected to have. This is connected to the content knowledge received in training and through experience. These are often articulated in professional standards and in required course and licensure requirements. However, what is often overlooked are the below the surface characteristics, including self-concept, adaptability, efficacy, and motive, including mindset orientation. Although the hidden elements are often harder to change, they are the most pervasive in influencing actions and decision-making (Bozkurt, 2009).

Research Intent

Given the current lack of definitive research on how principals' internal characteristics influence leadership practices related to students with disabilities, combined with the complexity of the task of increasing the performance and outcomes for students with disabilities within a system of multifaceted demands and resources, it is imperative to better understand the impact of the principal's leadership practices in

realizing these expectations. Ishimaru and Galloway (2014) asserted that actions and behaviors are reflective of the cognitive views of the decision maker(s). Otherwise stated, the knowledge and skills provided in training and licensure programs interact with the internal characteristics of educational leaders to translate the political, legal, cultural, and social demands into daily structures and practices for students with disabilities. In order to more precisely understand how to best support and leverage principal leadership for improved outcomes for students with disabilities, examination of the often overlooked below-the-surface, internal characteristics that influence leadership and application of knowledge and skills would be beneficial. Therefore, the intent of this research is to investigate Ohio public school principals' internal influences, specifically mindset perceptions, of students with disabilities relative to leadership decision-making.

Chapter 3

Methodology

The purpose of the current investigation was to examine the relationship between principal mindset orientation and leadership practices related to the ability of students with disabilities to learn and achieve at high levels. Because principal mindsets are internal beliefs along a continuum that differ based on circumstances, the term mindset orientation is used. Q methodology was used to capture such perspectives through the operant behavior of the Q-sort activity. This section provides an historical overview and description of Q methodology and the rationale for using Q methodology. Finally, a description of the procedures that were used to conduct this investigation is provided.

History of Q methodology

Q methodology was first introduced by Stephenson in 1935 (Watts & Stenner, 2012). Stephenson (1935) initially worked under Charles Spearman (1904) who developed factor analysis research to study associations between variables across different measured traits. Stephenson (1935) argued that factor analysis was limited in that it did not allow for examination of individual differences within participants (Watts & Stenner, 2012). Thus, he developed an inverted factor analysis methodology for analyzing subjective feelings and perspectives in a quantifiable manner. Brown (1980) described subjectivity as "an individual's point of view" (p. 46). However, subjectivity impacts the immediate environment. A Q-sort allows researchers to transform the expression of subjectivity into an operant behavior to be studied (Watts & Stenner, 2012).

As such, Q methodology has become "a social constructionist tool" (Watts & Stenner, 2012, p. 25).

Description of Q methodology

Traditional factor analytic designs, also referred to as R methodology, examine relationships or patterns of association among several variables of interest using intercorrelations among a series of variables, presented in a matrix format (Watts & Stenner, 2012). Variables are, typically, measuring traits or scores with differing units of measurement. In order to compare scores using different units of measurement, it is necessary to standardize all scores by calculating the distance of a measured score from the average scores of the sample. Q methodology is a mixed-methods approach that also relies upon standardization but inverts the factor analysis to examine associations within individual participant responses. This adaptation of Spearman's (1904) model essentially converts the participants into the variables of study. Participants, within this methodology, are required, in an activity called a Q-sort, to prioritize provided statements in rank order (Watts & Stenner, 2012).

Q methodology can be conducted in two ways: (a) using one participant to complete multiple sorts, or, (b) multiple participants completing the sorting activity using multiple statement cards that are provided by the researcher on the topic of interest (Watts & Stenner, 2012). To ensure the range of comprehensive and representative perspectives is obtained, it is essential that the statements provided on the cards used in the Q-sort activity are simple, unambiguous, and represent singular or unidimensional perspectives. Participants then sort the provided statement cards into a forced distribution along a continuum of strongly agree or most important to strongly disagree or

least important (Watts & Stenner, 2012). This forced-sorting process provides a subjective demonstration, based upon psychological relevance to the individuals, yielding a collective big picture of the topic under study. The use of a common distribution pattern for the sorting activity provides a standardized process for data gathering.

Rationale for Use of Q methodology

Q methodology was used in this investigation for two primary reasons. The first reason was because the intent of this research was to gain a better understanding of the mindset and perspectives of principals as instructional leaders for students with disabilities in the current era of increased accountability. Specifically, this investigation was designed to understand the perspective of principals on the topic of serving students with disabilities. Q methodology is intended as a method to better examine the world from the "internal standpoint of the individual being studied" (Brown, 1980, p. 1). Mindset orientations are subjective because they represent internal beliefs. Q methodology was designed as a research tool to identify a "series of shared viewpoints or perspectives pertaining to your topic of interest" (Watts & Stenner, p. 52).

The second reason for selection of Q methodology was because this method does not require a significant sample size to identify associations and patterns. As a research endeavor, Q methodology is more concerned with "quality rather than quantity" (Brown, 1993, p. 94). Given this study's intention of capturing principal perspectives to contribute the literature base in this area, Q-sort methodology allowed analysis of mindset perceptions with a small, manageable number of participants.

Participants

Initially, participants included in this research were current public-school principals in the state of Ohio. These participants were invited to participate in an electronic survey consisting of Likert and open-ended response items. In addition to information obtained from an extensive literature review, the responses collected were used to create the concourse used in the actual Q-sort process. In Q methodology, a concourse is a comprehensive set of representative statements on a given topic (Watts & Stenner, 2012, p. 34).

Principals were recruited for initial survey completion through an email communication inviting their participation in the survey. Email addresses were obtained through the online ODE's Ohio Educational Directory System ([OEDS], 2018). Search criteria of open status, public school organization type were used to limit results to select the participant group of current public-school principals. Of the resulting 3,204 public school records, 180 of the listings did not provide an email address for the school principal. As such, the email invitation was sent to the remaining 3,024 principals. Responses were received from 69 of the 3,024 principals, resulting in 69 completed electronic surveys used to inform concourse development. While this low participation rate is likely not representative of all Ohio public school principals, the responses to the open-ended questions provided enough statements for concourse development when combined with information from the literature review. Of the 69 respondents, 27 indicated an elective interest in further participation in the research study.

Once the concourse was developed from results of the initial survey, a smaller number of principals were invited to participate in the Q-sort activity and subsequent

interview. All participants in this portion of the study were principals in public schools in Ohio. All were currently employed in a position of leadership as a principal and held valid and appropriate licensure to do so by the ODE. The researcher anticipated that participants represented a range of grade levels from primary/elementary through high school as well as various school district typologies (urban, suburban, rural) and sizes as measured by Average Daily Membership enrollment. Demographic data, including years in current position, previous work experience, experience, and training in special education were also collected to gain more insight into the characteristics of principals leading schools with higher-than-state average gap-closure scores. Details summarizing principal experience and most recent data related to Gap Closure and Special Education Ratings is provided in Table B1, located in Appendix B.

Purposive sampling was used to invite principals to participate in the Q-sort portion of this research study by completing the Q-sort activity and participating in a subsequent interview. Participants included a mix of initial respondents who expressed willingness to do so in the concourse development survey and principals from select typology districts. Specifically, invitations were electronically sent to principals of buildings whose ODE's local district report card's Gap Closure scores for Students with Disabilities represented divergent scores, both above and below average.

Development of the Concourse

The sorting of statements on the topic of interest is essential to Q methodology. The process of finding and including representative statements to be used in the research process is referred to as developing the concourse (Watts & Stenner, 2012). Researchers develop a concourse by identifying important, diverse statements collected during the

process of reviewing previous literature in the field, conducting interviews, or by using existing surveys or assessment items. Q methodology necessitates that the statements used in the Q-sort are comprehensive and sufficient-enough in number to be representative of a wide range of opinions and perspectives on the topic of interest. The selected statements must also represent a continuum along a single dimension (Watts & Stenner, 2012).

In addition to eight demographic questions, the concourse-development survey used in this research included 14 items adapted from Dweck's (2016) Mindset Instrument (DMI) and 23 items from the Diversity, Differentiated Instruction, and Development Survey (DIDDS) as used in research by Irvine et al. (2010). The reliability of DMI has been reported to be high with alphas ranging between .713 and .98 (Froedge, 2017, p. 50; Gutshall, 2013, p.1077). Adaptations to the DMI items were made. The primary change was in wording of items from perceptions of self-report to perceptions of students with disabilities' intelligence and talent levels because this research was focused specifically on understanding mindset orientations of Ohio's public-school principals about students with disabilities.

Items from the DIDDS were included because they had been used in previous research by Irvine et al. (2010) to assess principal perspectives of inclusion and they were representative of instructional leadership practices. Irvine et al. determined that the factors included in this survey had an overall internal validity of Chronbach's alpha 0.89 with the reliability ratings for each of the seven factors ranging from .71 to .89 (Irvine et al., p. 77). Items from the following factors were used to obtain an initial sense of the participating principals' perspectives regarding inclusion of students with disabilities:

- Principal ownership and responsibility for creating an inclusive environment (Factor 1);
- Collaboration among staff (Factor 2);
- Resource availability (Factor 4);
- Administrator philosophy of learning (Factor 5);
- Training and professional development perceptions (Factor 6); and
- Administrator perceptions of school climate (Factor 8)

Additionally, five questions, including one adapted from the research of Kearney and colleagues (2013) on principal mindfulness were included to elicit open-ended responses and individual commentary from participants. In total, the 50-item survey required an estimated 13 minutes to complete. A copy of the initial survey is provided in Appendix A.

Instrumentation

The survey was prepared using Survey Monkey, an electronic, easily accessible, web-based survey creation and collection tool. Following approval from Youngstown State University's (YSU) Institutional Review Board (IRB), a link to the electronic survey was sent to public school principals in the state of Ohio. Included in the email was a brief introduction of the researcher, a statement of intended purpose of the research, an assurances regarding anonymity, voluntary participation, protection of confidentiality, and an indication that no anticipated harm would result to respondents from participation in this research.

Q Sample Development

Responses from the initial survey were reviewed and coded to identify emergent themes. The themes that emerged from the responses were then compared with mindset and leadership factors demonstrated in the review of existing research (Camburn et al., 2010; Hanson, Bangert, & Ruff, 2016; Gutshall, 2013) to ensure alignment as well as comprehensive and representative coverage of the unidimensional construct of school leadership mindset. Respondent statements were aligned with the three main factors that underlie a growth mindset for schools as identified by Hanson et al. (p. 254). These factors are Collaborative Planning, Shared Leadership, and Open Communication and Support. The reliabilities for all three of these factors ranged from .72 to .88 with the overall reliability rating of .92 (Hanson et al., 2016, p. 251).

The resulting 34 statements were organized into positive, negative, and neutral categories are presented below.

Positive

1. I communicate a sincere belief that staff members can develop teaching skills.
2. I provide teachers with professional development that is targeted to their professional needs and goals.
3. Staff in this school work together to design plans for teacher development.
4. Instructional expectations are made clear to teachers in advance.
5. Teachers are provided with clear feedback on their practice outside of formal evaluations.
6. Time is provided in the workday for co-planning.

7. Systems are in place where teachers are directly involved in decision-making for site initiatives.
8. All staff members are invited to participate in leadership opportunities throughout the school day.
9. Communication about decision-making is provided to teachers.
10. Staff are able to put ideas "on the table" and "take them off" safely during collaborative planning meetings.
11. Teachers are invited to give critical feedback about our administrative practices.
12. Staff truly believe that they can help all students meet learning goals.
13. Teachers collaborate several times a month on instructional topics, such as sharing or co-developing lessons, assessments, and student work.
14. Teachers observe one another and give each other feedback to develop the team's best practices.

Negative

1. Accountability for learning is demonstrated by measuring student learning with standardized assessments.
2. Intelligence is something about students that school staff cannot change very much.
3. Equitable division of responsibility for preparing and modifying instructional materials.
4. There is an "us against them feeling" between general and special education in my building.

5. Teachers tend to protect or guard resources (including staff, lessons, strategies, tests, etc.) from one another
6. Staff members are reluctant to work with struggling students.
7. We have exclusive cliques or camps within our facility.
8. Providing the necessary differentiated supports for students is a challenge in my school.
9. Operational barriers such as master schedule, lack of time or limited staffing prevent staff in my school from supporting students.
10. Staff resistance prevents us from effectively supporting students.
11. Fairness/balancing the needs of individual students with disabilities with the education and rights of all the other students are a challenge.
12. Students with disruptive behaviors regularly cause significant issues.
13. In my school, students with disabilities are better served in smaller group settings with a slower pace of instruction.
14. Maintaining an appropriate continuum of services for students with disabilities is impractical within my building.

Neutral

1. Monitoring public spaces, such as the cafeteria, hallways, playgrounds, etc. is an important use of my time.
2. Dealing with emergencies and other unplanned circumstances is an important use of my time.
3. Working with students and their parents on discipline or attendance issues is an important use of my time.

4. Completing routine paperwork (such as reports and record keeping) is an important use of my time.
5. Examination of standardized test results of students from a teacher's class is an important use of my time.
6. Troubleshooting the implementation of school improvement efforts is an important use of my time.

Data Collection

The Q set, consisting of 34 representative statements obtained from the concourse and review of literature were printed on cards. Participants were presented with the Q set and distribution diagram and were then asked to sort the cards into three piles representing positive, negative, and neutral statements' piles. Following that first step, the participant was then asked to arrange the 34 statements using the diagram in response to the question, "*As a principal in the current era of accountability for improving outcomes of all students, please consider the following leadership practices within your school and indicate how important you believe each to be to in supporting the achievement of students with disabilities."* Participants responded by sorting the card statements according to degree of agreement or personal salience (from most important to least important) using a standardized distribution diagram. Additional data regarding participant perspective were captured by recording conversations or thoughts spoken aloud while completing the Q-sorting process and in the subsequent interview.

At least two facilitators trained on the Q-sort process were used to ensure objective facilitation and consistent "conditions of instruction" (Watts & Stenner, 2012, p. 59). Presentation of the materials and explanations of the task were standardized and

scripted for researcher administration. By using trained facilitators, research bias was minimized. Audio files of each Q-sort and follow-up interview were recorded using a recording application on the researcher's cell phone. Each audio file was later transcribed and reviewed for emergent themes and salient quotes that provided evidence facilitating interpretation of the quantitative analysis. Review of the transcripts also provided data validation and accuracy of interpretation by cross checking the primary researcher's understanding with the understanding obtained from a novel reader unfamiliar with the literature or quantitative data. Because Q methodology as a research approach is focused more on interpretation of personal viewpoints and less on generalization to the larger population, validity is less of a relevant concern than in other research methods (Watts & Stenner, 2012).

PQMethod software (Schmolck, 2014) was used to conduct an inverted factor analysis on the results of the Q-sort processes.

Research Questions

This investigation sought to understand principal mindset orientations as they are associated with leadership practices impacting gap closure for students with disabilities. Specifically, this researcher sought to gain a better understanding of the following research questions:

1. Relative to students with disabilities, what mindset orientations do principals hold?
2. What influence does mindset orientation have on leadership practices?
3. What effect do leadership practices/decisions have on gap closure for students with disabilities?

4. What principal beliefs related to mindset are associated with improved gap closure for students with disabilities?

Summary

The intended purpose of this study was to examine principal mindset orientations about students with disabilities. Specifically of interest was the association, if any, between principal mindset orientation and leadership practices that result in gap closure for students with disabilities. Because mindset orientations are an internal perspective, Q methodology was appropriate to transform internal opinions into quantifiable operant behaviors that could be measured through the use of a Q-sort activity. Ohio public school principals representing various grade levels and school typologies were included in the sample. Following development of the concourse, selected principals completed the Q-sort activity and participated in a subsequent interview. Q-sort findings were examined using the PQMethod software program.

It is anticipated that this research will contribute to a better understanding of the impact of principal leadership and responsibility in the current era of accountability for increasing the learning and achievement of students with disabilities. Improved understanding of this influence can further contribute to refinement of standards for principal training and preparation programs, actualization of leadership standards for practice, and increased principal confidence and efficacy in leadership for students with disabilities in Ohio's public schools.

Chapter 4

Data Analysis

The intended purpose of this research was to investigate Ohio public school principal mindset orientations about students with disabilities and leadership practices. This chapter discusses the data analysis process and results from Q-sorts completed by 20 participants. Data analysis was completed using PQMethod 2.35 software (Schmolck, 2014). PQMethod is a statistical package that was designed for use with Q methodological studies. Each participant was assigned a code which was then used to represent each participant during data entry. Each of the 34 Q-sort statements was assigned a number and those numbers were entered into the program to rebuild the pattern of responses for each participant's Q-sort. The resulting output from the PQMethod analysis provided an overall correlation matrix, a defining factor matrix, tables of factor scores with corresponding ranks for each of three identified factors, and distinguishing and non-distinguishing statements that did not contribute to any identified factors. The overall interpretation of results was reliant upon quantitative analysis which was also supported through qualitative analysis using transcriptions of each audio-recorded Q-sort.

Q-sort methodology is a constructionist approach to data analysis in that it conducts a by-person factor analysis that compares the sort patterns among all participants. Each participant ranks the sample (N) of 34 statements according to personal value or significance. The pattern of the forced sorts reveals the relationships among the placement of differentially valued statements (Watts & Stenner 2005, p. 69). Initial data analysis results in a correlation matrix that explains the relationship, or similarity, of each

sort with all other sorts (Watts & Stenner, 2012). Potential correlation values range from -1.00 suggesting different values to +1.00 suggesting similar relationships. Correlation values of 0 suggest no relationship between sorts. To determine if values presented in the correlation matrix were more significant than the expected standard error level at the .01 level, the calculation $SE = [1/\sqrt{N}](2.58)$ as outlined by McKeown and Thomas (2013; p. 53) was used to determine that values of ±.44 (in bold print) indicated significantly similar sorts. Figure 1 contains the correlation matrix.

Sorts	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A1FEAA	-	**0.58**	**0.85**	**0.75**	**0.47**	**0.76**	**0.5**	**0.73**	**0.64**	0.41	**0.56**	0.23	0.16	0.26	**0.64**	**0.56**	**0.46**	**0.54**	**0.62**	**0.58**
B2FECA		-	**0.54**	**0.63**	**0.59**	**0.52**	**0.6**	**0.61**	0.31	**0.56**	0.43	0.34	0.21	0.36	0.36	**0.49**	0.43	0.32	**0.48**	**0.54**
C5FECA			-	**0.71**	**0.54**	**0.73**	**0.49**	**0.67**	**0.67**	**0.44**	**0.52**	0.26	0.27	0.29	**0.68**	**0.64**	**0.48**	**0.56**	**0.62**	**0.52**
D6FEAA				-	**0.49**	**0.75**	**0.7**	**0.65**	**0.59**	**0.5**	**0.51**	0.34	0.28	**0.47**	**0.66**	**0.71**	**0.5**	**0.52**	**0.65**	**0.47**
E6MEAA					-	**0.47**	**0.59**	**0.45**	0.25	**0.69**	0.43	0.4	**0.59**	0.24	**0.49**	**0.49**	**0.45**	0.43	**0.58**	0.27
F7FENF						-	**0.57**	**0.67**	**0.53**	0.32	**0.67**	**0.47**	0.2	0.3	**0.58**	**0.69**	0.42	**0.55**	**0.66**	0.41
G3MMAB							-	**0.46**	0.28	**0.66**	**0.46**	0.24	0.36	**0.47**	0.41	**0.63**	**0.61**	0.43	**0.55**	0.23
H4FMAA								-	**0.57**	0.37	**0.56**	**0.5**	0.04	0.27	**0.49**	**0.48**	0.3	**0.44**	**0.52**	**0.62**
I5MMAA									-	0.11	0.33	0.1	0.03	0.33	**0.52**	0.39	0.37	**0.49**	**0.45**	0.34
J6MMBA										-	0.35	0.34	**0.47**	0.33	0.38	0.37	0.35	0.42	0.39	0.29
K6FMAA											-	**0.62**	0.01	0.27	**0.64**	**0.55**	**0.45**	**0.61**	0.41	0.31
L7MMBB												-	0.02	0.16	**0.51**	0.26	-0.05	**0.46**	0.26	0.3
M8FMFF													-	0.25	0.26	0.24	0.27	0.31	**0.47**	-0.06
N2FHNC														-	**0.44**	0.29	0.19	0.26	0.41	0.35
O3FHCC															-	**0.44**	0.43	**0.65**	**0.57**	0.18
P5FHFB																-	0.43	0.43	**0.59**	0.18
Q6MHFB																	-	0.32	0.4	-0.04
R7MHFF																		-	0.38	0.23
SJMTC																			-	0.32
T4MHDB																				-

Figure 1. Correlations Between Sorts

As Figure 1 reveals, many of the sorts with values printed in bold demonstrated moderate to highly related sorts. Several of the values also indicated that some of the sorts are not similar (values <.44). To further examine the variability and to increase understanding of the results in relation to the research questions, the next step of data analysis was to examine extracted factor values. There are two methods for conducting

factor analysis in Q methodology. One method is Principal Component Analysis (PCA) which produces the "single mathematically best solution" (Watts & Stenner, 2012, p. 99). The other is the Centroid Factor method, which is generally preferred (Watts & Stenner, 2005; p. 80). Centroid analyses allow for more potential options to be considered until the data is examined further (Watts & Stenner, 2012, p. 99). According to Watts and Stenner (2005), Centroid Factor analysis allows for better "indeterminacy and openness," than PCA therefore being considered "more appropriate and theoretically informative" (p. 81). Eigenvalues of 1.00 or greater are considered acceptable and indicative of similarity within each factor. Eigenvalues of less than 1.00 suggest that the variance is less than what would be contributed by one Q-sort (Watts & Stenner, 2012, p. 106). Table 2 presents the resulting eigenvalues and variance explained by each potential factor.

Table 2.

Eigenvalues

Factors	1	2	3
Eigenvalues	9.3488	1.4334	0.9872
% expl.Var.	47	7	5

Three factors with values approaching or greater than 1.0 emerged from the Centroid analysis. The three factors account for 59% of the total variance in this research. These findings suggest that there were three distinct patterns among the Q-sorts that demonstrate similarly valued rankings of the Q sample. These three factors were accepted as the most parsimonious model with the greatest percentage of variance

explained. These factors were determined to be statistically significant but also to be substantively meaningful (McKeown & Thomas, 2013, pp.54-55).

Varimax Rotation

Factor rotation is a process that allows for "mapping the relative positions, or viewpoints, of all the Q-sorts in a study" (Watts & Stenner, 2012, p. 114). To reveal and analyze the different range of viewpoints, the rotation brings the factors closer to the viewpoints that defined one end of the spectrum or perspective being represented (Watts & Stenner, 2012, p. 119). The data analysis then employed a Varimax rotation. Varimax is an orthogonal rotation that allows for the recovery of a mathematically preferable solution from a substantive or theoretical point of view (Watts & Stenner, 2012, p. 99). Varimax rotation is based on statistical modeling that ensures each Q-sort is loaded onto only one factor thereby maximizing the variance explained by the sorts within that factor (Watts & Stenner, 2012, p. 125). Varimax rotations are often used when the intention of the study is to get to the dominant viewpoint represented by the Q-sort patterns within that factor (Watts & Stenner, 2012, p. 126). Table 3 reveals the Factor Matrix resulting from this analysis. The "X" indicates the factor for which each participant's Q-sort was most representative.

Table 3.

Factor Matrix with Defining Sorts

Factor	1	2	3
Sorts			
A1FEAA	**0.8352X**	0.2389	0.2584
B2FECA	**0.5167X**	0.4972	0.1385
C5FECA	**0.7473X**	0.3291	0.3045
D6FEAA	**0.7405X**	0.5011	0.1586
E6MEAA	0.2051	**0.7172X**	0.3808
F7FENF	**0.7103X**	0.3187	0.3304
G3MMAB	0.3999	**0.7923X**	0.0261
H4FMAA	**0.7420X**	0.1661	0.33
I5MMAA	**0.7094X**	0.0644	0.1213
J6MMBA	0.1521	**0.6905X**	0.2822
K6FMAA	0.4833	0.221	**0.5347X**
L7MMBB	0.1536	0.1026	**0.7272X**
M8FMFF	-0.086	**0.6620X**	0.0921
N2FHNC	0.2997	**0.3467X**	0.122
O3FHCC	0.4987	0.3113	0.5516
P5FHFB	**0.5338X**	0.4602	0.1517
Q6MHFB	0.3228	**0.4725X**	0.0765
R7MHFF	0.3457	0.2729	**0.6472X**
SJMTC	0.5123	0.518	0.1936
T4MHDB	**0.5510X**	0.0476	0.1921
% expl. Var.	28	20	12

Note. X represents significant factor loading

As Table 3 demonstrates, all but two of the 20 Q-sorts significantly loaded into one of the three factors. Each factor represents a similar pattern in viewpoints among the participants loading on that factor. In total, the three factors explain 60% of the variance

in this study. Two participants, O3FHCC and SJMTC, did not load onto any of the three factors indicating sorts that were distinctly different in value patterns than any of the other sorts.

Table 4 explains the factor loadings for each factor and the variability explained by each factor.

Table 4.

Factor Characteristics

	Factors		
	1	2	3
No. of Defining Variables	9	6	3
Average Rel. Coef.	0.80	0.80	0.80
Composite Reliability	0.973	0.96	0.923
SE of Factor *Z*-Scores	0.164	0.20	0.277

Factor 1 indicates nine participants, or sorts, shared a similar sorting pattern. Six participants shared similar sorting patterns as represented by Factor 2. Finally, three sorts shared a similar sort pattern identified by Factor 3. Perfect reliability is represented by 1.0. Composite reliability is the degree to which participants identify the same factor at one point in time (Brown, 1980, p. 290). As Table 4 shows, the average reliability coefficients of 0.8 and the composite reliabilities ranging from 0.923 to 0.973 are good and acceptable measures. Standard error as measured by factor *Z*-scores as reported are also acceptable.

To understand the greater picture of what each factor represents, and the pattern of similar sort responses, Table 5, Table 6, and Table 7 outline the agreement or

disagreement of the weighted average for each statement for Factors 1, 2, and 3, respectively. Positive *Z*-scores represent agreement with the statement while negative *Z*-scores indicate disagreement. Only those *Z*-scores approaching /1/ are reported.

Table 5.

Factor Scores >/1.00/ for Factor 1 (Empowering Principals)

Number	Statement	*Z*-score
3	Staff truly believe that they can help all students meet learning goals.	1.913
14	I communicate a sincere belief that staff members can develop teaching skills.	1.398
17	All staff members are invited to participate in leadership opportunities throughout the school day.	1.349
31	Teachers collaborate several times a month on instructional topics, such as sharing or co-developing lessons, assessments, and student work.	1.293
2	Instructional expectations are made clear to teachers in advance.	1.185
12	Systems are in place where teachers are directly involved in decision-making for site initiatives.	1.053
20	Staff are able to put ideas “on the table” and “take them off” safely during collaborative planning meetings.	1.025
32	Communication about decision-making is provided to teachers.	1.017
26	Time is provided in the workday for co-planning.	0.909
13	Intelligence is something about students that school staff cannot change very much.	-0.975
19	Staff resistance prevents us from effectively supporting students.	-1.336
23	There is an “us against them feeling” between general and special education in my building.	-1.446
11	Teachers tend to protect or guard resources (including staff, lessons, strategies, tests, etc.) from one another.	-1.461
10	Operational barriers such as master schedule, lack of time or limited staffing prevent staff in my school from supporting students.	-1.468
7	Maintaining an appropriate continuum of services for students with disabilities is impractical within my building.	-1.507

25	Staff members are reluctant to work with struggling students.	-1.628

Complete results for Factor 1 are included in Appendix C. The pattern of responding in Factor 1 loaded sorts reveal a strong sense of efficacy and empowerment for a participatory leadership approach. As such, the participants loading on Factor 1 are referred to as the Empowering Principals.

Based on the pattern of responses from participants in this factor, Figure 2 represents a perfectly loading Q-sort for the Empowering Principals (Watts & Stenner, 2012, p. 141). This figure does not represent any one participant's sort but the most likely representation of viewpoints of principals aligning with this factor based on the ranked values.

Strongly Disagree Strongly Agree

-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
7	23	27	30	4	22	12	17	3
25	11	16	21	33	29	20	31	14
	10	13	9	28	24	32	2	
		19	8	34	5	26		
			15	1	18			
				6				

Figure 2. Model Sort for Factor 1 (Empowering Principals)

Variance = 4.706; Stan. Dev. = 2.169

Table 6 provides the statements with the weighted factor scores of

near or greater than /1/ for Factor 2.

Table 6.

Factor Scores >/1.00/ for Factor 2 (Constrained Principals)

Number	Statement	*Z*-score
20	Staff are able to put ideas "on the table" and "take them off" safely during collaborative planning meetings.	1.524
31	Teachers collaborate several times a month on instructional topics, such as sharing or co-developing lessons, assessments, and student work.	1.484
27	Providing the necessary differentiated supports for students is a challenge in my school.	1.464
3	Staff truly believe that they can help all students meet learning goals.	1.245
26	Time is provided in the workday for co-planning.	1.219
12	Systems are in place where teachers are directly involved in decision-making for site initiatives.	1.005
10	Operational barriers such as master schedule, lack of time or limited staffing prevent staff in my school from supporting students.	0.996
32	Communication about decision-making is provided to teachers.	0.967
19	Staff resistance prevents us from effectively supporting students	-1.012
34	Teachers observe one another and give each other feedback to develop the team's best practices.	-1.127
30	Monitoring public spaces, such as the cafeteria, hallways, playgrounds, etc., is an important use of my time.	-1.185
7	Maintaining an appropriate continuum of services for students with disabilities is impractical within my building.	-1.237
13	Intelligence is something about students that school staff cannot change very much.	-1.396
16	We have exclusive cliques or camps within our facility.	-1.537
23	There is an "us against them feeling" between general and special education in my building.	-1.576
11	Teachers tend to protect or guard resources (including staff, lessons, strategies, tests, etc.) from one another.	-1.708

Complete results for Factor 2 are included in Appendix C. Factor 2 patterns of responding indicate an overall belief that students with disabilities are capable of learning

but recognize the existence of realistic limitations or systemic barriers in being able to respond to student needs and staff involvement. This group of principals is referred to as the Constrained Principals.

Figure 3 reveals the model array distribution for the ideal response pattern of principals identifying with Factor 2.

Strongly Disagree Strongly Agree

-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
23	7	25	17	18	14	12	27	20
11	13	19	21	22	8	10	3	31
	16	34	6	1	29	32	26	
		30	28	5	9	2		
			24	15	33			
				4				

Figure 3. Model Sort for Factor 2 (Constrained Principals)

Variance = 4.706; Stan. Dev. = 2.169

Table 7 represents the statements with the weighted factor scores of near or greater than /1/ for Factor 3.

Table 7.

Factor Scores >/1.00/ for Factor 3 (Pragmatic Principals)

Number	Statement	*Z*-score
31	Teachers collaborate several times a month on instructional topics, such as sharing or co-developing lessons, assessments, and student work.	2.157
26	Time is provided in the workday for co-planning.	1.862
33	Troubleshooting the implementation of school improvement efforts is an important use of my time.	1.794
6	Working with students and their parents on discipline or attendance issues is an important use of my time.	0.96
17	All staff members are invited to participate in leadership opportunities throughout the school day.	-0.97
25	Staff members are reluctant to work with struggling students.	-1.136
23	There is an "us against them feeling" between general and special education in my building.	-1.197
21	Completing routine paperwork (such as reports and record keeping) is an important use of my time.	-1.205
7	Maintaining an appropriate continuum of services for students with disabilities is impractical within my building.	-1.265
10	Operational barriers such as master schedule, lack of time or limited staffing prevent staff in my school from supporting students.	-1.424
8	In my school, students with disabilities are better served in smaller group settings with a slower pace of instruction.	-1.568
13	Intelligence is something about students that school staff cannot change very much.	-1.981

Complete results for Factor 3 are included in Appendix C. Participant patterns of responses within Factor 3 reveal a pattern of directive problem-solving and dealing with emergent situations. The pattern suggests this group of principals is more heroic and

isolated in their leadership approach and therefore, will be referred to as the Pragmatic Principals.

Figure 4 represents the most probable model of perspectives shared by principals loading on Factor 3.

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
8	21	34	4	16	18	5	33	31
13	7	17	30	3	32	22	6	26
	10	25	12	9	1	14	2	
		23	27	24	29	15		
			11	28	20			
				19				

Figure 4. Model Sort for Factor 3 (Pragmatic Principals)

Variance = 4.706; Stan. Dev. = 2.169

Factor Interpretation: Similarities and Differences in Perspectives

According to Watts and Stenner, the Q-sort process shows the interconnected themes or perceptions among a group of people on a provided topic (2005, p. 70). To fully understand the perspectives of the three different factors resulting from this research, it is necessary to examine the similarities and differences present among the groups. Table 8 provides the correlation between the identified factors.

Table 8.

Correlations Between Factor Scores

Factors		1	2	3
	1	---	0.60	0.59
	2		---	0.46
	3			---

As evidenced in Table 8, there exists a high correlation between all factors despite each participant only loading into one distinct factor (as previously described in Table 3.) The existence of these relationships suggests that the participants share many common perspectives as might be expected of individuals all serving as building principals within the State of Ohio. Forty-five percent of the participants identified in Factor 1 with a distinct perspective suggesting empowering leadership practices. An additional 30% identified a different perspective as indicated by Factor 2, Constrained Principals. Fifteen percent of the participants loaded into the final identified factor, the Pragmatic Principals. The remaining 10% of participants did not load into a distinguishable factor.

Factor Analysis: Interpreting Meaning

To represent the viewpoint shared by the principals in the identified factors, rankings of the most relevant statements are provided in the following tables and include the column value of how strongly this perspective rated each statement. For example, statement 3 as rated by the group perspective as a +4 (most strongly agree) is represented as (3:+4). Select qualitative comments shared by participants in each group are provided

in italics throughout the following sections to further support explanation of each viewpoint.

The tables and figures provided so far provide a quantitatively-based analysis from which to interpret the results of this study. Additional meaning is derived from analysis of the qualitative and descriptive information gathered during the Q-sort process and the demographic information of each principal.

Table 9 provides a detailed list of the statements that distinguished Factor 1 from the other identified factors. All statements in the table were identified as distinguishing at the $p < .05$ level and those with an asterisk are also significant at the $p < .01$ level of significance. Using these statements, along with the qualitative analysis provides an understanding of the shared viewpoint among participants loading onto this factor.

Factor 1: Empowering Principals

For Factor 1, participants loading on this factor ranked statements 3, 14, 17 and 34 as significantly more agreeable and statements 9, 8, 15, and 16 as more disagreeable than the other participants. The magnitude and direction of agreement is indicated by standardized *Z*-scores, represented as "*Z*-SCR." "Q-SV" represents the Q-sort value or column placement.

Table 9.

Factor 1: Empowering Principals' Distinguishing Statements

			1		2		3
No.	Statement	Q-SV	*Z*-SCR	Q-SV	*Z*-SCR	Q-SV	*Z*-SCR
3	Staff truly believe that they can help all students meet learning goals.	4	1.91	3	1.25	0	0.24
14	I communicate a sincere belief that staff members can develop teaching skills.	4	1.4	1	0.78	2	0.64
17	All staff members are invited to participate in leadership opportunities throughout the school day.	3	1.35*	-1	-0.26	-2	-0.67
34	Teachers observe one another and give each other feedback to develop the team's best practices.	0	0.02	-2	-1.13	-2	-0.67
9	Fairness/balancing the needs of individual students with disabilities with the education and rights of all the other students are a challenge.	-1	-0.58	1	0.55	0	0.14
8	In my school, students with disabilities are better served in smaller group settings with a slower pace of instruction.	-1	-0.68*	1	0.74	-4	-1.57
15	Students with disruptive behaviors regularly cause significant issues.	-1	-0.78	0	-0.18	1	0.6
16	We have exclusive cliques or camps within our facility.	-2	-0.79	-3	-1.54	0	0.31

Note. $p < .05$; (*) $p < .01$. Q-SV = Q-Sort Value; *Z*-SCR = *Z*-Score.

Factor 1 had nine significantly loading participants which explained 28% of the variance in this study. Factor 1 resulted in an eigenvalue of 9.35. Principals in this group have been principals between 2 and 21 years. Principals in this category were employed in a variety of districts, ranging from rural, high poverty, small population (Type 1) to urban, high poverty, average population (Type 7) as based on the Ohio District Typology Demographics (ODE, 2013). Two types of districts were not represented in this category and those were 3 (small town, low poverty, small population) and 8 (urban, very high poverty, very large population). This group included five females and two male principals and represented five elementary schools, two middle schools, and two high school assignments. Six of the schools served in this group had most recently earned Ohio Local Report Card Gap Closure scores of A, two scores of B, and one of F. Appendix B summarizes information about principal experience and school performance by factor group.

The Empowering Principals' General Viewpoint

Despite capturing the largest quantity of principals and variance, this factor had the fewest distinguishing statements. The general viewpoint shared among the principals loading on this factor most strongly represented a staff belief that they can help students meet learning goals (3:+4). F7FENF stated "*you have to have staff that believe they can impact the growth of students."* Principal I5MMAA clearly articulated a "*shift of we believe you can do it; therefore, we aren't going to let you not do it"* when describing how his/her building has "*flipped that whole switch to say everyone can do it. We have to believe in them if they don't believe in them"* as he/she described his/her staff coming

around to not letting students opt out of learning by getting zeroes on tests or on incomplete homework assignments. P5FHFB remarked,

> *if they don't feel like they are making a difference, if they don't believe that children can learn, then I actually think that they should not be teaching. I think teachers have the power to be so influential in the classroom*

The power of efficacy, or the belief that one can make a difference, evident among the principals in this group is aligned with previous research (Hattie & Yates, 2014; Ishimaru & Galloway, 2014; Leithwood & Jantzi, 2008; Lombardo-Graves, 2017; Lowrey, 2014). Clearly, Empowering Principals demonstrate an unwavering sense of efficacy about their students and staff.

This factor also revealed a strong feeling that the principal communicates a solid belief that staff can develop teaching skills to support students with disabilities (14:+4). A1FEAA remarked "*I always think that the biggest part of our job is that teachers can improve skills too."* C5FECA echoed that sentiment with "*the biggest thing here I am doing is helping them know that they can always be developing more skills around kids with disabilities."* F7FENF reported "*this is something research really shows can improve instruction for everybody…it's coaching, coaching, coaching."* P5FHFB remarked *"designing lessons or making student goals or how you can improve as a teacher is tough work…there is no quick fix."*

Several of the principals loading in the Empowering Principals group addressed the need for trust between building administration and staff and between central office and building leadership.

> *In no way does my super or my director of special ed micromanage me in any way. They just don't. They just trust me and that is huge. Superintendents that are control freaks…always have their hands in [where they had previous experience] like, doesn't breed good leadership and success in my opinion*

C5FECA described how coming in as a younger principal and relying on some bad advice he/she received coming into the position caused "*scar tissue"* that they have "*spent years trying to heal, but like the whole trust business…that's kind of going a long way"* in contributing to honest and transparent conversations and development of shared leadership in the building.

This sense of empowerment and efficacy was also revealed in the minimization of potential barriers. For example, principals disagreed with the statement fairness/balancing the needs of students with disabilities with other students is a challenge (9:-1). "*Anytime that the teachers are able to then kind of solve problems and you do better for kids because it's going to be smoother"* according to C5FECA. H4FMAA insisted, *"we have an incredibly collaborative staff…these are our kids…and whatever they need, we will meet their needs."* This principal further articulated that the principal's "*number one job is to eliminate barriers. We need to get barriers out of the way so that teachers can be experts in the classroom."* T4MHDB observed "*our*

barriers…are not from operational standpoints. Like lack of time, limited staffing, that's not really us."

Empowering Principals also disagreed that students with disruptive behavior regularly cause significant issues (15:-1). When retelling a story about teachers discussing students with behavior issues, D6FEAA observed "*they struggle, but they don't look at it from up on the mountain, like it can't be handled. They just think about ways they can work on it to help it."*

Aside from a sense of efficacy, a participatory or distributed approach to leadership was also identified among the principals in this factor as indicated by the statement staff participate in leadership opportunities throughout the school day (17:+3). H4FMAA clearly stated, "*I can't run the whole show. Like, everybody needs to know where we are headed and be involved in leading their own circles and their own groups and their own peers."* C5FECA was excited to share that "*teachers have come up with a homegrown idea for next"* year and that they have been able "*to make the schedule work"* in support of this idea to departmentalize and share students. This principal explained they "*always wanted…teachers to have ideas and be coleaders of this building."* The perspective shared by this respondent was "*let's all come up with it together and my job is to say yes and figure out how to make it work."* Principal P5FHFB stressed collaboration.

> *They as a whole are more effective together than I as a leader am on my own. All of the efforts that I put into place to make that happen will never be as effective as if they make that happen internally. It has to be something that like, outlives me as the building principal*

F7FENF reported "*we are working also really giving teachers a voice and not just paying lip-service to collaborative leadership and shared responsibility…but it's hard…when you're not, you'd rather sit back and complain than actually do the work."*

This group rated teachers observe one another and give feedback on best practices as more neutral (34:0) than other identified groups. "*The mindset is that we are peers, collegial peers"* according to P5FHFB.

Logistically, Empowering Principals disagreed that students with disabilities are better served in small-group settings with a slower pace of instruction (8:-1) and that exclusive cliques or camps exist among staff (16:-2). B2FECA shared "*I believe small group settings are good for all kids."*

Empowering Principals reveal a strong sense of efficacy, of themselves as leaders developing staff, and of staff developing each other, and developing students. Along with efficacy, an emphatic effort to share leadership and foster collaboration is evident among this group. The reliance on collaborative leadership and decision-making confirms previous research supporting improved student outcomes (Fedigan, 2018; Swearingen, 2014) and is aligned with the NELP and PSEL standards.

Empowering Principals minimize barriers and emphasize trust. Finally, several of the Empowering Principals' commentary included a recognition of a need to challenge the status quo. What worked in the past is not what will work today. "*We can't keep saying we used to do this, and we used to do that. It matters now and what is happening in the future. There has been a tremendous shift"* according to I5MMAA. Empowering Principals are adaptive to the changing demands they face, and they confront established

practices as leaders of the building. In summary, D6FEAA stated it best when commenting, "*I do think it comes from what you feel as a leader determines how you place these,"* speaking about the leadership practices reflected on the 34-item Q sample.

Factor 2: Constrained Principals

Table 10 provides a detailed list of the statements that distinguished Factor 2 from the other identified factors. All statements in the table were identified as distinguishing at the $p < .05$ level and those with an asterisk are also significant at the $p < .01$ level of significance.

Table 10.

Factor 2: Constrained Principals' Distinguishing Statements

			1		2		3
No.	Statement	Q-SV	*Z*-SCR	Q-SV	*Z*-SCR	Q-SV	*Z*-SCR
27	Providing the necessary differentiated supports for students is a challenge in my school.	-2	-0.78	3	1.46*	-1	-0.43
3	Staff truly believe that they can help all students meet learning goals.	4	1.91	3	1.25	0	0.24
10	Operational barriers such as master schedule, lack of time or limited staffing prevent staff in my school from supporting students.	-3	-1.47	2	1.00*	-3	-1.42
8	In my school, students with disabilities are better served in smaller group settings with a slower pace of instruction.	-1	-0.68	1	0.74	-4	-1.57
15	Students with disruptive behaviors regularly cause significant issues.	-1	-0.78	0	-0.18	1	0.6
17	All staff members are invited to participate in leadership opportunities throughout the school day.	3	1.35	-1	-0.26	-2	-0.97
24	Staff in this school work together to design plans for teacher development.	1	0.66	-1	-0.78	0	0.12
30	Monitoring public spaces, such as the cafeteria, hallways, playgrounds, etc. is an important use of my time.	-1	-0.1	-2	-1.19	-1	-0.34
16	We have exclusive cliques or camps within our facility.	-2	-0.79	-3	-1.54	0	0.31

Note. $p < .05$; (*) $p < .01$. Q-SV = Q-Sort Value; *Z*-SCR = *Z*-Score.

Factor 2 had six significantly loading participants which explained 7% of the variance in this study. Factor 2 resulted in an eigenvalue of 1.43. The five male and one female principals in this group have been principals at their current schools between 1 and 10 years. Principals in this category were employed in a variety of districts, representing Type 2 (rural, average poverty, very small population) and Type 3 (small town, low poverty, small population) to suburban Type 6 (very low poverty, large population) and Type 8 (urban, very high poverty, very large population). This group represented one elementary school, three middle schools, and two high school assignments. Two of the schools served in this group had most recently earned Ohio Local Report Card Gap Closure scores of A, two scores of B, one of C, and one of F. Appendix B providers more details on the principals and schools in this group.

The Constrained Principals' General Viewpoint

Principals representing this viewpoint are most unique in that they find providing differentiated supports to students is a challenge (27:+3) and that operational barriers prevent staff from supporting students with disabilities (10:+2). Specifically, N2FHNC confessed "*making master schedules…is very troubling and difficult…*due to *conflict with another thing."* In this case, they were referring to a conflict with the period for band. This conflict creates a "*lack of flexibility to make a better schedule."* M8FMFF also expressed that they "*lacked a continuum of services in their building."* This principal also indicated "*this schedule was just a mess, students couldn't get the support they needed."* The same principal stated, "*providing the necessary supports for differentiation is challenging in my school"* despite access to an instructional coach because the instructional coach "*can't get to everybody."* Along with a clear understanding of

differentiated supports, this principal acknowledged a need for staff "*even being willing to try something new."* N2FHNC echoed the need to be a risk-taker. "*Just being open is a huge benefit. If you are asking me, one of the big pieces is trying something new."* The impact of a constrained continuum may also have been evident as an artifact of these principals' strong disagreement that students with disabilities are better served in small-group settings with a slower pace of instruction (8:-4). This interpretation seems most logical given the responses were focused on the items discussed above and less on inclusive practices, co-teaching models, and higher expectations for SWD.

Although feeling as though the staff well-served students with disabilities, G3MMAB reported "*we are always changing how we deliver our special instruction* and *every year it changes."* This group of Constrained Principals also did not feel as strongly that staff participation in leadership opportunities throughout the day was as important (17:-1). Nor did this group report that teachers are working together to develop plans for professional development (24:-1). G3MMAB shared "*central office pretty much dictates what professional development is going to look like."* M8FMFF spoke of limited site-based decision making as well when remarking "*we don't hold the strings all the time"* about maintaining a continuum of services because "*someone above us said no, just push them in."*

Lack of time was also a constraining factor observed by N2FHNC.

> *There is just no common time. This is an operational issue and it's a problem for me. I would love to be able to sink into the schedule co-planning time where we can have more time for them to be together*

Optimistically, Constrained Principals did endorse that their staff believe they can help students meet learning goals (3:+3). According to G3MMAB, "*if staff truly have a fixed mindset, they're going to have a hard time working with any child with special needs. We meet kids where they are, and we help them grow."* Principal Q6MHFB shared "*you can develop skills, like you are not born with the ability to teach or not. I mean you are taught those things."* Principal J6MMBA shared "*you need to have that behavior skill to work with all kids, but especially with students with disabilities…yet, we don't ask them those questions when we interview them."* Q6MHFB also observed "*increased pressures on staff,"* especially those serving struggling students and the need to "*give them opportunities…for professional development*." More than anything, J6MMBA felt that "*building relationships with the kids is more important than content, especially with our disability kids."*

Speaking of the adults in the school, the Constrained Principals disagreed that there are exclusive camps or cliques among staff (16:-3). Despite being proud of accomplishments and the improvements that have been made in their buildings, the perspective of the Constrained Principals reflected that these efforts come at a cost. "*It is just such a constant grind and constant stress and fight and a battle with people that is just exhausting,"* according to N2FHNC.

Overall, for the most part, Constrained Principals feel they are serving students well, and their Gap Closure scores for all but one school support that assertion. However, the perspective of this group revealed operational and logistical challenges that impose barriers, cause frustration, and perpetuate the diminished capacity for shared leadership and efficacy beliefs in the process of the daily grind. Their perspective illustrates the

point being made by McCleskey and Waldron (2015), in that principals need to push beyond the technical and operational aspects of leadership in order to achieve improved student results.

Factor 3: Pragmatic Principals

Table 11 provides a detailed list of the statements that distinguished Factor 3 from the other identified factors. All statements in the table are identified as distinguishing at the $p < .05$ level and those with an asterisk are also significant at the $p < .01$ level of significance.

Table 11.

Factor 3 Pragmatic Principals' Distinguishing Statements

			1		2		3
No.	Statement	Q-SV	*Z*-SCR	Q-SV	*Z*-SCR	Q-SV	*Z*-SCR
31	Teachers collaborate several times a month on instructional topics, such as sharing or co-developing lessons, assessments, and student work.	3	1.29	4	1.48	4	2.16
33	Troubleshooting the implementation of school improvement efforts is an important use of my time.	0	0.12	1	0.47	3	1.79*
6	Working with students and their parents on discipline or attendance issues is an important use of my time.	0	-0.03	-1	-0.52	3	0.96*
5	Equitable division of responsibility for preparing and modifying instructional	1	0.19	0	-0.18	2	0.85

	materials.						
15	Students with disruptive behaviors regularly cause significant issues.	-1	-0.78	0	-0.18	1	0.60
16	We have exclusive cliques or camps within our facility.	-2	-0.79	-3	-1.54	0	0.31*
3	Staff truly believe that they can help all students meet learning goals.	4	1.91	3	1.25	0	0.24*
19	Staff resistance prevents us from effectively supporting students.	-2	-1.34	-2	-1.01	0	-0.24
12	Systems are in place where teachers are directly involved in decision-making for site initiatives.	2	1.05	2	1.00	-1	-0.36*
11	Teachers tend to protect or guard resources (including staff, lessons, strategies, tests, etc.) from one another.	-3	-1.46	-4	-1.71	-1	-0.66
21	Completing routine paperwork (such as reports and record keeping) is an important use of my time.	-1	-0.42	-1	-0.35	-3	-1.20
8	In my school, students with disabilities are better served in smaller group settings with a slower pace of instruction.	-1	-0.68	1	0.74	-4	-1.57*

Note. $p < .05$; (*) $p < .01$. Q-SV = Q-Sort Value; *Z*-SCR = *Z*-Score.

Factor 3 had three significantly loading participants which explained an additional 5% of the variance in this study. Factor 3 resulted in an eigenvalue of .99. The two male and one female principals in this group have been principals at their current schools between two and six years. Principals in this category were employed in two types of districts, representing Type 6 (suburban, very low poverty, large population) and Type 8 (urban, very high poverty, very large population). Appendix B summarizes details related to this group's demographics. This group represented two middle schools and one high school. The schools served in this group had most recently earned Ohio Local Report Card Gap Closure scores of an A, a B, and an F.

The Pragmatic Principals' General Viewpoint

Not unlike the other groups, the Pragmatic Principals also see the value in providing teachers with the opportunity to collaborate on instructional topics and student work several times per month (31:+4). Despite feeling strongly that time for collaboration is important, principal L7MMBB observed "*I can't always force them to do common planning time, but the time is there."* This group also disagreed that completing important paperwork is an important use of their time (21:-3) and disagreed that staff protect or guard resources from each other (11:-1). However, this group endorsed a stronger perspective related to their role in troubleshooting school improvement efforts (33:+3) and disagreed more strongly that students with disabilities are better served in small group settings with a slower pace of instruction (8:-4). Another unique perspective from the principals who loaded as Empowering was in what other groups considered to be the minutia of their work. For example, principals with the more pragmatic perspective agreed that working on discipline and attendance issues was an important use

of their time (6:+3) and that they needed to deal with students with behavior issues regularly (15:+1). Principal K6FMAA shared "*if I can't get the kids to school, the kids can't learn"* and "*if I can't deal with emergencies, then kids can't learn."* This pattern of responding implies that part of the principal's leadership role is prioritizing completing demands as suggested by Iachini and colleagues (2016).

Statements regarding their perspective on staff matters also provided evidence of significant differences in the Pragmatic Principals' viewpoint. For example, this group sees staff participating in leadership opportunities throughout the school day as less relevant (17:-2) and disagree that there are systems in place for teachers to be directly involved in site decision-making (12:-1). In fact, principal L7MMBB described that while "*the literal answer is yes…but I have it here because things get changed. They might intend for one thing and something else, because of whatever reason, from the top it has to change."* Principal K6FMAA also observed "*there are times when even as a principal, I don't have as much involvement as I would like to in making decisions. I feel like our hands are tied so much sometimes that it's almost not possible."*

Related to statements about staff members, the Pragmatic Principals were more neutral than other groups. For example, respondents in this group acknowledged the existence of some staff resistance to working with struggling students (19:0). Principals from this perspective continued to differentiate themselves from the other groups in their neutral views of the existence of exclusive camps or cliques among staff members (16:0) and in the belief that staff members can help students meet learning goals (3:0). Principal R7MHFF shared his staff "*have a lack of confidence in their ability to change*

something." R7MHFF went on to explain how in his school there are "*low expectations"* and the "*depth of the work is a challenge too and then that kind of beats people up."*

Shifting to a focus on students, the perception of low expectations for identified students was emphasized in the statement "*it's kind of like once you get the services here you are sort of, you are probably sort of locked in"* when discussing the increasing number of students being identified for special education services and very few of whom are ever dismissed from services. In fact, R7MHFF shared the "*mindset has been, historically, that this is sort of your ticket as far as with your testing requirement*." This statement was referencing the ability of IEP teams to exempt identified students from the consequences of not meeting graduation testing requirements. This perspective highlights the challenges of school as a system that perpetuates low rigor and decreased expectations as reported by Bacon (2015) or Frattura and Topinka (2006) and provides evidence of the traditional, deficit-based paradigm of disability identification as discussed by Dudley-Marling and Burns (2014) or Harry and Klinger (2007).

Finally, the Pragmatic Principals shared the perspective that the equitable division of material preparation and accommodations between general education and special education staff members is important (5:+2).

In summary, the Pragmatic Principals portray their role as one of responding to the immediate needs presented on a day-to-day basis. They see themselves as fighting the good fight for students and facilitating the mechanism for their staff to do their jobs. They preach the value of teacher collaboration, but they do not convey a sense of systemic influence or the development of the learning capacity of students or the leadership capacity of staff in their buildings. Evidence within this perspective calls into

question the overall structure of special education identification and service delivery as a contributing factor to the continuation of the gap between identified and non-identified students.

Unfactored Outliers

Two participants did not load onto any of the three identified factor groupings indicating that the Q-sort patterns did not represent perspectives shared by the other groups. Participant SJMTC may have had a different perspective because he/she is currently a principal at a technical school serving students county-wide. Special education leadership decisions are often inherited by staff at this receiving school with little authority to influence decisions in the receiving setting. The principal reports that most of the students attending this county school come from surrounding urban districts.

Participant SJMTC's Viewpoint

Principal SJMTC believes staff hold a belief that all students are capable of learning (3:+4) and that staff feel safe putting ideas "on/off" the table (20:+4). Other areas of agreement included teachers collaborate several times per month on instructional issues (31:+3) and staff can develop skills related to students with disabilities (14:+3). Unique agreement on teachers receive feedback outside formal evaluations (29:+3) and staff work collaboratively to design professional development (24:+2) was evident when compared to other groups. Not unlike many of the other factor-loading participants, SJMTC disagreed that staff are reluctant to work with struggling learners (25:-4) and there is an "us against them" feeling between general and special education (23:-4).

Students with disabilities being better served in small groups (8:-3), the denial of exclusive camps or cliques (16:-3), and teachers giving peers feedback (34:-3) were also not surprisingly areas of disagreement.

While some of the placements of the Q sample do not seem that discrepant, the qualitative information shared in the discussion does reveal a significant difference in the nature and structure of this unique school setting compared to other public school principals. As articulated by SJMTC, "*I would never say that in another school,"* referring to how the current school was different than any place he or she had worked previously. Expanding,

> *so, here we are full inclusion. Every kid in this building is getting their specially designed instruction by a general education classroom teacher. We're probably violating the law, like we just take an eraser to the IEPs for the kids coming in*

SJMTC explained that there is no co-teaching in this building, but rather a consultative model with coaching and modeling from intervention staff to general education teachers who are "*held accountable for teaching all their kids."* This principal described that students are unilaterally placed at this school because their home schools feel it is too expensive or they lack services to support them appropriately. "*It's going to cost a lot of money, so they unilaterally just tell them that they are going to come here."* SJMTC agreed that fairness of and balancing the needs of students with disabilities and other students are a challenge (9:+1). In describing the placement of that statement, SJMTC shared,

> *teachers, that's their thing. If I change this, it's not fair. You know, here's a kid with a traumatic brain injury and you're worried about modifying an assignment and not being fair to the kids that don't have a traumatic brain injury*

This principal also shared insight into identification habits, opining that

> *standardized education has created imaginary learning disabilities. You try and keep kids who are not developmentally ready based on age…using benchmark exams…that are based on grade-band, age normed scores. So, now we are getting data that shows this kid is behind, well he must be special ed*

Similar to the Constrained Principals, responses from this principal endorse connections to the unintended consequences and systemically oppressive instructional casualties caused by accountability pressures as implied in previous literature (Bacon, 2015; DeMatthews, 2014; Frattura & Topinka, 2006; Lombardo-Graves, 2017). While thought-provoking and worthy of additional consideration, this perspective and the unique nature of the setting in which this principal serves is certainly discrepant from the other viewpoints expressed and is therefore likely why this participant remained an unfactored outlier.

The second unfactored participant was O3FHCC. This principal reported being in his/her fifth year as principal at this high school setting. The District is a Type 3 (small town, low poverty, small population) typology according to the Ohio Department of Education (2013).

Participant 3FHCC's Viewpoint

In areas of agreement, 3FHCC was like other principals who agreed that teacher collaboration several times per month (31:+4) and time for co-planning within the work day (26:+2) were important. Unique areas of agreement for 3FHCC were the focus on providing targeted- (22:+3) and teacher-developed professional development (24:+3). The importance of examination of standardized testing data (18:+3) was also rated higher in agreement than any other group.

Areas of disagreement were not dissimilar to other factored groups. For example, 3FHCC strongly disagreed that teachers guard or protect resources from each other (11:-4) and did not feel that there is an "us against them" feeling between special and general education (23:-4). Operational barriers (10:-2) and impracticality of continuum maintenance (7:0) were not rated as preventing services for students with disabilities. 3FHCC described his/her leadership as "*my role as an instructional leader is problem-solving and you know, continually improving in all of our instructional programming and student learning"* adding "*developing that kind of building-wide discussion of our practice and research and evidence and that's what we should be doing."* This principal's emphasis on instructional leadership was demonstrated by a sign hanging in the office that read, "We cannot intervention our way out of ineffective instruction." When asked about that statement, this principal identified this issue as a common cause for special education in the first place, aligning with DeMatthews (2014) focus on effective tier one instruction. This principal additionally described how the staff

> *explored an entire LRE, our entire continuum of direct and indirect services, having come a long way* and in *putting our money where our mouth is. Because*

before we were telling them what co-teaching should look like, but not giving them the resource to really implement it

Patterns emerging from this analysis and qualitative responses align with the instructional leadership research of Finnigan (2010) and Urick and Bowers (2014). The intense focus on instructional leadership and uniquely stronger agreement with the importance of teacher-developed professional development and standardized testing data analysis are likely the reasons why this principal's perspective did not align with any of the other perspectives.

Similarities Between Factors

Table 12 provides all the Q sample statements that did not differentiate any of the factor groups. These statements are the consensus statements, meaning all factor groups held similar viewpoints or perspectives about these items. All statements in Table 12 are non-significant at $p>.01$ and those statements indicated with an asterisk are additionally non-significant at $p>.05$.

Table 12.

Consensus Statements

		Factors					
		1		2		3	
No.	Statement	Q-SV	*Z*-SCR	Q-SV	*Z*-SCR	Q-SV	*Z*-SCR
1*	Dealing with emergencies and other unplanned circumstances is an important use of my time.	0	-0.02	0	-0.16	1	0.44

2*	Instructional expectations are made clear to teachers in advance.	3	1.19	2	0.86	3	0.89
4*	Teachers are invited to give critical feedback about our administrative practices.	0	0.16	0	-0.18	-1	-0.30
7*	Maintaining an appropriate continuum of services for students with disabilities is impractical within my building.	-4	-1.51	-3	-1.24	-3	-1.27
14	I communicate a sincere belief that staff members can develop teaching skills.	4	1.40	1	0.78	2	0.64
18*	Examination of standardized test results of students from a teacher's class is an important use of my time.	1	0.16	0	0.46	1	0.60
21	Completing routine paperwork (such as reports and record keeping) is an important use of my time.	-1	-0.42	-1	-0.35	-3	-1.20

22*	I provide teachers with professional development that is targeted to their professional needs and goals.	1	0.78	0	0.31	2	0.67
23*	There is an "us against them feeling" between general and special education in my building.	-3	-1.45	-4	-1.58	-2	-1.2
28*	Accountability for learning is demonstrated by measuring student learning with standardized assessments.	0	0.1	-1	-0.56	0	0.06
29*	Teachers are provided with clear feedback on their practice outside of formal evaluations.	1	0.68	1	0.71	1	0.41
32*	Communication about decision-making is provided to teachers.	2	1.02	2	0.97	1	0.6

Note. $p < .05$; (*) $p < .01$. Q-SV = Q-Sort Value; *Z*-SCR = *Z*-Score.

Combined Viewpoint

Shared viewpoints included several statements that fell within the more neutral zone. These included the following statements: dealing with emergencies and unplanned events is an important use of my time (1:0,0,+1); teachers are invited to give critical feedback on administrative practices (4:0,0,-1); examination of standardized test results from a teacher's class is an important use of my time (18;1,0,1); accountability for learning is demonstrated by measuring student learning with standardized assessments (28:0,-1,0); and teachers are provided with clear feedback on their practice outside of formal evaluations (29;1,1,1). H4FMAA described how staff at that school "*have a lot of discussion on growth versus achievement…to see kids growing exponentially regardless of their achievement, we can't not honor that."*

Statements that shared a disagreeable consensus view included: maintaining an appropriate continuum of services for students with disabilities is impractical within my building (7:-4,-3,-3); completing routine paperwork (such as reports and record keeping) is an important use of my time (21:-1,-1,-3) and there is an "us against them feeling" between general and special education in my building (23:-3,-4,-2). Participant F7FENF noticed the need to "*help our general education teachers understand what co-teaching really is"* and that "*you cannot treat your ISs like they are paraprofessionals."*

Participants across factors also shared overall agreement with many statements. The statements revealing universal agreement for importance in supporting students with disabilities were: instructional expectations are made clear to teachers in advance (2:+3,+2,+3); I communicate a sincere belief that staff members can develop teaching skills (14:+4,+1,+2); and communication about decision-making is provided to teachers

(32:+2,+2,+1). H4FMAA stressed the importance of "*instructional expectations. You can't get to a goal if your people don't know what that goal is."*

Summary

Chapter 4 provided an explanation of the analysis and evaluation of the data resulting from the mixed methods Q-sort procedure conducted with Ohio public school principals. Q methodology required principals to complete a forced prioritization sort of 34 statements pertaining to mindset and leadership practices. Principals were prompted to consider leadership practices in support of improved outcomes for students with disabilities given the current era of accountability in public schools. Q-sort as a methodology provided a valid means of operationalizing internal perspectives (Brown, 1980, pp. 174-175). Twenty principals participated in this research. PQMethod 2.35 (Schmolck, 2014) was used to conduct the data analysis.

Results indicated moderate to high correlations between each sort in the study ($r \geq .44$). Centroid analysis and varimax rotation were used to extract factors with eigenvalues approaching or greater than 1.0. In total, 59% of the variance in the study was explained by these three factors.

Nine principals were identified as Empowering Principals, the first and strongest factor identified. Principals in this group demonstrate leadership practices that heavily referenced collaboration, shared leadership, and strong staff sense of efficacy in the learning ability of students and in the ability of staff to develop new skills supporting students with disabilities.

Factor 2, Constrained Principals, represented the viewpoints of six principals. Leadership practices in this perspective shared a belief in the ability of students to learn

but were unique in their descriptions of the challenges presented by the need to differentiate. Members of this group also revealed a frustration or limited ability to overcome operational barriers. Opportunities for staff members to participate in leadership and professional development planning were lacking within this perspective.

Finally, the third identified group was the Pragmatic Principals. Leadership practices among principals in this factor see themselves as critically involved in the cycle of school improvement and inferred having more individual responsibility for leadership decisions with less staff involvement. They feel more strongly that it is their role to deal with emergencies, attendance, and discipline issues. A theme of low expectations for students with disabilities, a tendency of IEP teams to excuse students from expectations as a result of their disability, and perpetuation of the cycle of continued identification surfaced among this group.

Overall, all groups demonstrated a tendency toward a growth mindset orientation despite the leadership practices differentiated as described within this section. Gap closure scores as measured on the most recent Ohio Local Report Card indicated scores ranging from A to F despite district typology and leadership practice endorsed. However, it is worth noting that all but one of the nine principals in the Empowering group had earned above average Gap Closure grades.

Chapter 5

Discussion and Conclusions

Summary of Findings

The intended purpose of this research was to investigate Ohio public school principal mindset orientations about students with disabilities and leadership practices using Q methodology. Specifically, this investigation was designed to better understand mindset orientations held by 20 Ohio public school principals, the influence of the mindset orientation on leadership practices, the impact of leadership practices on gap closure for students with disabilities, and which principal beliefs related to mindset are associated with improved gap closure for students with disabilities.

The following section explores responses to four research questions based upon the overall patterns and responses described thus far.

Research Question 1

Many of the statements included in the Q sample were taken from an instrument designed to measure a school's growth mindset (Hanson, et al., 2016). One statement (#13) was taken from Dweck's Mindset Inventory (2016). In order to examine Research Question 1, the fixed-mindset question from the DMI was determined to be the most explicit item to assess opinions on mindset given the heavily-loaded, growth-mindset items that made up the Q sample. So, relative to students with disabilities, what mindset orientation do principals hold? Based upon the placement of statement 13, *intelligence is something about students that school staff cannot change very much*, across the three factor groups, most respondents disagreed or strongly disagreed (13:-2,-3,-4). P5FHFB

disagreed strongly with the fixed mindset nature of this statement. "*I disagree with this altogether because I know that research-based that this is not true. It's a false statement."* F7FENF also strongly disagreed with the idea of a fixed mindset. "*We just know that is not true and that the research does not support that."* C5FECA explained "*we have to have a growth mindset and we're always trying to get better…we talk about it a lot for our students."* Such findings suggest that most principals surveyed leaned more toward a growth mindset orientation relative to all students, including students with disabilities.

Research Question 2

What influence does mindset orientation have on leadership practices? Given the findings and emergence of three factors, it appears as though mindset orientation can manifest in several different leadership practice styles. The bulk of this research explained the various principal types that emerged from this mixed methods analysis. The types were interpreted by the researcher to be Empowering, Constrained, and Pragmatic Principal leadership styles and the resulting practices representative of each. For example, the Empowering Principals practice shared and participatory leadership. They strived to empower staff to provide input on decision-making and grow professionally. They communicated a strong sense of efficacy evidenced as the belief that both students and staff are capable of learning and developing. They agreed with the value of collaboration, while downplaying operational barriers and staff resistance. Empowering Principals shared a perspective that focused more on improving the situation for all involved in public education as opposed to admiring the problem or

making excuses as to avoid doing the hard work. Their pattern of responses referenced a reliance on research-based practices and collaborative decision-making.

Conversely, some principals described their leadership practices in terms of limitations and barriers. Constrained Principals found leadership practices focused on differentiation to be challenging. The response pattern included evidence of frustration, a lack of capacity to do all that is expected, competing resources, and an externalized locus of control in decision-making. The pressure of expectations manifested itself in the discussion of leadership practice among principals within this perspective.

Finally, a third pattern of leadership practice responses emerged with the Pragmatic Principals. Leadership among this group was less focused on collaboration and shared decision-making. Principals within this group described the struggle of school experience for students with disabilities, practices that encourage label-driven identification as a ticket out of expectations, lowered instructional standards, and disruptions caused by behavior, attendance, and discipline problems. Although there was an appearance of value for collaborative practices, responses and qualitative statements revealed that, while time for collaboration is provided and even expected, little evidence was presented to affix value and effective use of such time.

The different leadership perspectives resulting from this study confirm that principals make a difference in meeting expectations for students with disabilities (Leithwood et al., 2004; Marzano, 2005; Mendels, 2012). Although all groups in this study achieved above average Gap Closure scores despite different leadership perspectives, the manner in which the principals enact their leadership varies and suggests implications for how they go about creating the climate and environment in

which staff and students exist. Given the multitude of priorities and the various influences at play as illustrated in the analysis of these results, it does appear that intersectionality, or how all influences come together to impact the performance of students with disabilities, potentially explains why some schools have produced better results than others and why the disparity of outcomes continues (Garcia & Ortiz, 2013). As a result, this research contributes to a previously less-examined understanding of the invisible influence of leadership and prioritized decision-making (Camburn et al., 2010; Iachini et al., 2016).

Research Question 3

What impact do leadership practices/decisions have on gap closure for students with disabilities? Unfortunately, the nature of the design of this study combined with the imprecision of Gap Closure rankings seemed to prevent any confidence in responding to this statement. What was observed across the information compiled and reviewed in this research was that the Empowering Principals all had Gap Closure scores that were above average, except for one and that person was in their first year of leadership in that particular school. The above-average Gap Closure scores held true for the Empowering Principals across district typology, school grade levels, and overall achievement results. Despite the seemingly positive leadership practices manifesting in the Empowering group, the results of this research suggest that leadership practices can manifest in several different ways (i.e., Constrained or Pragmatic) and still achieve effective Gap Closing scores. Principals aligning with the Constrained leadership practices also had buildings that earned above average to average Gap Closure scores and one school that earned an F.

The Pragmatic group had two schools that had earned above average scores (A and B) and one that had most recently received an F.

What this research does support is that beliefs do influence leadership behaviors. In support of existing literature (Bozkurt, 2009; DiPaola et al., 2004; Mendels, 2012), this suggests that principal leadership could be leveraged to contribute to the realization of improved outcomes through developing leadership in others, and setting the vision for change. Aside from content knowledge and skills as outlined in the preparation and practice standards, districts are encouraged to prioritize the examination of principal beliefs as one affordable and practical improvement strategy (Ishimaru & Galloway, 2014). The results of this research, when considered in light of the fact that principals are expected to set the vision, shape the culture, and grow the capacity of staff and students, implicates the principal as responsible for creating the environment in which the hard work of educating students with disabilities is performed. While the various approaches achieve above average Gap Closure scores, the perceptions of the settings in which those efforts take place appear to present differently, suggesting the bigger impact is on the entire school environment and not just on practices for students with disabilities.

Research Question 4

What principal beliefs related to mindset are associated with improved Gap Closure for students with disabilities? The initial design of this project reflected a curiosity to see if principals in schools with lower Gap Closure scores would naturally sort into distinct group or group(s). The resulting analysis did not differentiate in that manner, which is not surprising in retrospect. Q-methodology is lends itself to identifying

patterns among viewpoints and not categorical distinction according to established criteria (Watts & Stenner, 2012).

In the process of purposive sampling to ensure representation of district typologies and building levels, ensuring a sufficient number of principals from schools with below average Gap Closure scores became challenging. Perhaps this question would have been able to be analyzed if the participants had been selected on the gap Closure scores alone. A larger number of sorts from both above and below average Gap Closure scores may have provided enough sorts with weighted averages large enough to identify as factors to enable this analysis.

Another reason that may have prevented analysis of this question is that most principals aligned themselves with a more growth-mindset orientation so there was no way to compare to those that endorsed a fixed-mindset orientation. Given the diversity of emergent leadership practices as discovered by the three factors, and the lack of comparison from a fixed-mindset orientation from principals surveyed, this research question remains to be seen.

Implications

Principals today need to be adaptive in responding to the increasing diversity and needs of students, including those with disabilities. The PSEL and NELP standards guiding the practice and development of the principal profession articulate the importance of the principal in setting the mission and vision, shaping the culture, establishing relationships, and collaboratively leading for the benefit of students (Coviello & DeMatthews, 2016; DeMatthews, 2014). Furthermore, it is the principal

who translates the legislative mandates and expectations into action in school buildings (Fedigan, 2018). The findings from this study confirm that principals demonstrate distinguishable leadership practices and varying degrees of mindset orientations. Although each type of principal leadership style identified in this research (Empowering, Constrained, or Pragmatic) endorsed a more growth-oriented mindset, the groups presented with very different perspectives on leadership practices and priorities. Findings suggest that internal perspectives or beliefs do manifest in leadership behaviors and approaches. As such, districts would be advised to consider alignment of building and district needs when selecting and hiring principals. Principals fulfill a critical role in setting the tone and climate of the building.

Results from this research aligned with previous research in suggesting that efficacy, values, and mindset influence decision-making (Brooks & Goldstein, 2008; Collie & Martin, 2017; Dev & Haynes, 2015; Hattie & Yates, 2014; Hintz, 2017; Lombardo-Graves, 2017; Robinson, 2014). Similar to Beziat, Bynum, and Klash (2017), the results of this study support a general growth-mindset orientation among principals, which tends to be overlooked when discussing leadership practices. This research adds to the existing field of literature on the impact of such internal factors.

Clearly, there are different practices in place among the Empowering Principals' school settings than in the Constrained or Pragmatic groups. Additional conversation regarding the impact of mindset beliefs could contribute to increased outcomes for students with disabilities.

Limitations

Results from this study represent the viewpoints and emergent factors from the group of 20 Ohio public school principals who participated in this study. Q Methodology was intentionally selected as the methodology because this mixed methods approach allows for investigation into subjective viewpoints though the use of a standardized process to prioritize statements, thereby reflecting personal perspectives and values relative to others. As a methodology, Q-sorts are not intended to result in findings attempting to generalize to the larger population (Watts & Stenner, 2012, p. 72). While Brown (1980) asserted that Q methodology seeks to establish viewpoints, and that task was accomplished with this study, others may critique this study based on the limited number of participants compared to the larger pool of public school principals across the state. Watts and Stenner (2012) acknowledged this potential, reminded researchers of the difference between R and Q factor analysis, and supported the use of Q methodology as a means of gaining understanding to perspectives.

One other potential limitation to this research is introduced when considering researcher bias. Despite using trained research facilitators and a scripted prompt during the Q-sorts, several of the principals were acquainted with or knew the researcher conducting the actual sorts. While this influence was likely reduced by the forced sort and standardized ranking process, it cannot be eliminated. Some of the participants expressed concern over their score or their feeling that there was a right answer. These statements could imply that the participants' perception of the researcher's expectations may have influenced the placement of cards within the sort.

Both quantitative and qualitative data were analyzed and interpreted by the researcher. Q methodology, as a mixed method, relies to some degree on subjective interpretation and the construction of meaning through the patterns that emerge. Due to this subjective influence, the potential for bias exists. Precautions were taken during analysis to minimize this influence through the incorporation of direct statements to support assigned meaning of the quantitative themes.

Although this study was designed to investigate principal beliefs about leadership practices supporting students with disabilities, many principals commented that it was hard to prioritize some of the cards because their personal beliefs were different than that of the current practice among staff or practices in their buildings. One limitation of this methodology is that cross-checks for accuracy of actual leadership practices were not included. The ability to verify that the beliefs espoused in the sort process are manifest in the school culture was lacking. Due to the complex and dynamic interaction of social, political, bureaucratic, and personal influences existing in public education currently, it is challenging to isolate, identify, and implement precise leadership beliefs and skills that would be most influential in improving outcomes for students with disabilities.

In an effort to obtain a broad and comprehensive representation of a unidimensional construct of mindset, and to ensure a connection to leadership practices, the development of the Q sample included feedback from the initial concourse development survey and from the review of the literature. Statements from the literature review were based on Dweck's Mindset Inventory (Dweck, 2016) and the What's My School Mindset Survey (WMSMS) (Hanson, Bangert, & Ruff, 2016). Statements from the WMSMS made up a larger portion of the Q sample. Statements from the initial

survey represented comments taken from the open-ended response questions. Priority in Q sample design was intentionally placed on ensuring a singular focus on growth mindset leadership practices. Such a targeted view may have overly narrowed the range of responses in the sample. A review of the resulting factor analysis data suggested that perhaps the Q sample produced the heavily loaded Empowering Principals group because it was too focused on growth mindset-related leadership practices. Reducing the number of items from the WMSMS inventory and increasing selected comments obtained directly from the initial survey may have provided broader representation of principal perspectives. More diversity and broader differentiation within the Q sample would likely have resulted in the ability to identify more nuanced factor groups.

Reflection on the findings also revealed a challenge in the use of the Gap Closure score as an outcome measure. The letter grades of A through F with potential demotions as penalties on districts distort the real measure. Gap Closure scores are also based on test-based accountability snapshots which are likely not the most meaningful metric for evaluating achievement, access, or outcomes for students with disabilities. A more precise measure, if devised, could allow for better differentiation and analysis when comparing leadership practice perspectives as they emerged from the Q-sorts.

Recommendations for Future Research

Given the intense focus on accountability and improved outcomes for students with disabilities, additional research on the significant role of the principal is critical. Every school has a principal. If principals are able to increase their knowledge, confidence, and understanding related to leading for improved outcomes for students with disabilities, the capacity to affect change is ripe for improvement without the need to add

staff or significantly restructure. In fact, principal perspectives on leadership practices as influenced by beliefs may matter more in creating a school culture than professional background or previous experiences. The opportunity to leverage the role of the principal to improve the culture and efficacy for both staff and students could lead to significant benefits for students, especially those with disabilities.

The results of this study would be increasingly meaningful when compared to similar studies with other principals from various parts of the state to see if similar or additional leadership perspectives emerge. Replications over time would also prove interesting since each Q-sort essentially captures a snapshot in time. Repeated opportunities to examine how the same leaders change perspectives across different phases of their career could be used to inform targeted professional development. Targeted professional development could maximize leadership capacity and sustain or even increase efficacy and leadership effectiveness. Increased longevity for principals and the staff in their buildings would be one potential benefit from tailored professional development.

Finally, future research should focus on finding a more precise means by which to measure the outcome or impact for students with disabilities. Theoretical research findings are interesting but will not really matter much unless findings can be linked to actual improvement in student outcomes. One suggestion would be to validate the perspective of the principal by cross-checking the resulting Q-sort viewpoint with similar perspective checks from staff, students, or parents of the building. This would provide a different kind of gap analysis by which to further examine and refine leadership and instructional practices.

Conclusion

The internal beliefs and perspectives of 20 public school principals were examined in order to better understand how principals can impact improved outcomes for students with disabilities. As primary decision-makers and vision setters for their buildings, principals are in a position of significant influence to affect change. The results of this research indicate the existence of various leadership approaches among Ohio's public school principals. Although most principals demonstrated more of a growth-mindset orientation, there were significant differences in leadership practices among the participants in this study. Overall, three representative perspectives emerged. Empowering Principals endorsed leadership practices centered on shared leadership, collaboration, adaptability, and efficacy. Constrained Principals communicated a sense of increased accountability pressures, difficulties in managing or overcoming operational barriers, and supporting teachers in differentiating to meet student needs. Pragmatic Principals communicated a viewpoint that was more reactive and managerial than the others. Principals in this group described their critical role in dealing with attendance and discipline issues. Also included in this perspective was a defeated and perpetuated cycle of low expectations and exemptions. Left unaddressed, leadership practices that enable or fail to alter these practices will result in the persistence of the gap in outcomes for students.

Increased understanding of how leadership practices manifest provides opportunities to reflect, address, and leverage focused efforts for improvement. The role of the principal represents significant opportunity to set the vision, expectations, and practices that will impact all students, including those with disabilities. Principals need

to be aware of how their personal beliefs and viewpoints influence decision-making and resource allocation. With limited time and financial resources, districts would be wise to ensure an understanding of the values and perspectives of candidates when recruiting and hiring principals. Targeted professional development efforts aligned to expand perspectives to better meet school and district needs could be one practical step toward systemic improvement. The application of principal preparation and practice standards could be further enhanced and more effective if considered in light of personal beliefs.

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APPENDIX A

CONCOURSE DEVELOPMENT SURVEY

Principal Perceptions of Students with Disabilities and Inclusive Leadership Practices

Welcome to My Survey

Dr. Karen H. Larwin and Ms. Stephanie Morgan are conducting a study with the following survey. Your participation is greatly appreciated.

This survey is being used to understand your perceptions about students with disabilities, and their educational experiences. The benefits of the study may assist school districts in serving students with disabilities by impacting the preparation and knowledge of building administrators.

This survey will be used to develop a concourse for use in Q Sort methodology which is a research design used to gain understanding of respondent perspectives related to the topic of investigation. This type of survey provides the researcher with the opportunity to obtain a better understanding of principal perspectives about students with disabilities and the instructional leadership decisions employed in special education service delivery.

You will not be harmed by participation in this study. Participation is voluntary. Your identity will not be collected. Respondents must be at least 18 years old. Submission of this survey implies your consent. If you have questions concerning this research, contact Dr. Karen Larwin at (330)941-[illegible] or Stephanie Morgan at 330-[illegible]@student.ysu.edu.

No personally identifiable information (like the name or email of the respondent, address of the school) will be collected through the use of this survey. Any surveys that might have inadvertently included names or other identifying information will be immediately destroyed. Data will be securely kept in a password protected cloud space.

If you have any questions about your rights as a participant in this research project, you may contact the Office of Research at Youngstown State University at (330-941-2377) or YSUIRB@ysu.edu.

Demographic Information

* 1, What grade levels are served in your building?

- ☐ PreK
- ☐ Kindergarten
- ☐ First
- ☐ Second
- ☐ Third
- ☐ Fourth
- ☐ Fifth
- ☐ Sixth
- ☐ Seventh
- ☐ Eighth
- ☐ Ninth
- ☐ Tenth
- ☐ Eleventh
- ☐ Twelfth

* 2, How would you categorize your school building?

- ◯ Urban/First-Ring
- ◯ Suburban
- ◯ Rural

* 3, Please select your school building's most recent Ohio Local Report Card ratings in Value Added for Students with Disabilities:

- ◯ A
- ◯ B
- ◯ C
- ◯ D
- ◯ F
- ◯ NR

* 4, Please select your school building's most recent Ohio Local Report Card ratings in Gap Closure for Students with Disabilities:

- ◯ A
- ◯ B
- ◯ C
- ◯ D
- ◯ F
- ◯ NR

* 5, How many years of experience do you have in educational administration/leadership?

- ◯ 0-5 years
- ◯ 6-10 years
- ◯ 11-15 years
- ◯ 15-20 years
- ◯ 21 years or more

* 6, Please indicate your area(s) of licensure, Check any that apply.

- [ ] General Education Teacher – Core Academic Content Area (ELA, Math, Science, Social Studies, World Language)
- [ ] General Education Teacher – Special Area (Art, PE, Music, Drama, Technology)
- [ ] Special Education Teacher (Intervention Specialist/Tutor)
- [ ] Related Service Provider (SLP, OT, PT, School Psychologist, Transition Coordinator)
- [ ] Endorsement area (Reading, TESOL, Gifted)
- [ ] Principal (any grade level)
- [ ] Superintendent
- [ ] Pupil Personnel Services
- [ ] Other Administrative license
- [ ] Other (please specify)

* 7. Do you, a close friend, relative, or regular colleague have an identified disability or impairment?

- ◯ Yes
- ◯ No

* 8, Please indicate the amount of Special Education courses taken or licensure related to Special Education

- ◯ One course in special education
- ◯ 2-5 courses in special education
- ◯ 6+ courses in special education
- ◯ Minor in special education/related service field
- ◯ Major/undergraduate degree in special education/related service field
- ◯ Graduate/advanced degree in special education/related service field or pupil services
- ◯ Current or expired special education, related or pupil service license from the state of Ohio

Principal Perception Statements

Please indicate the degree to which you agree or disagree with each statement based upon consideration of students with disabilities within your school building.

9. I am responsible for making the school more inclusive.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

* 10. Inclusion (the participation of students with special needs in regular classrooms) is a benefit for all students.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

* 11. I believe inclusion provides students with special needs the opportunity to reveal their learning potential.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

* 12. Students with special needs can have greater success in segregated classrooms.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

* 13. Including students with special needs in the regular classroom takes away from the education of other students.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

* 14. Our staff members regularly collaborate with each other.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

* 15. There are formal as well as informal opportunities for staff to resolve concerns over students by drawing on each other's expertise.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree

* 16. I do not have sufficient resources to support instruction of the students in my school.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 17. There is open and fair distribution of resources in the school.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 18. Materials are appropriately adapted for students with special needs (e.g., large print or Braille).

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 19. The use of multiple teaching approaches tends to interfere with the learning of students.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 20. The curriculum materials used at my school reflect the background and experience of all students.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 21. I encourage all students to have high aspirations about their learning,

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 22. I encourage students to explore views which are different from their own.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 23. My professional development planning is focused on responding to student diversity.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 24. My school needs more professional development activities in the area of inclusive education.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 25. I have attended adequate professional development activities (courses, workshops) outside of my school in order to develop inclusive practice.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 26. I have engaged in meaningful informal professional development (internet chat, discussions with colleagues) in order to develop inclusive practice.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 27. I have sought out resources (books, articles) in order to develop inclusive practice.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 28. Developing a supportive school community is as important as raising academic achievement.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 29. The school is welcoming to all students including those with special needs.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 30. The special needs policies in my school are aimed at increasing learning and participation.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 31. The special needs policies in my school are not aimed at minimizing school exclusion.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 32. Students with disabilities have a certain amount of intelligence, and you can't really do much to change it.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 33. Intelligence of students with disabilities is something that can't be changed very much.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 34, No matter who you are, you can significantly change your intelligence level.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 35. To be honest, students with disabilities can't really change how intelligent they are.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 36. You can always substantially change how intelligent students with disabilities are.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 37. Students with disabilities can learn new things, but they can't really change their basic intelligence.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 38. No matter how much intelligence students with disabilities have, it can always change quite a bit.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 39, Students with disabilities have a certain amount of talent, and not much can be done to change it,

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 40. Students with disabilities' talent in an area is something about them that can't change very much.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 41. No matter who you are, you can significantly change your level of talent.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 42. To be honest, students with disabilities can't really change how much talent they have.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 43. Students with disabilities can always substantially change how much talent they have.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 44. Students with disabilities can learn new things, but they can't really change their basic level of talent.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

* 45. No matter how much talent students with disabilities have, it can always be changed quite a bit.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Open-ended Response Questions

Please provide your honest, anonymous feedback in response to the each question below. Given the research interest in your perspective, please understand there is no right or wrong answers, rather a reflective description of your experience is most appreciated.

* 46. Relative to the inclusion of students with disabilities in the continuum of least restrictive environments in public schools, please describe the leadership qualities that you feel are most effective for you as a leader?

* 47. What practices/decision-making strategies do you rely on most regularly as an education leader in supporting students with identified disabilities in your building?

* 48. What challenges does the inclusion of students with identified disabilities in the least restrictive environment present for you as an educational leader and/or for your school building?

* 49. What benefits does the inclusion of students with identified disabilities in the least restrictive environment present for you as an educational leader and/or for your school building?

* 50. Please describe how you encourage your staff and students to take risks, be creative in trying new approaches to teaching and learning, and overcome the fear of failure in providing services to students with identified disabilities?

Thank you for taking the time to complete this survey and share your perspective as a public school principal in Ohio. Your participation is greatly appreciated.

APPENDIX B

TABLE B1: PRINCIPAL AND SCHOOL PERFORMANCE DETAILS

Participant and School Performance Details

Factor Group	Years of Principal Experience	School Level	% SWD***	SWD in GenEd ≥80% Target (>64%) Met?***	District Typology*	SWD Gap Closure Rating**
1: Empowering Principals	2	Elementary	17-19%	No	Urban	Below
	3	High	14-16%	Yes	Rural	Above
	6	**Elementary**	**11-13%**	**Yes**	**Suburban**	**Above**
	6	Middle	11-13%	Yes	Above	Above
	7	High	11-13%	Yes	Suburban	Above
	10	Elementary	14-16%	Yes	Rural	Above
	10	Middle	17-19%	Yes	Rural	Above
	13	Elementary	≤10%	Yes	Rural	Above
	21	**Elementary**	**14-16%**	**No**	**Suburban**	**Above**
2: Constrained Principals	**1**	**Middle**	**17-19%**	**No**	**Urban**	**Below**
	5	**Elementary**	**14-16%**	**No**	**Suburban**	**Above**
	4	Middle	≤10%	No	Suburban	Above
	5	**High**	**11-13%**	**Yes**	**Rural**	**Average**
	10	Middle	11-13%	Yes	Rural	Above
	10	High	14-16%	No	Suburban	Above
3: Pragmatic Principals	2	Middle	14-16%	Yes	Urban	Above
	5	Middle	14-16%	No	Suburban	Above
	6	High	14-16%	Yes	Urban	Below
Unfactored Principals	1	High	NR	NR	Urban	NR
	5	High	11-13%	Yes	Rural	Average

Note: Bold print indicates previous experience in special education. NR = Not Reported. Columns with (*) as reported in Ohio Department of Education. (2013). Typology of Ohio school districts. Retrieved from http://education.ohio.gov/Topics/Data/Frequently-Requested-Data/Typology-of-Ohio-School-Districts. Columns with (**) as reported in Ohio Department of Education. (2018c). 2017-2018 Ohio School Report Cards Data Spreadsheets. Retrieved from http://education.ohio.gov/Topics/Data/Report-Card-Resources. Columns with (***) as reported in Ohio Department of Education. (2018d). 2017-2018 Special Education Profile (Based on 2016-17 Data). Retrieved from https://www.edresourcesohio.org/oec/publicProfileSummary.php

APPENDIX C

FULL CENTROID ANALYSIS WITH VARIMAX ROTATION RESULTS FOR 3 FACTOR STRUCTURE

PQMethod2.35 Morgan Principal Mindsets PAGE 1
Path and Project Name: C:\PQMethod\projects/Morganse Mar 18 19

Correlation Matrix Between Sorts

SORTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1 A1FEAA	100	58	85	75	47	76	50	73	64	41	56	23	16	26	64	56	46	54	62	58
2 B2FECA	58	100	54	63	59	52	60	61	31	56	43	34	21	36	36	49	43	32	48	54
3 C5FECA	85	54	100	71	54	73	49	67	67	44	52	26	27	29	68	64	48	56	62	52
4 D6FEAA	75	63	71	100	49	75	70	65	59	50	51	34	28	47	66	71	50	52	65	47
5 E6MEAA	47	59	54	49	100	47	59	45	25	69	43	40	59	24	49	49	45	43	58	27
6 F7FENF	76	52	73	75	47	100	57	67	53	32	67	47	20	30	58	69	42	55	66	41
7 G3MMAB	50	60	49	70	59	57	100	46	28	66	46	24	36	47	41	63	61	43	55	23
8 H4FMAA	73	61	67	65	45	67	46	100	57	37	56	50	4	27	49	48	30	44	52	62
9 I5MMAA	64	31	67	59	25	53	28	57	100	11	33	10	3	33	52	39	37	49	45	34
10 J6MMBA	41	56	44	50	69	32	66	37	11	100	35	34	47	33	38	37	35	42	39	29
11 K6FMAA	56	43	52	51	43	67	46	56	33	35	100	62	1	27	64	55	45	61	41	31
12 L7MMBB	23	34	26	34	40	47	24	50	10	34	62	100	2	16	51	26	-5	46	26	30
13 M8FMFF	16	21	27	28	59	20	36	4	3	47	1	2	100	25	26	24	27	31	47	-6
14 N2FHNC	26	36	29	47	24	30	47	27	33	33	27	16	25	100	44	29	19	26	41	35
15 O3FHCC	64	36	68	66	49	58	41	49	52	38	64	51	26	44	100	44	43	65	57	38
16 P5FHFB	56	49	64	71	49	69	63	48	39	37	55	26	24	29	44	100	43	43	59	18
17 Q6MHFB	46	43	48	50	45	42	61	30	37	35	45	-5	27	19	43	43	100	32	40	-4
18 R7MHFF	54	32	56	52	43	55	43	44	49	42	61	46	31	26	65	43	32	100	38	23
19 SJMTC	62	48	62	65	58	66	55	52	45	39	41	26	47	41	57	59	40	38	100	32
20 T4MHDB	58	54	52	47	27	41	23	62	34	29	31	30	-6	35	38	18	-4	23	32	100

PQMethod2.35 Morgan Principal Mindsets PAGE 2
Path and Project Name: C:\PQMethod\projects/Morganse Mar 18 19

Unrotated Factor Matrix

	Factors		
	1	2	3
SORTS			
1 A1FEAA	0.8313	-0.2502	0.2603
2 B2FECA	0.7070	0.1349	0.1234
3 C5FECA	0.8411	-0.1648	0.1575
4 D6FEAA	0.8745	0.0421	0.2411

5	E6MEAA	0.7177	0.3219	-0.2878
6	F7FENF	0.8201	-0.1706	0.1166
7	G3MMAB	0.7485	0.4679	0.0957
8	H4FMAA	0.7540	-0.3050	0.1597
9	I5MMAA	0.5848	-0.2788	0.3199
10	J6MMBA	0.6237	0.3659	-0.2381
11	K6FMAA	0.6905	-0.2538	-0.1647
12	L7MMBB	0.4721	-0.3085	-0.4949
13	M8FMFF	0.3607	0.5219	-0.2271
14	N2FHNC	0.4613	0.1060	0.0297
15	O3FHCC	0.7606	-0.1952	-0.1828
16	P5FHFB	0.7032	0.0926	0.1290
17	Q6MHFB	0.5310	0.2185	0.0597
18	R7MHFF	0.6714	-0.2100	-0.3435
19	SJMTC	0.7390	0.1282	0.0743
20	T4MHDB	0.4939	-0.2631	0.1720
	Eigenvalues	9.3488	1.4334	0.9872
	% expl.Var.	47	7	5

Cumulative Communalities Matrix

		Factors 1 Thru		
		1	2	3
SORTS				
1	A1FEAA	0.6910	0.7536	0.8214
2	B2FECA	0.4999	0.5181	0.5333
3	C5FECA	0.7075	0.7346	0.7594
4	D6FEAA	0.7647	0.7665	0.8246
5	E6MEAA	0.5151	0.6187	0.7015
6	F7FENF	0.6725	0.7016	0.7152
7	G3MMAB	0.5602	0.7791	0.7883
8	H4FMAA	0.5685	0.6616	0.6871
9	I5MMAA	0.3420	0.4197	0.5221
10	J6MMBA	0.3890	0.5229	0.5795
11	K6FMAA	0.4768	0.5412	0.5683
12	L7MMBB	0.2229	0.3180	0.5629
13	M8FMFF	0.1301	0.4025	0.4541
14	N2FHNC	0.2128	0.2240	0.2249
15	O3FHCC	0.5785	0.6166	0.6500

16 P5FHFB	0.4945	0.5031	0.5197
17 Q6MHFB	0.2820	0.3297	0.3333
18 R7MHFF	0.4508	0.4949	0.6129
19 SJMTC	0.5462	0.5626	0.5682
20 T4MHDB	0.2439	0.3132	0.3427
cum% expl.Var.	47	54	59

Factor Matrix with an X Indicating a Defining Sort

	Loadings		
QSORT	1	2	3
1 A1FEAA	0.8352X	0.2389	0.2584
2 B2FECA	0.5167X	0.4972	0.1385
3 C5FECA	0.7473X	0.3291	0.3045
4 D6FEAA	0.7405X	0.5011	0.1586
5 E6MEAA	0.2051	0.7172X	0.3808
6 F7FENF	0.7103X	0.3187	0.3304
7 G3MMAB	0.3999	0.7923X	0.0261
8 H4FMAA	0.7420X	0.1661	0.3300
9 I5MMAA	0.7094X	0.0644	0.1213
10 J6MMBA	0.1521	0.6905X	0.2822
11 K6FMAA	0.4833	0.2210	0.5347X
12 L7MMBB	0.1536	0.1026	0.7272X
13 M8FMFF	-0.0860	0.6620X	0.0921
14 N2FHNC	0.2997	0.3467X	0.1220
15 O3FHCC	0.4987	0.3113	0.5516
16 P5FHFB	0.5338X	0.4602	0.1517
17 Q6MHFB	0.3228	0.4725X	0.0765
18 R7MHFF	0.3457	0.2729	0.6472X
19 SJMTC	0.5123	0.5180	0.1936
20 T4MHDB	0.5510X	0.0476	0.1921
% expl.Var.	28	20	12

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Free Distribution Data Results

QSORT	MEAN	ST.DEV.
1 A1FEAA	0.000	2.202
2 B2FECA	0.000	2.202
3 C5FECA	0.000	2.202
4 D6FEAA	0.000	2.202
5 E6MEAA	0.000	2.202
6 F7FENF	0.000	2.202
7 G3MMAB	0.000	2.202
8 H4FMAA	0.000	2.202
9 I5MMAA	0.000	2.202
10 J6MMBA	0.000	2.202
11 K6FMAA	0.000	2.202
12 L7MMBB	0.000	2.202
13 M8FMFF	0.000	2.202
14 N2FHNC	0.000	2.202
15 O3FHCC	0.000	2.202
16 P5FHFB	0.000	2.202
17 Q6MHFB	0.000	2.202
18 R7MHFF	0.000	2.202
19 SJMTC	0.000	2.202
20 T4MHDB	0.000	2.202

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Factor Scores with Corresponding Ranks

		Factors					
No.	Statement	No.	1		2		3
1	Dealing with emergencies and other unplanned circumsta	1	-0.02	19	-0.16	17	0.44 12
2	Instructional expectations made clear to teachers in a	2	1.19	5	0.86	9	0.89 5
3	Staff believe they can help students meet learning goa	3	1.91	1	1.25	4	0.24 16
4	Teachers invited to give critical feedback on admin pr	4	0.16	15	-0.18	20	-0.30 21
5	Equitable division of responsibility prep/modifying ma	5	0.19	13	-0.18	18	0.85 6
6	Working with students and discipline or attendance iss	6	-0.03	20	-0.52	23	0.96 4
7	Maintaining appropriate continuum of services is impra	7	-1.51	33	-1.24	30	-1.27 31

8	SWD better served in small group settings with slower	8	-0.68	24	0.74	11	-1.57	33
9	Fairness/balance needs SWD w/ other students is a chal	9	-0.58	23	0.55	13	0.14	17
10	Operational barriers prevent staff from supporting SWD	10	-1.47	32	1.00	7	-1.42	32
11	Teachers protect or guard resources from one another	11	-1.46	31	-1.71	34	-0.66	25
12	Systems allow teachers direct involve in site decision	12	1.05	6	1.00	6	-0.36	23
13	Intelligence is something school staff cannot change m	13	-0.98	28	-1.40	31	-1.98	34
14	Communicate sincere belief staff can develop teaching	14	1.40	2	0.78	10	0.64	8
15	Students disruptive behavior regularly cause signif is	15	-0.78	25	-0.18	19	0.60	11
16	Exclusive cliques or camps within facility	16	-0.79	27	-1.54	32	0.31	15
17	Staff participate in leadership opport through school	17	1.35	3	-0.26	21	-0.97	27
18	Examination of standard test results teachers class im	18	0.16	14	0.46	15	0.60	11
19	Staff resistance prevent effectively supporting studen	19	-1.34	29	-1.01	27	-0.24	20
20	Staff ideas on/off table safely in collaborative plann	20	1.03	7	1.52	1	0.41	14
21	Completing routine paperwork is important	21	-0.42	22	-0.35	22	-1.20	30
22	Provide teachers w/ targeted PD to professional needs/	22	0.78	10	0.31	16	0.67	7
23	Us vs. them feeling between general and special educat	23	-1.45	30	-1.58	33	-1.20	29
24	Staff work together to design plans for teacher develo	24	0.66	12	-0.78	25	0.12	18
25	Staff members reluctant to work with struggling studen	25	-1.63	34	-0.83	26	-1.14	28
26	Time is provided in the workday for co-planning	26	0.91	9	1.22	5	1.86	2
27	Providing differentiated supports to students is a cha	27	-0.78	26	1.46	3	-0.43	24
28	Accountability for learning demonstrated by standard a	28	0.10	17	-0.56	24	0.06	19
29	Teachers provided w/feedback on practice out of formal	29	0.68	11	0.71	12	0.41	13
30	Monitoring public spaces is important	30	-0.10	21	-1.19	29	-0.34	22
31	Teacher collab sev/month on instruction topics/student	31	1.29	4	1.48	2	2.16	1
32	Communication about decision-making is provided to tea	32	1.02	8	0.97	8	0.60	11
33	Troubleshooting school improvement efforts	33	0.12	16	0.47	14	1.79	3
34	Teachers observe one another and give feedback on BP	34	0.02	18	-1.13	28	-0.67	26

Correlations Between Factor Scores

	1	2	3
1	1.0000	0.6027	0.5883
2	0.6027	1.0000	0.4645
3	0.5883	0.4645	1.0000

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Factor Scores -- For Factor 1

No.	Statement	No.	Z-SCORES
3	Staff believe they can help students meet learning goals	3	1.913
14	Communicate sincere belief staff can develop teaching skills	14	1.398
17	Staff participate in leadership opport through school day	17	1.349
31	Teacher collab sev/month on instruction topics/student work	31	1.293
2	Instructional expectations made clear to teachers in advance	2	1.185
12	Systems allow teachers direct involve in site decision-makin	12	1.053
20	Staff ideas on/off table safely in collaborative planning	20	1.025
32	Communication about decision-making is provided to teachers	32	1.017
26	Time is provided in the workday for co-planning	26	0.909
22	Provide teachers w/ targeted PD to professional needs/goals	22	0.778
29	Teachers provided w/feedback on practice out of formal evals	29	0.680
24	Staff work together to design plans for teacher development	24	0.657
5	Equitable division of responsibility prep/modifying material	5	0.188
18	Examination of standard test results teachers class import	18	0.160
4	Teachers invited to give critical feedback on admin practice	4	0.156
33	Troubleshooting school improvement efforts	33	0.116
28	Accountability for learning demonstrated by standard assess	28	0.098
34	Teachers observe one another and give feedback on BP	34	0.024
1	Dealing with emergencies and other unplanned circumstances	1	-0.020
6	Working with students and discipline or attendance issues	6	-0.031
30	Monitoring public spaces is important	30	-0.102
21	Completing routine paperwork is important	21	-0.416
9	Fairness/balance needs SWD w/ other students is a challenge	9	-0.576
8	SWD better served in small group settings with slower pace	8	-0.679
15	Students disruptive behavior regularly cause signif issues	15	-0.780
27	Providing differentiated supports to students is a challenge	27	-0.783
16	Exclusive cliques or camps within facility	16	-0.791
13	Intelligence is something school staff cannot change much	13	-0.975
19	Staff resistance prevent effectively supporting students	19	-1.336
23	Us vs. them feeling between general and special education	23	-1.446
11	Teachers protect or guard resources from one another	11	-1.461
10	Operational barriers prevent staff from supporting SWD	10	-1.468

7	Maintaining appropriate continuum of services is impractical	7	-1.507
25	Staff members reluctant to work with struggling students	25	-1.628

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Factor Scores -- For Factor 2

No.	Statement	No.	Z-SCORES
20	Staff ideas on/off table safely in collaborative planning	20	1.524
31	Teacher collab sev/month on instruction topics/student work	31	1.484
27	Providing differentiated supports to students is a challenge	27	1.464
3	Staff believe they can help students meet learning goals	3	1.245
26	Time is provided in the workday for co-planning	26	1.219
12	Systems allow teachers direct involve in site decision-makin	12	1.005
10	Operational barriers prevent staff from supporting SWD	10	0.996
32	Communication about decision-making is provided to teachers	32	0.967
2	Instructional expectations made clear to teachers in advance	2	0.861
14	Communicate sincere belief staff can develop teaching skills	14	0.780
8	SWD better served in small group settings with slower pace	8	0.736
29	Teachers provided w/feedback on practice out of formal evals	29	0.710
9	Fairness/balance needs SWD w/ other students is a challenge	9	0.550
33	Troubleshooting school improvement efforts	33	0.466
18	Examination of standard test results teachers class import	18	0.457
22	Provide teachers w/ targeted PD to professional needs/goals	22	0.312
1	Dealing with emergencies and other unplanned circumstances	1	-0.163
5	Equitable division of responsibility prep/modifying material	5	-0.178
15	Students disruptive behavior regularly cause signif issues	15	-0.180
4	Teachers invited to give critical feedback on admin practice	4	-0.181
17	Staff participate in leadership opport through school day	17	-0.257
21	Completing routine paperwork is important	21	-0.352
6	Working with students and discipline or attendance issues	6	-0.517
28	Accountability for learning demonstrated by standard assess	28	-0.563
24	Staff work together to design plans for teacher development	24	-0.781
25	Staff members reluctant to work with struggling students	25	-0.828
19	Staff resistance prevent effectively supporting students	19	-1.012
34	Teachers observe one another and give feedback on BP	34	-1.127
30	Monitoring public spaces is important	30	-1.185
7	Maintaining appropriate continuum of services is impractical	7	-1.237

13	Intelligence is something school staff cannot change much	13	-1.396
16	Exclusive cliques or camps within facility	16	-1.537
23	Us vs. them feeling between general and special education	23	-1.576
11	Teachers protect or guard resources from one another	11	-1.708

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Factor Scores -- For Factor 3

No.	Statement	No.	Z-SCORES
31	Teacher collab sev/month on instruction topics/student work	31	2.157
26	Time is provided in the workday for co-planning	26	1.862
33	Troubleshooting school improvement efforts	33	1.794
6	Working with students and discipline or attendance issues	6	0.960
2	Instructional expectations made clear to teachers in advance	2	0.892
5	Equitable division of responsibility prep/modifying material	5	0.852
22	Provide teachers w/ targeted PD to professional needs/goals	22	0.665
14	Communicate sincere belief staff can develop teaching skills	14	0.640
15	Students disruptive behavior regularly cause signif issues	15	0.597
18	Examination of standard test results teachers class import	18	0.597
32	Communication about decision-making is provided to teachers	32	0.597
1	Dealing with emergencies and other unplanned circumstances	1	0.441
29	Teachers provided w/feedback on practice out of formal evals	29	0.414
20	Staff ideas on/off table safely in collaborative planning	20	0.406
16	Exclusive cliques or camps within facility	16	0.305
3	Staff believe they can help students meet learning goals	3	0.237
9	Fairness/balance needs SWD w/ other students is a challenge	9	0.136
24	Staff work together to design plans for teacher development	24	0.119
28	Accountability for learning demonstrated by standard assess	28	0.058
19	Staff resistance prevent effectively supporting students	19	-0.237
4	Teachers invited to give critical feedback on admin practice	4	-0.302
30	Monitoring public spaces is important	30	-0.335
12	Systems allow teachers direct involve in site decision-makin	12	-0.356
27	Providing differentiated supports to students is a challenge	27	-0.431
11	Teachers protect or guard resources from one another	11	-0.658
34	Teachers observe one another and give feedback on BP	34	-0.665
17	Staff participate in leadership opport through school day	17	-0.970
25	Staff members reluctant to work with struggling students	25	-1.136

23	Us vs. them feeling between general and special education	23	-1.197
21	Completing routine paperwork is important	21	-1.205
7	Maintaining appropriate continuum of services is impractical	7	-1.265
10	Operational barriers prevent staff from supporting SWD	10	-1.424
8	SWD better served in small group settings with slower pace	8	-1.568
13	Intelligence is something school staff cannot change much	13	-1.981

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Descending Array of Differences Between Factors 1 and 2

No.	Statement	No.	Type 1	Type 2	Difference
17	Staff participate in leadership opport through school day	17	1.349	-0.257	1.606
24	Staff work together to design plans for teacher development	24	0.657	-0.781	1.438
34	Teachers observe one another and give feedback on BP	34	0.024	-1.127	1.152
30	Monitoring public spaces is important	30	-0.102	-1.185	1.084
16	Exclusive cliques or camps within facility	16	-0.791	-1.537	0.746
3	Staff believe they can help students meet learning goals	3	1.913	1.245	0.667
28	Accountability for learning demonstrated by standard assess	28	0.098	-0.563	0.661
14	Communicate sincere belief staff can develop teaching skills	14	1.398	0.780	0.617
6	Working with students and discipline or attendance issues	6	-0.031	-0.517	0.486
22	Provide teachers w/ targeted PD to professional needs/goals	22	0.778	0.312	0.466
13	Intelligence is something school staff cannot change much	13	-0.975	-1.396	0.420
5	Equitable division of responsibility prep/modifying material	5	0.188	-0.178	0.366
4	Teachers invited to give critical feedback on admin practice	4	0.156	-0.181	0.337
2	Instructional expectations made clear to teachers in advance	2	1.185	0.861	0.324
11	Teachers protect or guard resources from one another	11	-1.461	-1.708	0.247
1	Dealing with emergencies and other unplanned circumstances	1	-0.020	-0.163	0.143
23	Us vs. them feeling between general and special education	23	-1.446	-1.576	0.129
32	Communication about decision-making is provided to teachers	32	1.017	0.967	0.049
12	Systems allow teachers direct involve in site decision-makin	12	1.053	1.005	0.049
29	Teachers provided w/feedback on practice out of formal evals	29	0.680	0.710	-0.030
21	Completing routine paperwork is important	21	-0.416	-0.352	-0.063
31	Teacher collab sev/month on instruction topics/student work	31	1.293	1.484	-0.191
7	Maintaining appropriate continuum of services is impractical	7	-1.507	-1.237	-0.271
18	Examination of standard test results teachers class import	18	0.160	0.457	-0.297
26	Time is provided in the workday for co-planning	26	0.909	1.219	-0.310
19	Staff resistance prevent effectively supporting students	19	-1.336	-1.012	-0.324
33	Troubleshooting school improvement efforts	33	0.116	0.466	-0.350

20	Staff ideas on/off table safely in collaborative planning	20	1.025	1.524	-0.499
15	Students disruptive behavior regularly cause signif issues	15	-0.780	-0.180	-0.600
25	Staff members reluctant to work with struggling students	25	-1.628	-0.828	-0.800
9	Fairness/balance needs SWD w/ other students is a challenge	9	-0.576	0.550	-1.126
8	SWD better served in small group settings with slower pace	8	-0.679	0.736	-1.416
27	Providing differentiated supports to students is a challenge	27	-0.783	1.464	-2.247
10	Operational barriers prevent staff from supporting SWD	10	-1.468	0.996	-2.464

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Descending Array of Differences Between Factors 1 and 3

No.	Statement	No.	Type 1	Type 3	Difference
17	Staff participate in leadership opport through school day	17	1.349	-0.970	2.319
3	Staff believe they can help students meet learning goals	3	1.913	0.237	1.676
12	Systems allow teachers direct involve in site decision-makin	12	1.053	-0.356	1.409
13	Intelligence is something school staff cannot change much	13	-0.975	-1.981	1.006
8	SWD better served in small group settings with slower pace	8	-0.679	-1.568	0.888
21	Completing routine paperwork is important	21	-0.416	-1.205	0.789
14	Communicate sincere belief staff can develop teaching skills	14	1.398	0.640	0.757
34	Teachers observe one another and give feedback on BP	34	0.024	-0.665	0.689
20	Staff ideas on/off table safely in collaborative planning	20	1.025	0.406	0.619
24	Staff work together to design plans for teacher development	24	0.657	0.119	0.538
4	Teachers invited to give critical feedback on admin practice	4	0.156	-0.302	0.458
32	Communication about decision-making is provided to teachers	32	1.017	0.597	0.419
2	Instructional expectations made clear to teachers in advance	2	1.185	0.892	0.293
29	Teachers provided w/feedback on practice out of formal evals	29	0.680	0.414	0.267
30	Monitoring public spaces is important	30	-0.102	-0.335	0.234
22	Provide teachers w/ targeted PD to professional needs/goals	22	0.778	0.665	0.112
28	Accountability for learning demonstrated by standard assess	28	0.098	0.058	0.040
10	Operational barriers prevent staff from supporting SWD	10	-1.468	-1.424	-0.044
7	Maintaining appropriate continuum of services is impractical	7	-1.507	-1.265	-0.242
23	Us vs. them feeling between general and special education	23	-1.446	-1.197	-0.249
27	Providing differentiated supports to students is a challenge	27	-0.783	-0.431	-0.352
18	Examination of standard test results teachers class import	18	0.160	0.597	-0.437
1	Dealing with emergencies and other unplanned circumstances	1	-0.020	0.441	-0.461
25	Staff members reluctant to work with struggling students	25	-1.628	-1.136	-0.492
5	Equitable division of responsibility prep/modifying material	5	0.188	0.852	-0.664
9	Fairness/balance needs SWD w/ other students is a challenge	9	-0.576	0.136	-0.712

11	Teachers protect or guard resources from one another	11	-1.461	-0.658	-0.803
31	Teacher collab sev/month on instruction topics/student work	31	1.293	2.157	-0.865
26	Time is provided in the workday for co-planning	26	0.909	1.862	-0.953
6	Working with students and discipline or attendance issues	6	-0.031	0.960	-0.991
16	Exclusive cliques or camps within facility	16	-0.791	0.305	-1.097
19	Staff resistance prevent effectively supporting students	19	-1.336	-0.237	-1.099
15	Students disruptive behavior regularly cause signif issues	15	-0.780	0.597	-1.377
33	Troubleshooting school improvement efforts	33	0.116	1.794	-1.679

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Descending Array of Differences Between Factors 2 and 3

No.	Statement	No.	Type 2	Type 3	Difference
10	Operational barriers prevent staff from supporting SWD	10	0.996	-1.424	2.420
8	SWD better served in small group settings with slower pace	8	0.736	-1.568	2.304
27	Providing differentiated supports to students is a challenge	27	1.464	-0.431	1.895
12	Systems allow teachers direct involve in site decision-makin	12	1.005	-0.356	1.361
20	Staff ideas on/off table safely in collaborative planning	20	1.524	0.406	1.118
3	Staff believe they can help students meet learning goals	3	1.245	0.237	1.008
21	Completing routine paperwork is important	21	-0.352	-1.205	0.852
17	Staff participate in leadership opport through school day	17	-0.257	-0.970	0.713
13	Intelligence is something school staff cannot change much	13	-1.396	-1.981	0.585
9	Fairness/balance needs SWD w/ other students is a challenge	9	0.550	0.136	0.414
32	Communication about decision-making is provided to teachers	32	0.967	0.597	0.370
25	Staff members reluctant to work with struggling students	25	-0.828	-1.136	0.309
29	Teachers provided w/feedback on practice out of formal evals	29	0.710	0.414	0.297
14	Communicate sincere belief staff can develop teaching skills	14	0.780	0.640	0.140
4	Teachers invited to give critical feedback on admin practice	4	-0.181	-0.302	0.122
7	Maintaining appropriate continuum of services is impractical	7	-1.237	-1.265	0.029
2	Instructional expectations made clear to teachers in advance	2	0.861	0.892	-0.031
18	Examination of standard test results teachers class import	18	0.457	0.597	-0.140
22	Provide teachers w/ targeted PD to professional needs/goals	22	0.312	0.665	-0.353
23	Us vs. them feeling between general and special education	23	-1.576	-1.197	-0.378
34	Teachers observe one another and give feedback on BP	34	-1.127	-0.665	-0.462
1	Dealing with emergencies and other unplanned circumstances	1	-0.163	0.441	-0.604
28	Accountability for learning demonstrated by standard assess	28	-0.563	0.058	-0.621
26	Time is provided in the workday for co-planning	26	1.219	1.862	-0.643
31	Teacher collab sev/month on instruction topics/student work	31	1.484	2.157	-0.674

19	Staff resistance prevent effectively supporting students	19	-1.012	-0.237	-0.775
15	Students disruptive behavior regularly cause signif issues	15	-0.180	0.597	-0.777
30	Monitoring public spaces is important	30	-1.185	-0.335	-0.850
24	Staff work together to design plans for teacher development	24	-0.781	0.119	-0.899
5	Equitable division of responsibility prep/modifying material	5	-0.178	0.852	-1.030
11	Teachers protect or guard resources from one another	11	-1.708	-0.658	-1.051
33	Troubleshooting school improvement efforts	33	0.466	1.794	-1.329
6	Working with students and discipline or attendance issues	6	-0.517	0.960	-1.477
16	Exclusive cliques or camps within facility	16	-1.537	0.305	-1.842

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Factor Q-Sort Values for Each Statement

Factor Arrays

No.	Statement	No.	1	2	3
1	Dealing with emergencies and other unplanned circumstances	1	0	0	1
2	Instructional expectations made clear to teachers in advance	2	3	2	3
3	Staff believe they can help students meet learning goals	3	4	3	0
4	Teachers invited to give critical feedback on admin practice	4	0	0	-1
5	Equitable division of responsibility prep/modifying material	5	1	0	2
6	Working with students and discipline or attendance issues	6	0	-1	3
7	Maintaining appropriate continuum of services is impractical	7	-4	-3	-3
8	SWD better served in small group settings with slower pace	8	-1	1	-4
9	Fairness/balance needs SWD w/ other students is a challenge	9	-1	1	0
10	Operational barriers prevent staff from supporting SWD	10	-3	2	-3
11	Teachers protect or guard resources from one another	11	-3	-4	-1
12	Systems allow teachers direct involve in site decision-makin	12	2	2	-1
13	Intelligence is something school staff cannot change much	13	-2	-3	-4
14	Communicate sincere belief staff can develop teaching skills	14	4	1	2
15	Students disruptive behavior regularly cause signif issues	15	-1	0	1
16	Exclusive cliques or camps within facility	16	-2	-3	0
17	Staff participate in leadership opport through school day	17	3	-1	-2
18	Examination of standard test results teachers class import	18	1	0	1
19	Staff resistance prevent effectively supporting students	19	-2	-2	0
20	Staff ideas on/off table safely in collaborative planning	20	2	4	1
21	Completing routine paperwork is important	21	-1	-1	-3
22	Provide teachers w/ targeted PD to professional needs/goals	22	1	0	2
23	Us vs. them feeling between general and special education	23	-3	-4	-2

24	Staff work together to design plans for teacher development	24	1	-1	0
25	Staff members reluctant to work with struggling students	25	-4	-2	-2
26	Time is provided in the workday for co-planning	26	2	3	4
27	Providing differentiated supports to students is a challenge	27	-2	3	-1
28	Accountability for learning demonstrated by standard assess	28	0	-1	0
29	Teachers provided w/feedback on practice out of formal evals	29	1	1	1
30	Monitoring public spaces is important	30	-1	-2	-1
31	Teacher collab sev/month on instruction topics/student work	31	3	4	4
32	Communication about decision-making is provided to teachers	32	2	2	1
33	Troubleshooting school improvement efforts	33	0	1	3
34	Teachers observe one another and give feedback on BP	34	0	-2	-2

Variance = 4.706 St. Dev. = 2.169

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Factor Q-Sort Values for Statements sorted by Consensus vs. Disagreement (Variance across Factor Z-Scores)

Factor Arrays

No.	Statement	No.	1	2	3
7	Maintaining appropriate continuum of services is impractical	7	-4	-3	-3
29	Teachers provided w/feedback on practice out of formal evals	29	1	1	1
2	Instructional expectations made clear to teachers in advance	2	3	2	3
23	Us vs. them feeling between general and special education	23	-3	-4	-2
18	Examination of standard test results teachers class import	18	1	0	1
32	Communication about decision-making is provided to teachers	32	2	2	1
4	Teachers invited to give critical feedback on admin practice	4	0	0	-1
22	Provide teachers w/ targeted PD to professional needs/goals	22	1	0	2
1	Dealing with emergencies and other unplanned circumstances	1	0	0	1
28	Accountability for learning demonstrated by standard assess	28	0	-1	0
14	Communicate sincere belief staff can develop teaching skills	14	4	1	2
25	Staff members reluctant to work with struggling students	25	-4	-2	-2
31	Teacher collab sev/month on instruction topics/student work	31	3	4	4
21	Completing routine paperwork is important	21	-1	-1	-3
26	Time is provided in the workday for co-planning	26	2	3	4
13	Intelligence is something school staff cannot change much	13	-2	-3	-4
5	Equitable division of responsibility prep/modifying material	5	1	0	2
11	Teachers protect or guard resources from one another	11	-3	-4	-1

20	Staff ideas on/off table safely in collaborative planning	20	2	4	1
19	Staff resistance prevent effectively supporting students	19	-2	-2	0
9	Fairness/balance needs SWD w/ other students is a challenge	9	-1	1	0
30	Monitoring public spaces is important	30	-1	-2	-1
34	Teachers observe one another and give feedback on BP	34	0	-2	-2
15	Students disruptive behavior regularly cause signif issues	15	-1	0	1
24	Staff work together to design plans for teacher development	24	1	-1	0
6	Working with students and discipline or attendance issues	6	0	-1	3
12	Systems allow teachers direct involve in site decision-makin	12	2	2	-1
3	Staff believe they can help students meet learning goals	3	4	3	0
33	Troubleshooting school improvement efforts	33	0	1	3
16	Exclusive cliques or camps within facility	16	-2	-3	0
8	SWD better served in small group settings with slower pace	8	-1	1	-4
17	Staff participate in leadership opport through school day	17	3	-1	-2
27	Providing differentiated supports to students is a challenge	27	-2	3	-1
10	Operational barriers prevent staff from supporting SWD	10	-3	2	-3

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Factor Characteristics

	Factors		
	1	2	3
No. of Defining Variables	9	6	3
Average Rel. Coef.	0.800	0.800	0.800
Composite Reliability	0.973	0.960	0.923
S.E. of Factor Z-Scores	0.164	0.200	0.277

Standard Errors for Differences in Factor Z-Scores

(Diagonal Entries Are S.E. Within Factors)

Factors	1	2	3

1	0.232	0.259	0.322
2	0.259	0.283	0.342
3	0.322	0.342	0.392

Distinguishing Statements for Factor 1

(P < .05 ; Asterisk (*) Indicates Significance at P < .01)

Both the Factor Q-Sort Value (Q-SV) and the Z-Score (Z-SCR) are Shown.

		Factors					
		1		2		3	
No.	Statement	No.	Q-SV	Z-SCR	Q-SV	Z-SCR	Q-SV Z-SCR
3	Staff believe they can help students meet learning goals	3	4	1.91	3	1.25	0 0.24
14	Communicate sincere belief staff can develop teaching skills	14	4	1.40	1	0.78	2 0.64
17	Staff participate in leadership opport through school day	17	3	1.35*	-1	-0.26	-2 -0.97
34	Teachers observe one another and give feedback on BP	34	0	0.02	-2	-1.13	-2 -0.67
9	Fairness/balance needs SWD w/ other students is a challenge	9	-1	-0.58	1	0.55	0 0.14
8	SWD better served in small group settings with slower pace	8	-1	-0.68*	1	0.74	-4 -1.57
15	Students disruptive behavior regularly cause signif issues	15	-1	-0.78	0	-0.18	1 0.60
16	Exclusive cliques or camps within facility	16	-2	-0.79*	-3	-1.54	0 0.31

Distinguishing Statements for Factor 2

(P < .05 ; Asterisk (*) Indicates Significance at P < .01)

Both the Factor Q-Sort Value (Q-SV) and the Z-Score (Z-SCR) are Shown.

Factors

		1		2		3	
No.	Statement	No.	Q-SV	Z-SCR	Q-SV	Z-SCR	Q-SV	Z-SCR
27	Providing differentiated supports to students is a challenge	27	-2	-0.78	3	1.46*	-1	-0.43
3	Staff believe they can help students meet learning goals	3	4	1.91	3	1.25	0	0.24
10	Operational barriers prevent staff from supporting SWD	10	-3	-1.47	2	1.00*	-3	-1.42
8	SWD better served in small group settings with slower pace	8	-1	-0.68	1	0.74*	-4	-1.57
15	Students disruptive behavior regularly cause signif issues	15	-1	-0.78	0	-0.18	1	0.60
17	Staff participate in leadership opport through school day	17	3	1.35	-1	-0.26	-2	-0.97
24	Staff work together to design plans for teacher development	24	1	0.66	-1	-0.78*	0	0.12
30	Monitoring public spaces is important	30	-1	-0.10	-2	-1.19	-1	-0.34
16	Exclusive cliques or camps within facility	16	-2	-0.79	-3	-1.54*	0	0.31

Distinguishing Statements for Factor 3

(P < .05 ; Asterisk (*) Indicates Significance at P < .01)

Both the Factor Q-Sort Value (Q-SV) and the Z-Score (Z-SCR) are Shown.

Factors

		1		2		3	
No.	Statement	No.	Q-SV	Z-SCR	Q-SV	Z-SCR	Q-SV	Z-SCR
31	Teacher collab sev/month on instruction topics/student work	31	3	1.29	4	1.48	4	2.16
33	Troubleshooting school improvement efforts	33	0	0.12	1	0.47	3	1.79*
6	Working with students and discipline or attendance issues	6	0	-0.03	-1	-0.52	3	0.96*
5	Equitable division of responsibility prep/modifying material	5	1	0.19	0	-0.18	2	0.85
15	Students disruptive behavior regularly cause signif issues	15	-1	-0.78	0	-0.18	1	0.60
16	Exclusive cliques or camps within facility	16	-2	-0.79	-3	-1.54	0	0.31*
3	Staff believe they can help students meet learning goals	3	4	1.91	3	1.25	0	0.24*
19	Staff resistance prevent effectively supporting students	19	-2	-1.34	-2	-1.01	0	-0.24
12	Systems allow teachers direct involve in site decision-makin	12	2	1.05	2	1.00	-1	-0.36*
11	Teachers protect or guard resources from one another	11	-3	-1.46	-4	-1.71	-1	-0.66
17	Staff participate in leadership opport through school day	17	3	1.35	-1	-0.26	-2	-0.97
21	Completing routine paperwork is important	21	-1	-0.42	-1	-0.35	-3	-1.20
8	SWD better served in small group settings with slower pace	8	-1	-0.68	1	0.74	-4	-1.57*

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Consensus Statements -- Those That Do Not Distinguish Between ANY Pair of Factors.

All Listed Statements are Non-Significant at P>.01, and Those Flagged With an * are also Non-Significant at P>.05.

		Factors					
		1		2		3	
No.	Statement	No.	Q-SV	Z-SCR	Q-SV	Z-SCR	Q-SV Z-SCR
1*	Dealing with emergencies and other unplanned circumstances	1	0	-0.02	0	-0.16	1 0.44
2*	Instructional expectations made clear to teachers in advance	2	3	1.19	2	0.86	3 0.89
4*	Teachers invited to give critical feedback on admin practice	4	0	0.16	0	-0.18	-1 -0.30
7*	Maintaining appropriate continuum of services is impractical	7	-4	-1.51	-3	-1.24	-3 -1.27
14	Communicate sincere belief staff can develop teaching skills	14	4	1.40	1	0.78	2 0.64
18*	Examination of standard test results teachers class import	18	1	0.16	0	0.46	1 0.60
21	Completing routine paperwork is important	21	-1	-0.42	-1	-0.35	-3 -1.20
22*	Provide teachers w/ targeted PD to professional needs/goals	22	1	0.78	0	0.31	2 0.67
23*	Us vs. them feeling between general and special education	23	-3	-1.45	-4	-1.58	-2 -1.20
28	Accountability for learning demonstrated by standard assess	28	0	0.10	-1	-0.56	0 0.06
29*	Teachers provided w/feedback on practice out of formal evals	29	1	0.68	1	0.71	1 0.41
32*	Communication about decision-making is provided to teachers	32	2	1.02	2	0.97	1 0.60

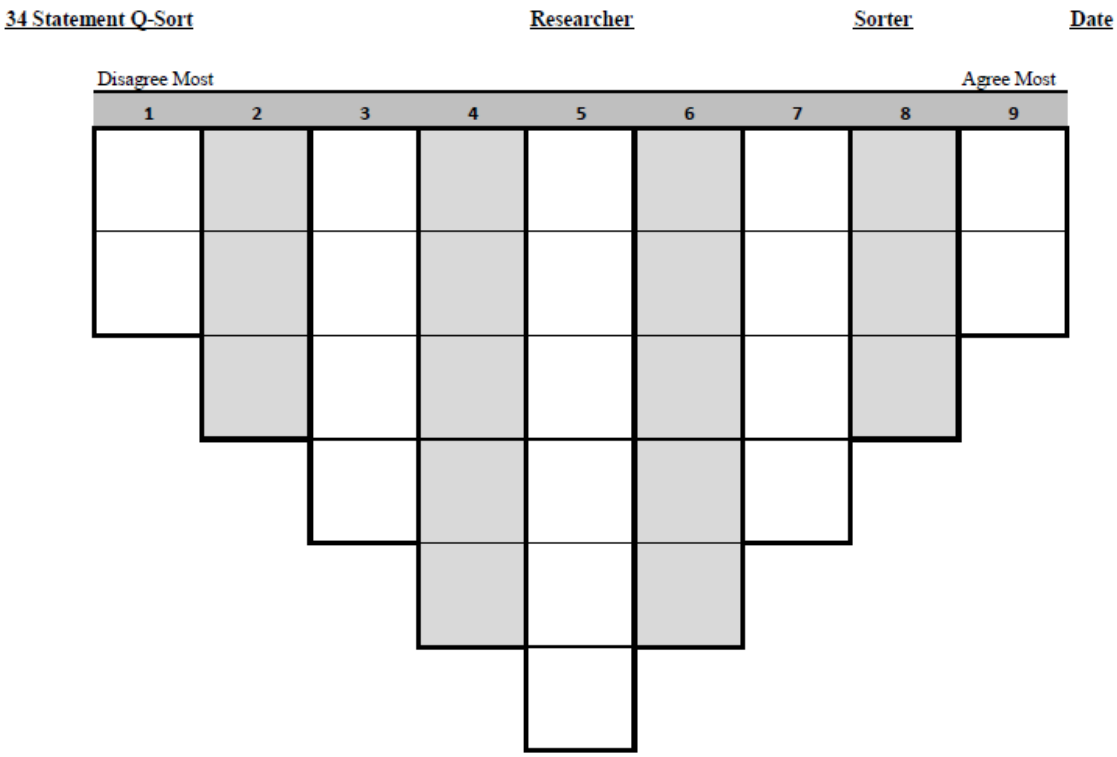
QANALYZE was completed at 20:33:33

APPENDIX D

Q-SORT DIAGRAM AND

COMPLETED PARTICIPANT Q-SORTS

Q-sort Recording Diagram



Participant A1FEAA's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
7	19	9	33	21	12	26	24	3
10	23	11	30	4	18	22	17	14
	16	15	13	6	29	20	31	
		25	27	34	2	32		
			8	5	28			
				1				

Participant B2FECA's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
23	16	25	24	5	30	14	20	3
13	11	10	29	15	33	31	12	32
	7	18	34	21	6	17	1	
		4	26	19	8	9		
			28	22	2			
				27				

Participant C5FECA's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
7	25	19	5	6	32	24	3	12
11	10	15	27	8	4	26	17	31
	21	23	30	18	33	20	14	
		9	1	28	2	29		
			16	13	22			
				34				

Participant D6FEAA's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
13	11	9	1	17	24	5	12	2
23	25	6	7	4	18	14	20	3
	19	27	21	30	28	22	32	
		16	15	34	29	31		
			10	33	26			
				8				

Participant E6MEAA's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
7	11	30	15	29	8	20	3	9
23	34	21	4	6	24	33	31	27
	25	14	1	18	17	10	26	
		13	28	5	22	32		
			16	14	12			
				2				

Participant F5FENF's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
13	7	10	19	32	2	17	5	29
8	25	27	30	9	12	26	20	3
	11	23	21	28	34	22	31	
		16	15	18	24	14		
			1	6	4			
				33				

Participant G3MMAB's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
13	19	23	25	9	1	14	2	3
16	6	11	28	8	33	29	26	20
	24	7	4	34	32	27	12	
		30	22	5	10	31		
			17	21	18			
				15				

Participant F5FENF's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
13	7	10	19	32	2	17	5	29
8	25	27	30	9	12	26	20	3
	11	23	21	28	34	22	31	
		16	15	18	24	14		
			1	6	4			
				33				

Participant H4FMAA's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
19	10	11	34	28	9	30	31	2
25	7	13	16	21	33	22	26	17
	27	15	8	20	32	14	3	
		23	4	18	29	1		
			24	12	6			
				5				

Participant I5MMAA's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
25	1	19	7	24	33	16	17	32
8	10	9	30	22	31	4	14	3
	11	27	5	20	18	12	2	
		23	15	28	26	13		
			6	29	21			
				34				

Participant J6MMBA's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
11	7	24	3	21	14	12	20	26
16	19	25	28	9	1	15	32	31
	23	34	17	2	6	27	8	
		13	29	4	18	10		
			30	5	22			
				33				

Participant K6FMAA's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
10	7	11	28	18	24	1	33	31
13	12	8	25	15	6	29	14	20
	23	17	27	9	2	3	26	
		19	21	32	4	16		
			30	22	5			
				34				

Participant L7MMBB's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
8	7	27	14	3	32	30	5	26
13	21	25	10	12	15	22	1	31
	17	34	11	29	16	6	33	
		23	4	24	18	9		
			20	28	2			
				19				

Participant M8FMFF's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
34	16	21	28	4	3	31	8	10
11	30	15	5	26	14	2	29	27
	1	25	33	24	32	18	19	
		23	13	12	9	22		
			17	20	6			
				7				

Participant N2FHNC 's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
9	8	19	25	3	32	22	2	14
23	13	24	11	31	29	1	12	10
	26	28	15	17	27	20	33	
		34	5	16	21	4		
			7	30	18			
				6				

Participant O3FHCC's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
11	8	10	6	16	2	20	18	33
23	34	19	5	29	12	26	24	31
	21	13	15	1	4	14	22	
		9	30	7	32	3		
			27	17	28			
				25				

Participant P5FHFB's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
13	21	11	7	22	32	34	24	3
28	18	23	27	8	5	31	26	2
	30	19	9	10	17	12	20	
		25	16	33	4	29		
			6	1	14			
				15				

Participant Q6MHFB's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
30	19	23	5	16	33	9	31	20
6	11	24	7	17	21	14	29	3
	10	34	18	22	12	8	25	
		1	13	27	4	32		
			15	28	2			
				26				

Participant R7MHFF's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
10	1	21	7	3	22	18	26	33
30	25	23	16	17	29	32	2	31
	13	9	11	12	27	15	14	
		8	34	5	20	6		
			4	19	28			
				24				

Participant SJMTC's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
25	8	19	30	17	13	24	31	3
23	16	11	4	5	10	12	14	20
	34	21	28	6	26	22	29	
		15	33	1	7	2		
			18	32	9			
				27				

Participant T4MHDB's Sort

Strongly Disagree								Strongly Agree
-4	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**
10	7	31	21	4	27	22	6	30
25	23	15	16	29	2	28	17	1
	19	13	8	3	14	20	12	
		11	5	33	32	18		
			9	34	24			
				26				

APPENDIX E

IRB APPROVAL

YOUNGSTOWN STATE UNIVERSITY

One University Plaza, Youngstown, Ohio 44555
Office of Research
330.941.2377

October 9, 2018

Dr. Karen Larwin, Principal Investigator
Ms. Stephanie Morgan, Co-investigator
Department of Counseling, School Psychology & Educational Leadership
UNIVERSITY

RE: HSRC PROTOCOL NUMBER: 032-2019
TITLE: Leadership Perspectives Using Q-Sort: Principal Mindset Beliefs Regarding Students with Disabilities

Dear Dr. Larwin and Ms. Morgan:

The Institutional Review Board has reviewed the abovementioned protocol and determined that it is exempt from full committee review based on a DHHS Category 2 exemption.

Any changes in your research activity should be promptly reported to the Institutional Review Board and may not be initiated without IRB approval except where necessary to eliminate hazard to human subjects. Any unanticipated problems involving risks to subjects should also be promptly reported to the IRB.

The IRB would like to extend its best wishes to you in the conduct of this study.

Sincerely,

Dr. Greg Dillon
Interim Associate Vice President for Research
Authorized Institutional Official

GD:cc

YOUNGSTOWN STATE UNIVERSITY

One University Plaza, Youngstown, Ohio 44555
Office of Research
330.941.2377

February 16, 2019

Dr. Karen Larwin, Principal Investigator
Ms. Stephanie Morgan, Co-investigator
Department of Counseling, School Psychology & Educational Leadership
UNIVERSITY

RE: HSRC PROTOCOL NUMBER: 116-2019
TITLE: Principal Perceptions of Students with Disabilities: a Q Sort Investigation of Mindset Orientations and Leadership Practices

Dear Dr. Larwin and Ms. Morgan:

The Institutional Review Board has reviewed the abovementioned protocol and determined that it meets the criteria of DHHS 45 CFR 46,104(d)(2), and therefore is exempt from full committee review.

Any changes in your research activity should be promptly reported to the Institutional Review Board and may not be initiated without IRB approval except where necessary to eliminate hazard to human subjects. Any unanticipated problems involving risks to subjects should also be promptly reported to the IRB.

The IRB would like to extend its best wishes to you in the conduct of this study.

Sincerely,

Dr. Greg Dillon
Interim Associate Vice President for Research
Authorized Institutional Official

GD:cc