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PUBLIC SCHOOL PRINCIPALS' ATTITUDES REGARDING THE CLASSROOM PARTICIPATION OF STUDENTS WITH AUTISM WHO EXHIBIT CHALLENGING BEHAVIOR

Taryn G. Traylor
Virginia Commonwealth University

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PARTICIPATION OF STUDENTS WITH AUTISM WHO EXHIBIT CHALLENGING
BEHAVIOR

A dissertation submitted in partial fulfillment of the requirements of the degree of Doctor of
Philosophy at Virginia Commonwealth University.

by

Taryn Goodwin Traylor
Bachelor of Science, James Madison University, 2007
Master of Education, James Madison University, 2008

Director(s): Kevin Sutherland, Ph.D. and Chriss Walther-Thomas, Ph.D.
Professors, Counseling and Special Education

Virginia Commonwealth University
Richmond, Virginia
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This dissertation is dedicated to my late mother, Susan Goodwin, and my father, Ronnie Goodwin. You both taught me that hard work, passion, and persistence can make anything happen. Thank you for always supporting me, guiding me, and pushing me to be better every day.

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Abstract

PUBLIC SCHOOL PRINCIPALS' ATTITUDES REGARDING THE CLASSROOM PARTICIPATION OF STUDENTS WITH AUTISM WHO EXHIBIT CHALLENGING BEHAVIOR

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Students with autism spectrum disorder (ASD) present challenges for principals supervising both general and special education teachers. Evidence-based practices designed to address the challenging behavior and academic needs of this population exists, but there are numerous contextual factors that affect the ability of principals to effectively assist their teachers in implementation. The purpose of this research was to examine the relationship between principal leader's demographic characteristics, the influence of contextual factors, and leadership attitudes that affect their development and priorities for their schools. The implementation science framework and collective impact theory was investigated as a conceptual framework to analyze these critical research areas. Elementary principals responded to a researcher-designed survey instrument to identify contextual factors and priorities for development. Information was

analyzed using one-way analysis of variance tests (ANOVA) and survey response patterns.

Findings will provide direct guidance for principal development and leadership practices.

Chapter I

Introduction

Principals play a vital role in increasing student achievement, second only to teachers (Rowland, 2017). In a context inundated by school improvement efforts, principals drive teacher growth and positive school climate that impact long-term student success efforts. Similar to teachers, these leaders obtain more sophisticated on-the-job skills as they gain experience within the first three years. Yet, many principals leave their positions within this timeframe; most often, exiting low-performing schools within the first year (Beteille, Kalogrides, & Loeb, 2011; School Leaders Network, 2014). Further, principals have limited to no access to professional development that reflects evolving contextual demands of various school factors and effective practices that work to remedy these challenges (Riley & Meredith, 2017). Those leaders who do not receive job-specific development are 1.4 more times likely to exit the field than their counterparts who have received advanced professional development (National Center for Educational Statistics, 2013).

Demands for principals to address the needs of students with disabilities increased with the passing of *No Child Left Behind* (NCLB, 2001). Principals were given explicit direction on their accountability of teachers that support these students, and student progress. Now, with new legislation (ESSA, 2015), principals continue to have a critical role in retaining quality teachers and increasing outcomes for all students. Despite the availability of Title I/II ESSA funding

allocated for principal development, only 31% of districts nationally report using either funding stream for addressing the lack of principal continuing education opportunities (New Leaders, 2016). The professional development provided to these leaders, that is principal-specific, focuses on state-driven expectations instead of logistics for implementing school change (School Leaders Network, 2014). To sustain effective principals, high quality and continuous development is necessary to cultivate best practices that accurately reflect their current role (Coggshall, 2015). The U.S. Department of Education guides states, and districts, to use evidence-based practices with consideration given to context and specific students (Rowland, 2017). In the next section, the impact of the growing number of students with autism served in public schools will be discussed.

Statement of the Problem

Autism spectrum disorder (ASD) is classified as the fastest growing developmental disability with neurological origins (American Psychiatric Association, 2013; Boyle et al., 2011). In 2015, the National Center for Educational Statistics (NCES) reported 538,000 students educationally labeled under the autism spectrum disorder (ASD) category. The *2014 Centers for Disease Control Morbidity and Mortality Report* reported the prevalence rate for autism as 1 in 59 children (Baio et al., 2014). This has created the need for high-quality public educational services through the delivery of evidence-based practices (Odom, Cox, & Brock, 2013).

Given the prevalence rates of autism, the students and their families affected by autism are placing urgent demands on school systems for implementation of evidence-based practices (EBPs), which requires support from principals and district leaders (Ringeisen, Henderson, & Hoagwood, 2003). Providing special education services to students with ASD is linked to disability legislation and implementation of EBPs in school settings as stakeholders strive to

respond to the fastest growing developmental disability (Hill & Kearley, 2013). Students with autism account for one-third of published court cases related to free and appropriate education (FAPE) and least restrictive environment (LRE) concepts under the IDEA (Zirkel, 2011). Researchers attribute litigation to inadequate principal preparation in special education law and services (Peazey & Cole, 2013). Autism litigation is likely due to the school system's limited success in addressing the complex needs of the disability (Zirkel, 2011). Building leaders are urged to understand disability legislation and EBPs to appropriately serve students with ASD. Federal legislation has impacted the evolution of services provided to students with ASD, the expectations for teachers of students with ASD, and challenges school building leaders face.

Rationale for the Study

The purpose of the study was to examine potential relationships between principal leader's knowledge of contextual factors (e.g. hiring and retaining teachers, school climate and morale, access to professional expertise, and, sustainability of resources), influential professional development and school related demographics, and leadership attitudes that influence priorities for the school and their development. Another purpose was to identify areas of continuing education needs related to principal's perceptions about their leadership skills recommended by the *Professional Standards for Educational Leaders (PSEL) 2015 standards* and their perceptions about their ability to support implementation of evidence-based practices within the school context related to placement.

Information obtained from this study can assist program developers and policymakers in identifying key leadership components needed to effectively implement and sustain large-scale initiatives within the school context. Additionally, this study informs professional development for principals and other school leaders in supervision and monitoring of evidence-based practices

for high-incidence disabilities in which they may experience the most litigation, advocacy, and staff turnover.

Statement of Purpose

Public school principals are faced with numerous contextual factors that impact their leadership practices and ability to implement best practices in their school setting. The overall purpose of this study was to examine potential relationships between principal's knowledge of contextual factors, influential professional development and school related demographics, and leadership attitudes that influence priorities for the school and their development. The secondary purpose identified areas of continuing education needs for principals. To address this purpose, survey data examined relationships between decision-making and exposure to professional development on best practices. Given potential weaknesses of using one survey mode, the tailored design method allowed participants to respond via mail or electronically. Results from the study provide additional support to literature on principal leadership and principal development needs and priorities.

Brief Review of the Literature

Given the nature of federal and state priorities towards student achievement for all students, building leaders are tasked with ensuring students with ASD meet state curriculum standards in addition to addressing their communication, social, behavioral and other adaptive skill needs. Evidence suggests that teachers do not imbed adaptive skill areas into core curriculum; often, leaving these complex skill areas unaddressed (Odom et al., 2013). To further complicate matters, the six core elements for effective instruction identified by Iovannone and colleagues (2003) expanded to 27 EBPs. Identification and implementation of EBPs can be difficult provided a heterogeneous caseload of students. In Table 1, the six core elements of

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effective instruction (2003) are compared to the 27 EBPs (2015-2016). Similar to 2003, the

implementation of EBPs has significant implications for the educational outcomes for students

with ASD. There remains concern around the effectiveness of each of the EBPs across these

students.

Table 1

Comparison of Effective Instructional Practices for Students with ASD

Six Core Elements for Effective Instruction Iovannone and colleagues (2003)	27 Evidence-Based Practices National Professional Development Center on ASD (2015-2016)
Individualized Supports and Services	Social Skills Training (SST)
	Social Narratives (SN)
Systematic Instruction	Discrete Trial Teaching (DTT)
	Naturalistic Intervention (NI)
	Pivotal Response Training (PRT)
	Prompting (PP)
	Task Analysis (TA)
	Reinforcement (R)
	Modeling (MD)
	Time Delay (TD)
Comprehensive/Structured Learning Environments	Antecedent-based Intervention (ABI)
	Visual Support (VS)
	Exercise (ECE)

Six Core Elements for Effective Instruction Iovannone and colleagues (2003)	27 Evidence-Based Practices National Professional Development Center on ASD (2015-2016)
Specialized Curriculum Content	Peer-mediated Instruction and Intervention (PMII)
	Video Modeling (VM)
	Scripting (SC)
	Computer Aided Instruction
	Speech Generating Devices
	Functional Communication Training (FCT)
	Extinction (EXT)
	Picture Exchange Communication System (PECS)
Functional Approach to Problem Behavior	Differential Reinforcement (DR)
	Cognitive Behavioral Intervention
	Functional Behavior Assessment (FBA)
	Self-management (SM)
	Response Interruption/Redirection (RI/R)
Family Involvement	Parent-implemented Intervention (PII)

The requirement of EBPs set forth by litigation and legislation complicates the context of supporting teachers and students with complex needs. Given this climate, the impact of these critical issues on decisions made by school personnel are instrumental in understanding building leader's ability to navigate macro-level programming while managing micro-level tasks. In the next section, the policy climate, evidence-based practices, and current professional development of principals will be discussed to provide supplementary context to reflect the complexity of these critical issues.

Policy climate. In the educational context, the dramatic increase of autism and disproportionality in litigation is credited to the recent recognition of autism under IDEA. Litigation is more prevalent in autism than any other disability in special education law (Chestnut et. al., 2013). Building leaders are urged to understand disability legislation and EBPs to appropriately serve and determine educational placement students with ASD (Zirkel, 2011). Federal legislation has impacted the evolution of services provided to students with ASD. The next section will explore recent legislation that impacts professional development opportunities for principals.

The *Elementary and Secondary Education Act* reauthorized as the *Every Student Succeeds Act* ([ESSA], 2015) replaced NCLB (2001). ESSA presents a new focus on the importance of school leadership and the principal. This legislation granted flexibility on some previous NCLB requirements in exchange for comprehensive state plans to increase equity, close achievement gaps, and target low-performing schools. Given increasing evidence that building leaders are a key to retaining quality teachers and increasing student outcomes, the flexibility of ESSA Title I and II funds can be directed towards principal professional development activities that impacts teachers and students (Herman et al., 2016). These funds can be allocated to improve (a) principal certification, (b) evaluation, (c) preservice preparation, (d) training and professional development, (e) recruitment and retention effort, and, (f) and induction and mentoring (Herman et al., 2016). This legislation continues to emphasize evidence-based research and provides four tiers for determining the strength of a practice used to make educational decisions. There is more specificity in this legislation about the use of funds to strengthen in-service principals, principal pipelines, and university preparation programs.

Given autism is a relatively recent public policy matter, states have established autism-specific initiatives to improve professional development and technical assistance to combat potential litigation from an educational policy perspective. Along with an increased focus by states and schools, families are focusing on the entitlement of FAPE and mandate of LRE for their students with ASD. These students require increased educational and health services and receive a significantly higher number of total hours of service than their peers with other disabilities. Educational and health costs for an individual with ASD are estimated to be $1.4 million, across their lifespan, with the highest expense identified as the provision of special education services (Buescher, Cidav, Knapp, & Mandell, 2014). The contributing factors to these increased educational costs originate in student and family need; in turn, fueling litigation to access reimbursement for family incurred expenses (Zirkel, 2011).

Evidence-based practices. While EBPs are widely accepted in the field of autism, some researchers question the idea that these practices work for every student and can be easily implemented by educators (Odom et al., 2013). At this time, there is no agreement in the field about what EBPs are effective for the entire range of individuals with ASD. Given the lack of agreement, educators are tasked with using known strategies to teach students and potentially using one practice at a time (Cook & Odom, 2013).

Specifically, educational staff are tasked to use identified EBPs shown to be effective in working with this population (Simpson et al., 2007). While some teachers may implement one or more EBPs, the teacher is often not implementing the practice as intended (Cook & Odom, 2013). Evidence suggests that preparation and professional development could be insufficient in the area of EBPs (Wong et al., 2015). Variability in teachers' abilities and willingness to adapt practices to meet the needs of students poses implications for professional development provided

by school systems (Hammerness et al., 2005). Without systematic understanding of the factors that facilitate these processes at the systems level, initial investments in EBPs are ineffective and impact is limited (Willging et al., 2015).

Fixsen and colleagues (2013) claim implementation is the critical link to solving the research-to-practice gap. In the field, teachers are directed to adhere to EBPs with fidelity without respect to the complex organization system (Klingner, Boardman, & McMaster, 2013). Often, teachers are implementing evidence-based practices without their building leader's knowledge, or support. Implementation science has emerged to assist researchers, educators, and policymakers in generating theories regarding implementation of EBPs and sustainability of programming through organizational systems change processes (Cook & Odom, 2013; Odom, Cox, & Brock, 2013). Implementation science is defined as "a definable set of strategies and processes that promotes the systematic use of evidence-based practice into routine practice" (Odom, Cox, & Brock, 2013, p. 138). This framework identifies implementation drivers which are defined as "engines of change" who dynamically engineer consistent uses of innovations, remove barriers that impact use, and produce credible outcomes for other stakeholders (Fixsen et al., 2005). Principals are key implementation drivers to ensuring that this programming can be successfully installed within an established school culture with competing federal, state, and school initiatives.

Principal preparation and development. Principal leadership links directly and indirectly with student achievement (Leithwood et al., 2004) and sustainability of programs within a school context (Rowland, 2017). It is critical that principals understand how to set expectations for staff and students that reflect a collaborative school culture with a mutual vision (Hoppey & McLeskey, 2013; Kania & Kramer, 2011). Often, special education programming is

overseen by a central administrative office and housed within the school buildings. Building leaders need personnel development on how to navigate their autonomy with special education staff residing within their buildings and at the central office (Dou, Devos, & Valcke, 2016). It is promising that principals seek resources from within their school first (Horrocks et al., 2008). Yet, despite policy emphasis on evidence-based practices, principals continue to rely on personal attitudes and relationships over research when making leadership decisions (Loiacano & Palumbo, 2011). These key leadership dispositions and actions should be captured in a personnel development approach for principals (Rowland, 2017). If these dispositions and actions are simply expected, then principals will continue to vary in their abilities to lead from the middle and be an instructional leader for all students and all teachers (Dou et al., 2016; Hoppey & McLeskey, 2013; Rowland, 2017).

Additionally, it is evident that the dissemination of resources and knowledge to translation of resources and personnel development are limited and continually present as an issue to consider in the literature (Rowland, 2017; Wallace Foundation, 2008). The partnership between principal preparation universities and local education agencies are necessary to achieve these two critical components for any personnel development, dissemination, and knowledge-to-translation (Riley & Meredith, 2017; Rowland, 2017). Many principals are chosen to participate in research projects because of their willingness to participate, and perceived acceptance of students with disabilities within their buildings. There is no direct development plan for these leaders, who the research continues to show are key stakeholders in changing the school culture to implement evidence-based practices (Burdette, 2010; Carraway & Young, 2015; Tibbetts et al., 2010).

The importance of in-service principal development could be supported by a policy to increase investment by schools and districts (McCarthy et al., 2016; Rowland, 2017). The Wallace Foundation is facilitating the building of principal pipelines and producing tracking systems in partnership with universities and schools that later employ principals. Yet, there is still a need for tackling personnel development for in-service principals that can meet the needs of a diverse group of principals (Riley & Meredith, 2017; Rowland, 2017). The diversity experienced within the context of public school is difficulty to capture. Still, it is critical to understand the unique characteristics of the principal, the school, and the district, to provide meaningful professional development to school leaders.

In reviewed studies, principals self-reported many preparation needs that align with research on school change and implementation science (Ball & Green, 2014; Hoppey & McLeskey, 2013; Wakeman et al., 2006). In the past, the literature has focused on demographic information, the quantity of preparation years, experience, and types of preparation. There continues to be a need for identifying components that describe the quality of the preparation and development received. Current studies reveal that dissemination and knowledge to translation are weak, if not absent (Burdette, 2010; Rowland, 2017; Wallace Foundation, 2008). Further, the focus on principals as instructional leaders overshadows the potential need for professional development on day-to-day managerial tasks. There remains an assumption that principals only lack instructional leadership knowledge and skill (Rowland, 2017). When, in fact, some principals may need continued development on managing the building, managing staff, and buffering staff from outside accountability pressures. Despite limitations with self-report, the literature suggests that building leaders are aware of their personnel development needs (Ball &

Green, 2014; Horrocks et al., 2008; Wakeman et al., 2006), and those needs align with the principalship literature (Rowland, 2017).

In 1996, the *Interstate School Leaders Licensure Consortium* (ISLLC) developed standards to strengthen existing preparation programs and evaluation of principal development. These standards outline leadership knowledge, skills, actions, and dispositions required to increase principal, teacher, and student outcomes. Two revised iterations (2008, 2015) of the ISLLC standards were released to address critical issues and gaps identified following the first development. Most recently, McCarthy, Shelton, and Murphy (2016) analyzed the policy impact of the ISLLC standards. To date, scholarship is limited on areas of policy and practice of these standards. McCarthy and colleagues (2016) found that 45 states had adopted or adapted the ISLLC standards into state policies and practices. The foundation of these standards is derived from a time of school improvement with a focus on equity for all students. With limited research on the immediate and distal outcomes, the exploration of the leadership dispositions and actions of principals based on these standards is necessary.

Summary of implications. Principals are faced with a complex role as a manager and instructional leader for a large, diverse caseload of teachers and students. In addition, the ability to secure high quality teachers who can implement quality evidence-based practices is often a challenge, as professionals may be underprepared (Billingsley, 2011). While managing their buildings, transportation, student discipline, and teacher requests, principals are judged on their ability to support individuals. These leaders are left to internally manage and sustain evidence-based initiatives. Yet, little research has focused on defining *how* principals can internally, *reasonably* manage implementation of these practices.

Synthesis of the empirical literature addressing the effects of principal leadership on teachers and on students with ASD reveals several significant gaps that the proposed study seeks to address. First, more research is needed with in-service principal participants, in order to understand access to job-specific professional development and its impact on leadership dispositions. Second, few measures examine principals' leadership skills related to national professional development standards, with the assumption that principals can lead without continuous professional development. Finally, research examining large-scale implementation frameworks to assist principals in meeting growing expectations is limited.

Research Questions

Based on the abovementioned literature, the purpose of this research is to examine potential relationship between principal's knowledge of contextual factors (e.g. hiring and retaining teachers, school climate and morale, access to professional expertise, and, sustainability of resources), influential professional development and school related demographics, and leadership dispositions that influence priorities for the school and their development. To develop professional development programs for principal leaders, it is necessary to understand factors that influence these leaders' ability to support students with challenging behavior and autism in the public school setting.

Specific research questions to be explored through a survey methodology are:

RQ1: What are the self-reported leadership attitudes of elementary principals in Virginia?

RQ2: What are the self-reported contextual factors that Virginia elementary school principals report as influencing their decisions to requesting a different placement for a student with autism exhibiting challenging behavior?

RQ3: What are the self-reported professional development needs of Virginia elementary

principals on job-related tasks regarding best practices and supporting students with

ASD?

RQ4: What is the relationship between elementary principals' self-reported leadership

attitudes and their familiarity with professional evaluation standards, tools, and

guidelines?

RQ5: What is the relationship between self-reported professional development needs on

job-related tasks and demographics of elementary principals in Virginia?

Definition of Key Terms

Attitudes. Antonak and Liveneh (2000) defined attitudes as a "latent or inferred

psychosocial processes that lie dormant within one's self unless evoked by specific referents" (p.

212). When measured, understanding a person's attitude toward a specific referent (beliefs,

opinion, and situation) can assist in understanding and predicting behavior.

Autism spectrum disorder (ASD). Under the most recent Diagnostic and Statistical

Manual of Mental Disorders (DSM-5), the American Psychiatric Association (2013) defines

autism spectrum disorder as "persistent deficits in social communication and social interaction

across contexts, not accounted for by general developmental delays, and, restricted, repetitive

patterns of behavior, interests, or activities." There are three levels of severity that accompanies

the diagnosis to include Level 1 (requiring support) to Level 3 (requiring substantial support).

This level system provides educational specificity to the varying levels of support a child with

autism may require based on the level of support or intervention received. In this proposed study,

the prevalence, the policy climate, and educational costs, are critical contextual factors affecting

principals' ability to meet the needs of this population.

Contextual factors. These are job-specific factors that influence daily decision making, such as perceptions of staff, budget, resources, and support. For this study, contextual factors are examined by the influence that these factors have on dispositions to make more restrictive placement recommendations.

Evidence-based practices (EBPs). EBPs are defined as practices that yield positive outcomes for students, when used effectively, as vetted through peer reviewed research (Cook & Odom, 2013; Simpson et al., 2007). Despite extensive research on EBPs, these practices have yet to be fully implemented in many school districts (Odom, Cox, & Brock, 2013; Tincani et. al., 2014). In this study, EBPs are included as a demand in the school setting that principals may or may not be familiar with based on development received on this topic.

Principal leadership. The complexities of principal evaluation is based on high expectations of effective instructional leadership, staff and building management, and a broad array of other factors (e.g., school community relations, innovation, student leadership development). These leaders need to learn how to become a lifelong learner who develops a team to deliver effective instruction and supports to all students. This foundation identifies five key actions: shape a vision, create a hospitable school climate, cultivate leadership in others, improve instruction, and, manage data, people, and processes towards school improvement (Wallace Foundation, 2013). This information aligns with the conceptual frameworks to be discussed in this study as establishing a stronger empirical base for principal development on these key leadership skills.

Professional development. Defined by Learning Forward (2016), professional development means "activities that are: (a) an integral part of school and local educational agency strategies for providing educators with the knowledge and skills necessary to enable

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students to success in a well-rounded education to meet the challenging State academic

standards; (b) are sustained, intensive, collaborative, job-embedded; (c) an integral part of broad

school-wide and district-wide educational improvement; (d) improve classroom management;

(f) support recruitment, hiring, and training of staff; and (g) regularly evaluated for impact on

teacher effectiveness and student achievement." Not all components of the definition are

captured.

Table 2

Commonly Used Acronyms

Acronym	Meaning
ASD	Autism Spectrum Disorder
EBP	Evidence-based Practices or Evidence-based Programming
ESSA (2015)	Every Student Succeeds Act (2015)
IDEA (2004)	Individuals with Disabilities Education Act (2004)
FAPE	Free and Appropriate Education
ISLLC	Interstate School Leaders Licensure Consortium
NCLB (2001)	No Child Left Behind (2001)
NIRN	National Implementation Research Network
LRE	Least Restrictive Environment

Chapter II

Review of the Literature

One of the contributing factors to autism litigation is inadequate principal preparation regarding special education law and services (Peazey & Cole, 2013), as well as the school system's limited success in addressing the complex needs of the disability (Zirkel, 2011). Yet, these professionals are provided with limited to no personnel development to implement evidence-based practices (EBPs) with a variety of students. Students with autism are requiring more intensive investment from all school personnel. In particular, principals are expected to learn about and lead teachers, as well as other professionals in implementing effective instructional and behavioral practices, typically described as EBPs. Given higher demands, these leaders are instrumental in navigating macro-level initiatives while managing micro-level tasks that require supporting teachers and making disciplinary decisions for students based on multi-faceted school factors. To understand the problem and preface the research designed to address it, this chapter has three primary purposes.

To begin, several critical issues of principalship must be considered. These include: (a) the impact of autism prevalence and policy climate on schools, (b) the challenges associated with developing quality teachers, and (c) the lack of personnel development provided to principals. The primary purpose of the current review examined the literature on principals' attitudes, perceptions, and dispositions regarding support for teachers of students with ASD who exhibit challenging behavior and how that impacts placement decisions and support provided to those

teachers and students. A secondary purpose identified areas of professional development needs related to principals' perceptions about their leadership skills recommended by the *Professional Standards for Educational Leaders (PSEL) 2015 standards*, the influential contextual factors impacting placement decisions, and familiarity with job-specific tasks related to supporting students with autism in which they may experience the most litigation, advocacy, and staff turnover.

Finally, the relevance of implementation science and collective impact theory to the role of principals and critical issues faced by these leaders is discussed following the detailed analysis necessary to address the first two purposes of this paper. Collective impact theory (Kania & Kramer, 2011) and implementation science (Fixsen, Blasé, Naoom, & Wallace, 2009) are combined as a merged conceptual framework for exploring the contextual factors that influence principal leadership and the implications for principal supports.

Impact of Autism Prevalence and Policy Climate on Schools

To address the primary purpose of this paper, it is crucial to understand the issues surrounding ASD and the impact of these issues on schools and principals. These issues include: (a) prevalence of the population, (b) policy climate, including emphases on EBPs, and, (c) challenges associated with teaching this population. Examining the literature across these contextual considerations is important for understanding how principals address challenges in supporting this population of students and their teachers.

Prevalence, policy, and litigation. In Virginia, ASD is the fastest growing disability category. ASD and autism are terms that are used interchangeably to describe the same population of students. With a 678% increase between 2001 and 2017, there are an estimated 21,106 students with ASD being served in public schools or state-operated systems in the

Commonwealth of Virginia (VDOE Child Count, 2017). In *Figure 1*, the last four years of

VDOE child count data for the disability category of ASD is displayed. Given the continual

growth in prevalence, autism poses a challenge to schools and the provision of special education

services (Wei et al., 2014). Disability legislation and policy continue to heavily influence the

implementation of EBPs in school settings as stakeholders strive to respond to the fastest

growing developmental disability (Hill & Kearley, 2013).
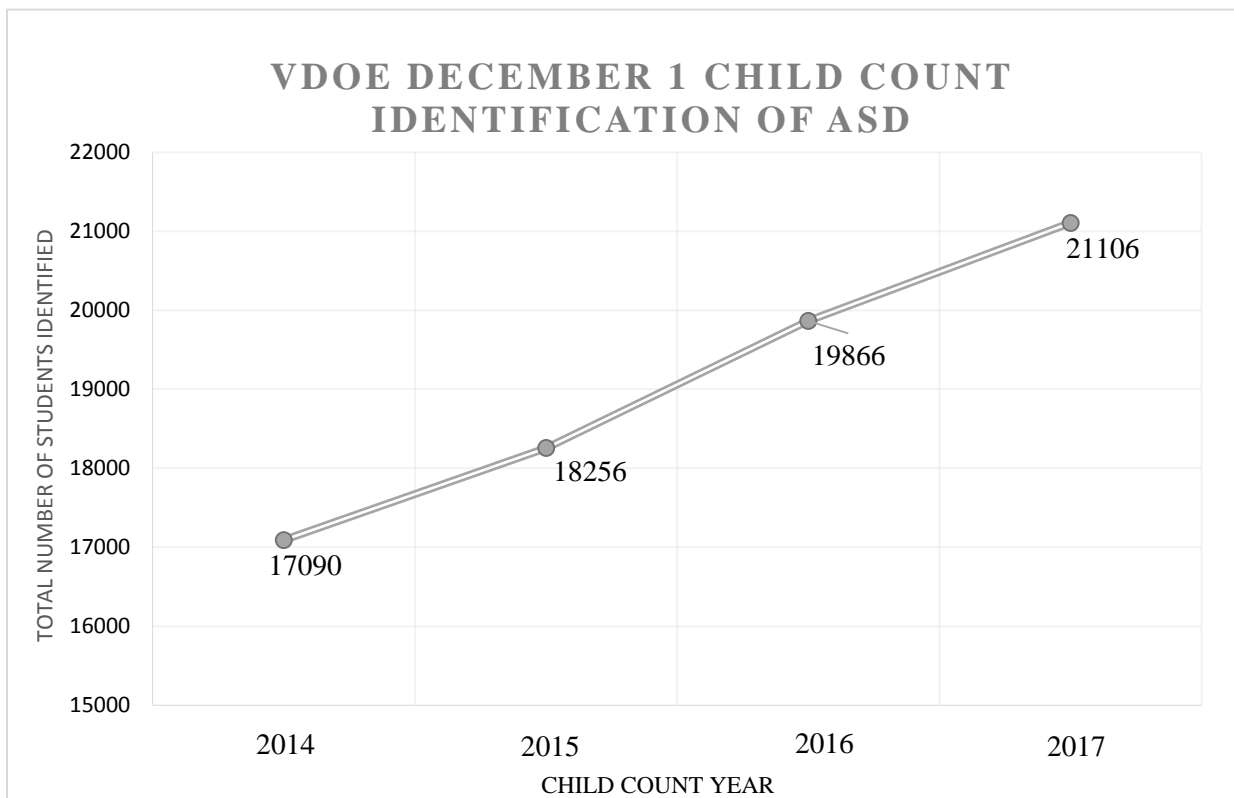
Figure 1. The upward trend of the prevalence of students identified with ASD in Virginia across
the last four data collection periods. This information represents publically available data on the
Virginia Department of Education's (VDOE) Data and Statistics page.

Retrospectively, *No Child Left Behind* [NCLB, 2001] required states to use scientifically-

based instruction, highly qualified teachers, and highly qualified paraprofessionals to ensure

students could meet proficiency standards set by their states (Yell, Drasgrow, & Lowrey, 2005).

Students with disabilities are spending more of their time in general education. These students,

including students with ASD, are assessed and included into buildings and district data for evaluation towards annual measurable objectives. Iovannone, Dunlap, and Kincaid (2003) published the first synthesis on effective instructional practices for students with ASD to respond to the federal legislation regarding scientifically-based instruction. Six core elements of effective educational practices were determined to be: (a) individualized supports and services, (b) systematic instruction, (c) comprehensible and structured learning environments, (d) specific curriculum content, (e) functional approach to problem behavior, and (f) family involvement.

These six elements were precursors to the development of 27 EBPs by the National Professional Development Center (NPDC) on ASD. The National Autism Center (NAC) at the May Institute, a research dissemination organization, conducted a multi-year study to develop and disseminate a set of standards for research validated practices in two phases, 2009 and 2015. The NPDC on ASD compared the research validated educational and behavioral practices to their identified EBPs in 2015. In addition to NCLB providing early scientifically-based instructional practices for ASD, it also provided early guidance to principals on ensuring that teachers are knowledgeable about assessment responsibilities under the law, which included conducting relevant and meaningful assessments, interpreting those assessments, and matching programming to assessment results. The principal's key roles would be: (a) monitoring student achievement, (b) assisting teachers who need improvement in this area, and (c) providing meaningful and relevant professional development (Yell, Drasgrow, & Lowrey, 2005).

Eight years later, the *Virginia Joint Legislative Audit and Review Committee* (Audit, JLARC, 2009) reported that Virginia schools had yet to build capacity to serve individuals on the spectrum (p. 107). In this report, it was determined that there was a lack of clarity relating to the definition of free and appropriate public education (FAPE) for students with ASD. According to

the *Individuals with Disabilities Education Act* (IDEA), the term "appropriate education" is defined as "special education services designed to meet the unique needs of each student to prepare for future employment and postsecondary education" (IDEA, 2004). Seventy-one percent of schools reported that they were not able to provide services to promote independence of all their students with ASD. Wehman and Hendricks (2009) echoed that employment and postsecondary opportunities for students with ASD are poor despite the increase in knowledge of EBPs and federal legislation supporting the use of such practices.

The 2009 JLARC report identified the type of service and the intensity of services provided to students with ASD were not research-based. To illustrate, more than one third of Virginia elementary schools reported using non-evidence-based practices (e.g. holding therapy and facilitated communication) (JLARC, 2009, p. 113). Inadequate teacher education and access to professional expertise in ASD was reported as insufficient. At the time of the survey, it was reported that 59% of school divisions had an autism specialist role in their division; yet, 50% of respondents reported insufficient access to this support. Given the rapidly-increasing identification of students in Virginia public schools, and indication that these students require more educational services than other disability categories, this finding suggests a need for a systematic plan to assign autism specialists to a reasonable caseload. Additionally, the expertise of the specialists could play a role in supporting teachers and students.

Guidance and recommendations directed the Virginia Department of Education (VDOE) and local education agencies to improve the educational services provided to students with ASD. New and in-service teacher education and student outcome measures are recommendations provided by this state agency that pushes additional recommendations beyond NCLB. Principals manage staff time, determine professional development activities, access to resources and

experts, and support teachers in implementation of specific curricular or EBPs. The JLARC

report had no direct recommendations for principals on how to ensure appropriate educational

services and placement for any student with ASD who may be in general education classes or in

another placement, in addition to supporting teachers of students with ASD and challenging

behavior (Cummins, 2015).

The *Every Student Succeeds Act* ([ESSA], 2015) replaced *No Child Left Behind* ([NCLB],

2001) and provided a focused approach to supporting principal development. Early NCLB

guidance was adapted in ESSA to lessen reporting accountability for highly-qualified teachers

and student assessment scores. While removing some of the burdens associated with

principalship, this legislation put forth the first effort to provide flexibility of funding to target

principal development (Herman et al., 2016). These funds can be allocated to improve: (a)

principal certification, (b) evaluation, (c) education, (d) professional development, (e)

recruitment and retention efforts, and, (f) induction and mentoring support (Herman et al., 2016).

To reiterate Rowland's (2017) findings, principals are levers for change provided ongoing

education and support. Rowland (2017) reports that research on the important role of principals

is strong; yet, there are limited strong methodologies that investigate these leaders' impact on

teaching and learning. Principals' impact on teaching and learning is directly related to the

quality of the on-the-job education and professional development received. Unfortunately, only

31% of school districts reported using ESSA funds for principal continuing education (New

Leaders, 2016).

Challenges Associated with Developing High-Quality Teachers

A principals' ability to support the implementation of EBPs within school settings and

their familiarity with the job-specific tasks necessary to lead others who support the ASD

population drives the secondary purpose of this chapter. In efforts to identify areas of continuing education needs for principals, the implementation complexities surrounding EBPs is essential for understanding the factors that attribute to litigation, advocacy, and staff turnover. The challenges associated with implementing EBPs include: (a) the current state of teacher development and principal development; and, (b) implications for principals with an emphasis on EBPs, job expectations, teacher attrition, and student behavior. These challenges serve to establish foundational knowledge of effective principal development opportunities relating to school and district contextual factors, teacher retention, and ultimately, change in academic and social outcomes for students with ASD. The leadership skills necessary to employ instructional leadership requires consideration of these issues. Prior to addressing these two vital issues impacted by EBPs, the upcoming section discusses the evolution of these practices for treatment of students with ASD. In preparation for the discussion of the three large-scale issues associated with implementing EBPs, the recent evidence surrounding EBPs and ASD will be explained. Next, the state of current teacher development, schools investment in professional development, and the state of principal development will be examined. These two quick overviews will guide the next section that addresses the implications for the principal leader.

Evidence-based practices. Extensive work has gone into identifying EBPs for teaching students with ASD in the educational setting (National Autism Center, 2009). EBPs are defined as practices that yield positive outcomes for students, when used effectively, as vetted through peer reviewed research (Cook & Odom, 2013; Simpson et al., 2007). The majority of EBPs have yet to be fully implemented in many school districts (Odom, Cox, & Brock, 2013; Tincani et. al., 2014). Currently, the NPDC has identified 27 EBPs that have been shown to be effective with

children with ASD. This research group conducted a literature review to identify effective practices and adopted practices from the NAC.

For students with ASD, implementing EBPs has significant implications for the instructional practices of teachers as well as short- and long-term student achievement outcomes. At this time, there is no agreement in the field about what EBPs are effective for the entire range of individuals with ASD (Cook & Odom, 2013). While not one universal intervention is effective in the same way for one individual with ASD as it is for the next individual, applying effective practices can facilitate positive learning outcomes for students whose skill deficits are multiple grade levels below their same-aged peers (Cook & Odom, 2013; Simpson et al., 2007).

Many children with ASD receive services as early as three years-old in public schools. In these settings, many service providers (e.g. teachers, paraprofessionals, related service providers) are responsible for delivering EBPs. Meeting the needs of these students presents challenges to many educators (Brock et al., 2014). Specifically, educational staff are tasked to use identified EBPs shown to be effective in working with this population (Simpson et al., 2007). While some teachers may implement one or more EBPs, the teacher is often not implementing the practice as intended (Cook & Odom, 2013). Evidence suggests that teacher education and ongoing professional development could be insufficient in the area of EBPs (Wong et al., 2015). Variability in teachers' abilities and willingness to adapt practices to meet the needs of students has implications for continuing education provided by school systems (Hammerness et al., 2005). Without systematic understanding of the factors that facilitate these processes at the systems level, initial investments in EBPs are ineffective and impact is limited (Willging et al., 2015).

Inadequate teacher development. Professional development is defined as a type of continuing education that aims to increase teacher knowledge, practice, and implementation of EBPs (NCLB, 2001). Annually, public schools spend 20 billion dollars on professional development to improve student outcomes and produce or maintain highly qualified teachers (National Center for Educational Statistics [NCES], 2008). To date, research has focused on coaching and consultative models that increase the capacity of practicing teachers in implementing EBPs. However, the implementation of EBPs by teachers remains a concern in the literature. For example, one study reported less than five percent of teachers used EBPs in their classroom (Morrier, Hess, & Heflin, 2011).

Educators agree that EBP implementation will result in better student outcomes (Cook, Smith, & Tankersley, 2012). As EBPs have been identified, there has been little attention given to how to implement these practices in school settings and an assumption that special educators would be willing and eager to use and apply these practices (Fixsen, Blasé, Naoom, & Wallace, 2009). Implementing and sustaining new practices is complex given teacher education and principal leadership needed. Practicality of implementation of these strategies is necessary for teachers to adopt, support, and use new practices (Klinger, Boardman, & McMaster, 2013). Fixsen and colleagues (2009) indicate that implementation of EBPs is different than choosing a promising practice to implement. Promising practices are limited by insufficient evidence of effectiveness. Fixsen, Blasé, Metx, and Van Dyke (2013) report that organization systems, such as public schools, attempt to implement EBPs on a large scale with small scale systems change efforts.

The widespread adoption of EBPs requires researchers and district personnel to work closely to address district-specific contextual factors (Klingner et al., 2013). According to the

Institute of Education Sciences (IES), scaling up is the process of implementing practices on a small scale to "understand the organizational conditions needed to support the intervention" in real settings (Cook & Odom., 2013, p. 138). Sustainability is reported to be a significant challenge in scaling up. Given that implementation wanes following embedded technical support, principals are critical in internally managing EBPs for students with ASD (Odom et al., 2013). To date, little evidence has been provided around what internally managing these practices should look like for principals based on their role as instructional leader and manager of the building.

      Inadequate principal development. Burdette (2010) reported that principals receive education and development in educational leadership on day-to-day operations, but lack the skills necessary to supervise and monitor EBPs, particularly for students with ASD (Ernsberger, 2002). Rowland (2017) provided evidence that some principals lack day-to-day operational skills, and require further development in this area as well as others. With high litigation linked to inadequate principal development, a principal's ability to act as an instructional leader is directly linked to confidence in pedagogical knowledge (Loiacono & Palumbo, 2011). Principals are often provided development in national and state initiatives, and a recipient of a teacher designed development opportunities (Rowland, 2017). Teacher professional development remains a steady recipient of most of the professional development funds provided at the state and national level. However, implementation is a complex process that requires behavior change for not only practitioners, but leaders (Fixsen et al., 2009). The need for ongoing professional development in special education has been well-established (DiPaola & Walther-Thomas, 2003; Lynch, 2012; Searby, 2010).

Most recently, McCarthy, Shelton, and Murphy (2016) analyzed the policy impact of the *Interstate School Leaders Licensure Consortium* ([ISLLC], 2008) Professional Standards for Educational Leaders (PSEL). These professional standards were adopted in Virginia in 2012, and modified as the *Uniform Performance Standards and Evaluation Criteria for Principals* (VDOE, 2015). To date, scholarship is limited on areas of policy and practice of these standards. Virginia directs district level superintendents to evaluate principals in the following manner: (a) 40% student academic progress, and, (b) 10% on each of the first six standards. The first six standards include: (a) instructional leadership, (b) school climate, (c) human resources management, (d) organizational management, (e) communication and community relations, and, (f) professionalism. Consequently, these state recommendations conflict with recent research findings provided by leading research organizations such as the Wallace Foundation and the American Institute of Research (AIR). With limited research on the immediate and distal outcomes of this stance, the exploration of the leadership dispositions and continuing education priorities of principals who support EBPs is needed to reflect best practices for principal development.

Significance for Rethinking Principals' Professional Development

The next section details the analysis of considerations on the significance of rethinking professional development needs of principals. To answer the secondary purpose of this review, significance will be explained in the following sequence: (a) implementation of evidence-based practices, (b) job expectations, (c) teacher attrition, and, (d) student behavior.

Implementation of EBPs. Fixsen and colleagues (2013) claim implementation is the critical link to solving the research-to-practice gap. In the field, teachers are directed to adhere to program with fidelity without respect to the complex organization system (Klingner et al., 2013).

Often, teachers are implementing EBPs without their principal's knowledge, or support. Implementation science has emerged to assist researchers, educators, and policymakers in generating theories regarding implementation of EBPs and sustainability of practices through organizational systems change processes (Cook & Odom, 2013; Odom, Cox, & Brock, 2013). Implementation science is defined as "a definable set of strategies and processes that promotes the systematic use of evidence-based practice into routine practice" (Odom, Cox, & Brock, 2013, p. 138). Principals are key implementation drivers to ensuring that this programming can be successfully installed within an established school culture with competing federal, state, and school initiatives. Implementation drivers are considered the "engine of change" and facilitate the consistent use of innovative practices (Fixsen et al, 2005; National Implementation Research Network [NIRN], 2016). These drivers create processes and organizational supports to establish a receptive environment for change and arrange for contingencies that foster effective implementation of their staff. Future research needs to consider the context, expectations, and perceptions/attitudes of others on the support needed to implement practices on a large scale for specific populations.

Job expectations. Principals are required to provide instructional leadership and manage a broad array of building operations. In addition, principals establish and support school climate to promote growth for teachers and students (Wakeman, Browder, Flowers, & Ahlgrim-Delzell, 2006). In the past, principals were primarily responsible for discipline and oversight of teachers (Mills, 1974). Today, the principal's role has evolved to include leadership of personnel, finance, instruction, strategic planning, public relations, students, and academic performance (Portin, 2004). As legislation has brought ASD to the forefront of the educational context, NCLB (2002) and IDEA (2004) increased principals' involvement in special education related activities. Based

on these pieces of legislation, the principal's role is to ensure students with disabilities are being instructed in their least restrictive setting (Lasky & Karge, 2006). The need for more direct guidance on how to support the ASD population, teachers, staff, and initiatives that increase outcomes for all, becomes imperative for building leaders.

Principal's role, teacher attrition, and student behavior. Teacher attrition and satisfaction is a contextual factor that influences a principal's role, definition of support, and ability to successfully implement EBPs in school settings. With school districts struggling to retain and hire highly qualified teachers, these leaders are faced with supporting teachers with various teaching experiences, needs, and student populations (Sindelar, McCray, Brownell, & Lignugaris-Kraft, 2014). Given complex roles and the support needs, teachers' perceptions and attitudes towards these building leaders are varied based on the school vision, goals, and individualized resources and support for teachers.

Leithwood and Jantzi (2006) defined principal leadership as the following four leadership practices: (a) building school vision, (b) developing specific goals and priorities, (c) offering individualized support, and, (d) developing a collaborative school culture. Lack of principal leadership is defined as a reason for teacher attrition, linked to lack of support with students with challenging behavior, by the inability to institute programming needed for specific populations, and by the pressures to target several initiatives at one time (Ingersoll & Smith, 2003; Ladd, 2009). Not only is principal leadership a predictor of teacher satisfaction and attrition, behavioral climate is another factor that can influence personnel satisfaction and implementation of EBPs. Teachers strongly associate dissatisfaction with student behavior, which is similar to related dissatisfaction with salary (Liu & Meyer, 2005).

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Summary of conceptual review. Little research has focused on defining *how* principals can internally, *reasonably* manage EBPs. Rowland (2017) reveals that principal development focuses on the "what" instead of the "how" which leaves leaders to fail. Provided ongoing development and job-specific education, principals could learn specific leadership skills detailed by professional and state guidance. It is critical that these leaders be targeted within the first three years of employment, or sooner, depending on the school context. At times, principals are expected to understand each of the 27 EBPs, know what it should look like in a classroom, and outline resources for teachers when these practices are absent or weak. However, these leaders are multi-tasking daily operations, school level improvement, teacher support, and student success. These conditions make it "impossible" for principals to support higher need populations (Rowland, 2017).

Next, implementation science and collective impact theory will be detailed to provide evidence towards a large-scale conceptual framework to address some of the significant issues discussed earlier in this paper. First, implementation science will be described with a focus on principals as implementation drivers. Then, collective impact theory will be proposed as a complementary framework to implementation science. An analysis of this merged conceptual framework will provide clear direction for addressing chronic professional development gaps for principals and other related stakeholders.

The Merging of Two Conceptual Frameworks

Implementation science recognizes the process and structural features of implementation that impact a leader's ability to implement backbone structure and support in school settings with competing initiatives. Collective impact theory complements the implementation science framework in that there is a larger social issue to be addressed, which is the provision of FAPE

and LRE to students with ASD who have complex educational and behavioral needs. Implementation science enables teachers, principals, and district leaders to understand their role in the implementation of EBPs. Collective impact theory provides a systems framework for addressing the social issue of students with ASD accessing FAPE and LRE because their school systems are prepared to provide EBPs.

   Implementation science. Common features of implementation science models include planning by a team of professionals, assessment of implementation readiness and contextual variables, as well as capacity building dimensions at the organizational system level (Fixsen et al., 2005; Odom et al., 2013). Building leaders directly influence resource allocation, staffing, structures, and operating processes that can and cannot be done within the organizational context of the school building (Nanus, 1992). In particular, implementation science addresses the behavior of professionals (e.g. principals) that impedes effective implementation at different stages of the process (Fogarty International Center, 2010). Additionally, this framework focuses on the processes and factors that investigate the transfer of the core components of an intervention into the school setting, simultaneously enhancing the culture of the context for which the components will be implemented (Rabin & Brownson, 2012).

   Fixsen and colleagues (2011) identified stages of implementation which include exploration, installation, initial implementation, and full implementation. In the exploration stage, implementation teams (e.g. state, school district, school building personnel, and/or teachers) assess readiness to implement new programming and identify needs for specific resources. The installation stage is purposed to reallocate and acquire needed resources to meet the needs of programming and to prepare staff to effectively implement EBPs. The initial stage is when teachers and building leaders implement new practices and discover barriers that impede

early implementation. Full implementation is achieved when 50% of more of key stakeholders implement effective practices with fidelity (Fixsen et al., 2005). While some programs designed to target the specific needs of students with ASD have been manualized, large-scale implementation remains a challenge of these programs by teachers who report a lack of principal leadership in authentic, school-based settings focused on academic achievement (Zirkel, 2011). Relationships between contextual factors and EBP implementation need to be explored at the organizational level with respect to context-sensitive adaptability and flexibility within fidelity of implementation (Ghate, 2016). Lack of principal leadership is frequently cited as an issue for sustained implementation (Odom, 2009). Few studies have explored the construct of principal leadership and its influence on short-term and long-term implementation. Most recently, two studies emerged in the literature proposing investigation of individual and organization factors in educational settings regarding autism interventions (Locke et al., 2016; Stahmer et al., 2018). Each study will use various measures to assess individual and organizational attitudes and attitudes towards implementation. Implementation science framework provides a systematic plan for implementation of validated practices in various contexts. There continues to be a need for context-sensitive measures of assessing *how* implementers adapt practices to address circumstances not accounted for in initial implementation (Ghate, 2016).

      Collective impact theory. Implementation research has used broad logic models to explore the influence of contextual factors on extending its application to EBP implementation. To delve deeper into the construct of principal leadership and its impact on student outcomes, collective impact theory is a set of observable and replicable guidelines used to measure, encourage, and achieve social change, so that any organization can follow them (Kania & Kramer, 2011). This approach addresses the need for large-scale impact and unified efforts to

make lasting social change. In this case, lasting social change equates to specific personnel working collaboratively with several agencies to achieve the same agenda. Currently, many organizations (e.g. local, state, and national) are addressing issues in the principalship. However, each of these organizations are achieving isolated impact. In order to achieve collective impact, there needs to be cross-sector alignment and learning across key organizations. National organizations and the state department of education are essential to achieve collective impact (Hanleybrown, Kania, & Kramer, 2012).

Three preconditions need to exist for a collective impact initiative to launch, including: an influential champion, adequate financial resources, and a shared sense of urgency for change. These preconditions establish opportunity and motivation necessary to bring a group of leaders together until the initiative's momentum ignites. Most important to this initiative is the influential champion who leads the small group of leaders to problem solve on the common agenda and make decisions together for the betterment of the project (Kania & Kramer, 2011). Once preconditions are established, three initiative phases can be discussed and targeted for implementation, including: (a) initiate action, (b) organize for impact, and, (c) sustain action and impact. In phase one, key players collect baseline data on a targeted problem to build a case for change. During this phase, strong and credible champions are recommended and selected for the team. At the start of phase two, selected stakeholders from various local, state, and national agencies, work together to develop common goals and shared measures, a backbone infrastructure is created, and the process of aligning initiatives and organizations to the shared goals is established. In phase three, stakeholders begin working systematically in prioritized areas, collecting data on specific goals, leaders are putting systems and processes in place that enable others to do what is necessary to meet their goals (Kania & Kramer, 2011).

Analysis of Conceptual Frameworks

Earlier evidence presented by Klinger and colleagues (2013) revealed that principals discount evidence that does not support preexisting attitudes. Levin (2010) concluded that it is necessary to understand how building leaders use research to make leadership decisions. Principals are left to figure out *how* to implement best practices and drive several initiatives alone. It is necessary to begin to view current literature based on these conceptual frameworks in order to identify how these leaders prioritize their ongoing development needs and the needs of their staff based on supporting students with ASD. Further, the state initiatives impacting school-level priorities could be influencing principal leaders' decisions to place students with ASD and challenging behavior out of district. Inadvertently, the misalignment of local, state, and national priorities can be jeopardizing the common agenda of each agency.

Implementation science encompasses three concepts that target individual behavior: (a) the environment within which the program is being implemented and its impact on the individuals, (b) individual perceptions as it relates to being part of a social system, and, (c) the influence of the social systems on the implementers. Implementation science identified stages that begin to help break down how to *internally manage* evidence-based practices. Collective Impact Theory is a complementary systems theory that ensures building leaders align initiatives to one common agenda in the school, and that effort, activities, expertise and resources are provided towards that one common agenda to bolster change efforts. This will ensure that teachers and other professionals see the overarching principles of collective impact theory bridging the broader agenda of providing FAPE and LRE for students with disabilities. Yet, collective impact theory alone could not address the broader scope of supporting the building level leader into the detailed implementation and development of leadership roles, expectations

from personnel, and contextual influences on decision-making. Assimilating initiatives with similar purposes, sharing leadership with support staff, and clinical building leader development is necessary for continual growth of these leaders to achieve expected large-scale outcomes.

Systematic Literature Review

Purpose and Method

The following section details the procedures used in identifying studies and extracting information for this chapter. Studies included for review were organized and vetted using inclusion criteria prior to review and synthesis. Each included study was analyzed for specific criteria, including research design, method, participants, and results.

Search procedures. Searches were conducted in the following electronic databases: psycINFO, Educational Resources Information Center (ERIC) via ProQuest, Academic Search Complete (EBSCO), Google Scholar, and Wiley Online. The following search terms were used: autism, administrator, programming, inclusion, implementation, professional development, scaling up, evidence-based, collective impact, principal leadership, knowledge, perceptions, and attitudes. Publication year was restricted from 2001 to 2016. This restriction was necessary to take the passage of NCLB (2001) into consideration, which impacted role of the principal to a lead instructional role. Additionally, this restriction captured the 2008 and 2015 revisions to the ISLLC standards for educational leaders, the revision and adoption of ESSA in 2015, and the 2015 comparison analysis of the NPDC's 27 EBPs and the NAC's National Standards Report for research validated practices for children and youth with ASD. Scholarly journals such as *Educational Leadership, Journal of School Leadership, and Journal of Research on Leadership Education* were also reviewed to identify additional articles. The electronic search identified 2,342 articles using various combinations of the identified search terms.

Inclusion and exclusion criteria. In order to be included into the review, studies had to meet specific inclusion and exclusion criteria. First, the study participants had to be principals or building level administrators. Other leadership roles such as special education administrators, district level leaders, and other special education consultants were excluded. Studies with comparison groups such as teachers only, consultants only and parents only were excluded as well. Only literature specifically targeting the perceptions and attitudes of adult learning outcomes and child placement outcomes were included. Editorials, book reviews, introductory articles, dissertations and literature reviews were excluded because they recounted information from primary sources already included among identified articles or the information was not directly related to construct of principal leadership and scaled implementation of EBPs. Studies were required to be published in a peer-reviewed journal. Lastly, a study that had a dependent variable of principal's or administrator's knowledge, attitudes, or attitudes about placement or evidence-based practices used for students with disabilities or for students for ASD were included into the reviewed studies. A flow chart explaining the search in detail is provided in Appendix A.

A total of nine peer-reviewed published articles, including one policy forum document, met the criteria and were included into this review. The studies were reviewed and synthesized by quantitative, qualitative, and mixed method research designs. The quality research indicators used to evaluate the rigor of the included studies will be discussed at the beginning of each research design section. Following individual review of each study, limitations of the collective studies will be discussed. In the next section, each reviewed article will be described to include the research purpose, data analysis, and findings to accompany details provided in Table 3.

Table 3

Assessment of Included Studies Organized by Research Method

Author & Date	Research Method	Theoretical Framework	Participants *(n)*/Design	Key Findings	Future Research
Praisner (2003)	Quantitative	Inclusion	408 elementary principals – random selection from Pennsylvania 54% response rate after two mailings 6-10% of student body students with disabilities	The more positive the inclusion score, the more positive the placement recommendations General education settings were chosen less likely for ASD. Most segregated settings were chosen for ASD.	Research to account for the different conditions that principals face Improve principal preparation related to special education programming Ensure positive experiences with inclusion of students with disabilities
Ball and Green (2014)	Quantitative	Theory of Planned Behavior: behavior evolves from attitude, behavior influenced by past and present experiences	170 K-12 principals Praisner's PIS Survey – modified to include IDEA disability categories	Principals have the least amount of experience with ASD School leaders are not prepared to lead and manage special education programs School leaders support LRE when less support and fewer resources are needed	All school leaders have varying levels of autonomy Investigate the relationship between special education department and principal State requirements for school leadership certifications need to be explored

Author & Date	Research Method	Theoretical Framework	Participants (n)/Design	Key Findings	Future Research
Horrocks, White, and Roberts (2008)	Quantitative	Inclusion	1500 Principals Stratified Random Sample of Pennsylvania public school principals Survey: Principal's Perspective Questionnaire	Professional experience teaching or supervising children with ASD had a positive correlation to Inclusion Attitudes Principals' length of service was negatively correlated with Inclusion Scores Principals are more likely to include a student who is academically stronger	Analyze the difference between tenured principals and general population of principals Need to disseminate knowledge about autism to principals, behavioral characteristics in particular Increase in-service principal development opportunities
Wakeman, Browder, Flowers, and Ahlgrim-Delzell (2006)	Quantitative	Inclusion	National Secondary School principals – 2004 Mailing List – 36% response rate (362/1000) Systematic Sampling Method: 15, 286 / 1000 randomly selected principals Tailored Design Method Acceptable sample size: 375	Principals most often used resources from their school district (73%) Principals did not agree that student assessment scores should count in the school accountability scores. Principals rated discipline as one of their highest knowledge areas The lowest rated knowledge items were: train teachers, and conduct FBAs	Principals need further professional development to use research for educational improvement Need information on dissemination practices for principals Need for preparation on being a reflective leader of programs for students with disabilities Impact of principal practices on school improvement plans for students with disabilities

Author & Date	Research Method	Theoretical Framework	Participants (*n*)/Design	Key Findings	Future Research
Burdette (2010)	Qualitative Policy Document	Leadership and National Standards	Web-forum Focus Groups (2-5 hour sessions) National Organizational Reading Materials Thematic Analysis for Recommendations	Difficulty developing a shared vision and supportive school climate The need for formal and informal mentor/internship opportunities that target individual needs Conceptual change of the principal role Need for shared leadership due to complexity of principal role	Need more research on how principals can exercise leadership with competing demands Lack of ongoing professional development Lack of targeted principal preparation through induction Lack of alignment between principal evaluation, preparation, and standards Lack of knowledge in special education trends and law
Hoppey and McLeskey (2013)	Qualitative	Phenomeno-logical lens: studying the lived experience of one principal	Purposeful Sampling – Case Study Methodology Principal has extensive and successful experience in working general and special education reform A small percentage (under 3%) – ASD	Role of the principal is to provide a supportive setting to teachers to do their best work Ethic of care: build and sustain relationships, create a community of values/personal investment Buffer teachers from external pressure Promote Teacher Growth	Need for principals to distribute leadership to teachers High level of rigor is needed in principal preparation programs Principal is critical in the school change process Need for cross-case analyses, look at schools with critical contextual factors

Author & Date	Research Method	Theoretical Framework	Participants *(n)*/Design	Key Findings	Future Research
Carraway and Young (2015)	Qualitative	Examine principals' experiences implementing skillful observation and coaching	Small, rural school district that hired a technical assistance group to train principals on Skill Observation and Coaching Laboratory Criteria based sampling – current principals in county, current school for 5 or more years 3 principals met criteria	Content knowledge, pre-existing knowledge, structural conditions, social interactions, meaningfulness, identity as an instructional leader and positive feelings influenced implementation Named specific teacher talents with ease Liked professional learning community modality	Lack of consideration for structural conditions – managing the school, district initiatives Full implementation was impeded by not aligning with district initiatives
Loiacono and Palumbo (2011)	Mixed Method	Applied Behavior Analysis	60 elementary school building principals 85% participation rate Survey via interview	45% of principals reported they assumed responsibility for evaluation teachers of students with ASD 67% of principals reported that they were confident in their pedagogical knowledge and professional obligations 19 out of 51 principals recommended additional preparation in EBPs	Adjust IHE curriculum and follow-up with principals to assess preparation to level of success in the field

Author & Date	Research Method	Theoretical Framework	Participants (n)/Design	Key Findings	Future Research
Tibbetts, Bumbarger, Kyler, & Perkins (2010)	Mixed Method	Community/ school readiness and sustainability	Three data collection periods (2001-2007) 64% response rate for first data period (survey completion in person) 73% response rate for second data period (survey completion in person) 76% response rate for third data period (survey)	After 1-3 years, practices were being implemented at a reduced level compared to the final funding year. Predictors of post-funding sustainability: (1) program staff, (2) overall school support, (3) school administrator support Correlates of post-funding sustainability: 1. Planning for financial sustainability 2. Planning relevant to aligning the intervention with the goals of the school 3. Leader support was at a significant trend level	What is the process by which schools make decisions regarding the priority of implementing evidence-based practices? How can prevention scientists help guide and support these efforts to promote long-term sustainability or evidence-based programs? How can implementing agencies modify and reduce intervention components over time to fit their vision? Are decisions about eliminating intervention components made at the agency/school level or level of program?

Overview of Quality Research in Special Education

Odom and colleagues (2005) examined the implications for special education research. In particular, the policy emphasis on randomized control trials sparked by NCLB (2001) requires further analysis to consider the special education contextual continuum. Following NCLB (2001), the U.S. Department of Education Institute for Educational Sciences (IES) was established in 2003 to continue the improvement effort of quality knowledge dissemination about

effectiveness of practices. Given that EBPs are underutilized in the school setting, the research-to-practice gap is an established issue in the field (Odom et al., 2005). To support the evidence for a merged conceptual framework discussed in this paper, Odom and colleagues (2005) encourage the identification of contextual and organizational factors that affect implementation of EBPs in the development process.

In addition to using Odom and colleagues (2005) quality indicators for published research, Thompson and colleagues (2005) provided additional indicators for correlational research. These indicators included: (a) reliability and validity of measurement, (b) practical and clinical significance of findings, (c) reporting and analyzing of effect sizes, and, (d) precision and persuasiveness of statistical methods (Thompson et al., 2005). The American Educational Research Association (AERA) standards for reporting empirical social science were considered for the review of each individual study. Given that not all reviewed studies were correlational, quasi-experimental or single-subject designs, the AERA standards provided a broader lens to review the quantitative research articles. The following standards were reflected critically: (a) the statistical analyses conducted and appropriateness, (b) descriptive and inferential statistics, (c) considerations in data collection process and data analysis, and, (d) detailed analysis and critique of statistical results (American Educational Research Association [AERA], 2006). The studies are presented in the following order: quantitative, qualitative, and mixed methods. At the beginning of each new methodology review section, additional indicators and definitions used for critical review will be provided.

Related quantitative research. Praisner (2003) investigated the attitudes of elementary principals toward inclusion of students with special needs. Quantitative data was collected to analyze the relationships among demographics, preparation and experience, attitudes towards

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inclusion, and principal attitudes about most appropriate placements. In order to determine statistical significance between surveyed continuous variables (e.g. years of experience, age, years in preparation) and attitudes of elementary principals, the author computed a Pearson-Product Moment Correlation (PPMC). Data was interpreted using inclusion as a conceptual framework. Each dependent variable (e.g. inclusion attitude score for students with severe and profound disabilities) was analyzed by frequency and percentage.

Given a 54% response rate, attitude scores fell in the uncertain range for 76.6% of the participants because principals were less favorable towards specific wording related to mandatory compliance. Most significantly, Praisner found that general education settings were chosen less frequently for students with ASD (30.1%); 49.8% of respondents reported that students with ASD/pervasive developmental disorder were placed in the most segregated settings in special education services outside of general education schools and special classes. Principal attitude and attitude development were an integral part in the implementation of EBPs and placement of students in least restrictive settings. Unlike other studies that defined experience as the number of years as a principal, this study looked at the types of experiences the principal had with specific disability populations.

Ball and Green (2014) examined the experience and preparation impact on school leader attitudes toward inclusion of students with disabilities in the general education setting. These researchers defined *attitudes* as "school leaders' feelings or positions toward educating students with disabilities" and *experience* as "personal or on the job practices, observations, or interactions with students with disabilities" (p. 60). Unlike other reviewed studies, the theory of planned behavior guided these researchers' assumptions. Given this framework, behavioral attitudes are shaped by past and present experiences and previous and recent knowledge and

preparation. As such, Ball and Green (2014) assumed that school leader behavior is determined by the intent to implement inclusive practices.

With a response rate of 81%, school leaders reported that 5% to 20% of the student body consisted of students with disabilities. Seventy-five percent of the respondents reported no full-time special education teaching experience, with 86% not certified to teach special education. The majority of participants reported 25 or more hours in inclusive practices, and 0 to 5 years of experience as a principal or assistant principal. Consistent with Praisner's (2000) findings, principals endorsed statements that suggested students with severe and profound disabilities and students without disabilities do not benefit from being taught together, and see inclusion as an optional practice.

Dangel, Conard, and Hopkins (2003) tested the principal's ability and importance of principal involvement in follow-up with teachers following teacher-directed professional development. Different from the other studies, 18 elementary school teachers were selected, six from each of three schools. The researchers did not want to have participants from the same school in the same experimental group; each group of six educators formed an experimental group. Educators were not informed of the specific skills that the in-service professional development targeted. Each of the school experimental groups had a principal attached that was required to follow-up with teachers weekly. Participants were required to attend teacher education meetings, watch five videos, read a written manual, observe trainer-conducted checkouts, and conduct practice checklists. In addition, school building leaders attended weekly teacher education meetings. A total of six development hours was completed by the three principals. Each week, they observed each of the six teachers for 15 minutes, once per week for five weeks. Each completed 83% of required development visits. Educators were surveyed on

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the process, and the principals were not interviewed or surveyed on their specific professional development.

Given the use of a multiple baseline design, educators were assessed under baseline conditions, with intervention data collection beginning after they mastered development elements. Similar to Tibbetts and colleagues (2010), these researchers analyzed the maintenance period of techniques taught during preparation program, using percentage of intervals that the techniques remained in place. Student behavior was collected, analyzed and reported. The impact of instructionally-focused principal classroom visits on teacher behavior was experimentally evaluated. The post-preparation maintenance phase of teacher practices was found to be critical in affecting individual teacher behavior change. However, the teacher control group demonstrated preparation-related techniques following baseline at higher rates, indicating that other school factors could contribute to effective teacher behavior change. Teachers reported that principals, specifically trained in this study, provided objective data, possible solutions to classroom problems, and positive reinforcement on implementation of skills. Prior to the study, teachers reported that performance evaluations were subjective, and often focus on personality characteristics.

Horrocks, White, and Roberts (2008) utilized a survey research design to identify the attitudes of principals regarding inclusion of students with disabilities, and the relationship of those attitudes to placement recommendations for students with ASD. The survey was sent to 1,500 principals within the Pennsylvania public school system. A stratified random sample of Pennsylvania school principals was conducted. Of 1,500 principals surveyed, a total of 571 respondents participated. A response of 38% was obtained. The researchers computed an Inclusion Attitude Score (Horrocks et al., 2008).

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The independent variables were principals' personal characteristics (e.g. school level, gender, years of experience as a principal, years with the district, experience serving children with ASD, belief that students with ASD could be included, personal experience, and overall experience with inclusion) and Inclusion Attitude was the dependent variable. A higher inclusion attitude score was found to be associated with principals who believed students with ASD could be included into the general education classroom. Professional experience with students with ASD was associated with a higher inclusion attitude score as well.

Out of the five case studies, the two students with the highest academic capabilities were more likely to be included by principals. A factor analysis was utilized in an attempt to explain the profile of students typically included by principals. The researchers computed two factor scores: Inclusion of Socially Detached Children and Inclusion of Academically Strong Children. These factor scores were later added as additional dependent variables. One interesting finding of this study was that principals who had longer tenure were less likely to have high inclusion attitudes.

Wakeman, Browder, Flowers, and Ahlgrim-Delzell (2006) used systematic sampling from the 2004 National Association of Secondary School Principals mailing list to determine the comprehensive knowledge of national secondary principals on special education issues. This study examined all 50 states, versus other studies reviewed that focused on one school district, multiple school districts, or one state. Of 362 respondents, the response rate was 36%. Most respondents were male, between the ages of 41-50, and served students with high-incidence disabilities. High-incidence disabilities was not defined. Given that the article was published in 2006, the ASD population was still considered a low-incidence disability at the time.

Fundamental knowledge levels of the 362 respondents was computed via an exploratory factor analysis. The researchers identified specific factor groups: (a) daily routine (e.g. discipline, collaboration, and advocacy); (b) current issues (e.g. transition, positive behavior supports, and inclusion); (c) evaluation (e.g. best practice instructional strategies, program evaluation, and universally designed lessons); (d) legislation (e.g. NCLB and IDEA); and (e) fundamental knowledge (e.g. characteristics of disabilities and inclusive school climate). Each of these factors captured principal practices, knowledge, and characteristics of school climate and students with disabilities. Based on these factors, the belief that students with disabilities should have access to general education curriculum had a significant relationship with the factors, evaluation and fundamental knowledge. In the next section, consistent findings found in quantitative studies will be examined across the qualitative studies.

Related qualitative research. Brantlinger and colleagues (2005) defined qualitative research as "a systematic approach to understanding qualities, or the essential nature, or a phenomenon within a particular context (p. 195)." One purpose of this research is to produce knowledge that can be effectively disseminated to understand professionals who work with individuals with disabilities. The credibility measures outlined by Brantlinger and colleagues (2005) included: (a) triangulation, (b) disconfirming evidence, (c) researcher reflexivity, (d) member checks, (e) collaborative work, (f) external auditors, (g) peer debriefing, (h) audit trail, (i) prolonged field engagement, and, (j) thick description. Quality indicators include components for each of the following subheadings: interview studies, observation studies, document analysis, and data analysis. In this section, these credibility measures and quality indicators will be explored in a reflective way that is logical for each individual study.

Burdette (2010) defined challenges to the availability of skilled and knowledgeable

principals, and, through those challenges, identify policies and practices to address those

challenges. Given the lack of policy attention to principal leadership, Burdette (2010) provided

recommendations based on focus group conversation coding and analysis. Given this study was a

policy document, the data analysis was not clear or detailed. Each challenge identified was

explored by workgroups established within the larger focus group. These need areas were

explored in more detail based on the complexity and importance of the issue. Therefore, the

recommendations varied in detail for each challenge. In the area of preparation, ongoing learning

and recruitment/retention, the focus group identified seven challenges with accompanying

recommendations. These included, a lack of: (a) ongoing professional development, (b) targeted

principal preparation, (c) alignment among national and state principal evaluation and

preparation standards, (d) knowledge in current trends in special education, (e) preparation/skills

in leading from the middle, (f) sensitivity to issues faced by diverse populations, and, (g)

recruitment and retention efforts given work conditions.

Hoppey and McLeskey (2013) refined other researchers' broad studies to determine how

one effective principal institutes organizational change within the school context. Similar to

teacher reports in Dangel and colleagues' (2003) study, findings suggest that a common vision of

"lubricating the human machinery" is by caring for and personally investing in his or her

teachers, buffering teachers and staff from external pressure, and promoting teacher growth

through shared leadership to meet the common agenda.

Carraway and Young (2015) investigated the effectiveness of a principal preparation

program that provided coaching and direct observation feedback to principals on their

implementation of instructional leadership tasks to enhance DiPaola and Walther-Thomas'

(2003) recommendations. Other dependent variables evaluated in aforementioned studies were included into this studies' findings, such as content knowledge of principals, attitudes and attitudes, and structural conditions. Unique from other studies, these researchers explored the situated context of the principal (e.g. structural conditions, and the challenges to implementation due to structural conditions) which is one of the main research purposes of this review.

The intended outcomes for principals measured were recognition of instructional patterns in the classroom, identification and retrieval of teacher talents from memory, and utilization of coaching to improve teacher skills. Participants reported that managing the school, district initiatives, and intensity of program impacted their ability to implement the program as designed, and required adaptations. Despite superintendent investment, other district initiatives outweighed the implementation of this particular program. Empirical evidence suggests a need for collective agendas district and school-wide to navigate through challenges that impact principal practices, when the isolated agendas may all serve a similar purpose in origination.

Two mixed methods studies will be reviewed in the following section to further investigate the perceptions of principals on their leadership skills, dispositions, and actions related to EBPs and sustainability of these programs.

Related mixed methods research. Loiacono and Palumbo (2011) examined principals' confidence level based on previous preparation. These researchers hypothesized that building leaders who understood the principles of Applied Behavior Analysis (ABA) could better support educators who teach children with ASD. Unlike other general application of survey methodologies, an exploratory mixed methods design was used to administer a survey via interview. With the highest response rate of 85%, graduate students were used to interview building principals on eight questions, of which six were yes/no and the last two questions were

open-ended. There was no mention of preparation in the interview protocol. Unlike Praisner's (2003) study, 86.3% of respondents stated that students with ASD received instruction in inclusive settings within their elementary school compared to 13.7% who reported no students with ASD were in the general education setting. Considering the principal's confidence level in supporting teachers who teach children with ASD, 62.7% of principals reported that they were confident in executing their professional obligations. Principals reported qualitatively that more support from their special education colleagues, and the ability to view model programs would be beneficial.

Presenting a scaled up approach to a building leader's role in sustainability of practices in specific contexts, Tibbetts, Bumbarger, and Perkins (2010) broadly explored the factors associated with sustainability of evidence-based practices in schools, and other community agencies. These authors discuss specific factors that influence a principal's' attitudes and practices (e.g. misalignment of practices to school goals, lack of organizational capacity, and school-based leadership). Several large-scale measures were collected from participants engaged in their technical assistance project. Barriers to program implementation data sources were pulled from a community readiness scale, financial collaboration scale, quality of preparation indicator, and two sustainability planning indicators (e.g. financial and existing school initiative alignment).

Tibbetts and colleagues (2010) employed three data collection periods. Findings revealed that scaled implementation sustainability of technical assistance projects after embedded support exits the school or agency varied. Level of sustainability was selected as a measure given empirical evidence that schools who lack organizational capacity are less likely to sustain practices that are misaligned with school goals. Key findings were that post-five years, program

funded practices were still being implemented. Specifically, 47% of school/agency teams were implementing practices at a reduced level after one year without funding and embedded preparation support. After five years of support, 45% of schools/agencies implemented at least nine practices at the same level or higher in the last year of funding. Many schools/agencies were eliminating components of practices and decreasing site visits to support those implementing practices. The decision-making process to prioritizing large-scale evidence-based intervention projects was not explored in this study. To elaborate on key findings briefly discussed in the review of all nine studies, a synthesis of these findings will be presented in the next section. Additionally, the three main implications identified from this review will guide the latter discussion towards future research.

Synthesis of Findings

Synthesis of findings show fragmented measurement and defining of the construct of principal leadership in large-scale implementation research frameworks. Three main implications for defining this construct suggest, that: (a) principals have a direct and indirect effect on student achievement through the setting of expectations, establishment of a shared vision within the school climate, and demonstration of strong leadership; (b) large-scale implementation projects need to develop a focused development program for principals to support the long-term sustainability of evidence-based practices, and (c) principals are aware of deficits/gaps in their education and professional development. Each main implication is discussed as it relates to reviewed research findings with links to implementation science and collective impact theory as a blended conceptual framework.

Effect on student achievement. The principal is indirectly and directly associated with student achievement (Leithwood et al., 2004) and sustainability of programs within a school

context (Rowland, 2017). It is critical that principals understand how to set expectations for staff and students that reflect a collaborative school culture with a mutual vision (Hoppey & McLeskey, 2013; Kania & Kramer, 2011). Often, special education programming is overseen by central office and housed within the school buildings. Building leaders need development on how to navigate their autonomy with special education staff residing within their buildings and at central office (Dou, Devos, & Valcke, 2016). It is promising that principals seek resources from within their school first (Horrocks et al., 2008). These key leadership dispositions and actions should be captured in a personnel development approach for principals (Rowland, 2017). If these dispositions and actions are simply expected, then principals will continue to vary in their abilities to "lead from the middle" and be an instructional leader for all students and all teachers (Dou et al., 2016; Hoppey & McLeskey, 2013; Rowland, 2017). While leading from the middle may be evolving to instructional leadership, principals are lacking the necessary on-the-job professional development to meet district expectations of improved student learning outcomes. The alignment of professional development to principals every day job-related duties is critical to improving the effectiveness of principals. Leadership practices can impact student learning; yet, many principals spend limited time on day-to-day tasks, coaching, and teacher evaluation (May, Huff, & Goldring, 2012).

   Focused principal development. Across the reviewed studies, it is evident that the dissemination of resources and knowledge to translation of resources and personnel development are limited and continually present as an issue to consider in the literature (Rowland, 2017; Wallace Foundation, 2008). Additionally, the partnership between principal preparation universities and local education agencies are necessary to achieve these two critical components for any personnel development, dissemination and knowledge to translation (Rowland, 2017).

There is no direct development plan for these leaders, who the research continues to show is a key stakeholder in changing the school culture to implement evidence-based programming and increase the inclusion of students with disabilities into the school culture (Burdette, 2010; Carraway & Young, 2015; Tibbetts et al., 2010). From a policy perspective, university stakeholders need to identify the importance of direct professional development of in-service principals that could be supported by a policy to ensure dissemination (McCarthy et al., 2016; Rowland, 2017). The Wallace Foundation is facilitating the building of principal pipelines and producing tracking systems in partnership with universities and schools that later employ principals. Yet, there is still a need for tackling personnel development for in-service principals that can meet the needs of a diverse group of principals (Rowland, 2017). After two years, many principals are disregarded in the area of professional development (School Leaders Network, 2014). In three years of service, half of principals exit their schools; most often, in the most challenging schools (The Wallace Foundation, 2013). In part, principals are leaving their schools because of limited professional development on how to influence needed changes at the building level. The compliance and administrative tasks that consume a principals' time are the tasks that are covered during state-provided professional development on what is expected (Clifford & Mason, 2013).

Principal self-assessment of development needs. In reviewed studies, principals self-reported many preparation needs that align with research on school change and implementation science (Ball & Green, 2014; Hoppey & McLeskey, 2013; Wakeman et al., 2006). Historically, the literature has focused on demographic information and the quantity of preparation years, experience, and types of preparation. While this information is important, there remains a need for information about specific development offered and provided to principals that focus on on-

the-job skills. Demands placed on these leaders restricts their ability to seek out development opportunities or access opportunities. Current studies reveal that dissemination and knowledge to translation are weak, if not absent (Burdette, 2010; Rowland, 2017; Wallace Foundation, 2008). Principals need to be asked specific development questions related to issues of quality (Ball & Green, 2014). In addition to quality, the identification of development priorities for principals based on leadership standards is needed (McCarthy et al., 2016). Based on identified priorities, the link of that priority to a leader's perceived ability to implement a specific skill (e.g. establishing a school culture of high expectations for all students) within their context requires investigation. There remains an assumption that principals lack instructional leadership knowledge and skill (Rowland, 2017); when in fact, some principals may need continued professional development on managing the building, managing staff, and buffering staff from outside accountability pressures. Despite limitations with self-report, the literature suggests that building leaders are aware of their personnel development needs (Ball & Green, 2014; Horrocks et al., 2008; Wakeman et al., 2006), and those needs align with the principal professional development literature (Rowland, 2017).

Discussion

As noted by Waldron and McLeskey (2010), school principals are faced with directing school change, creating schools to support teachers in meeting the needs of all students, including the increasing number of students with disabilities in general education classrooms, and achieving the demands for improved student outcomes, which requires significant changes in schools. Coupled with federal mandates, schools and their leaders are faced with pressures for students with disabilities to have access to general education and make progress on their curriculum. Principals are often left to make complicated placement decisions for students with

disabilities, further complicated by policy and advocacy, and lack guidance on how to internally manage large-scale and in-house initiatives that would support their teachers (Rowland, 2017).

Collective Impact Theory (Kania & Kramer, 2011) and Implementation Science (Fixsen et al., 2009) are critical frameworks to further the development of the principal leadership construct literature. The perceptions of these leaders on inclusion practices, evidence-based practices, Applied Behavior Analysis (ABA), and specific programming for students with ASD have been explored. In addition, researchers have investigated principals' years of experience, preparation received, special education background, placement decision, and other demographic information. Yet, no research explores the types of activities principals engage in to support implementation of EBPs for specific students, the leadership behaviors necessary to command ASD specific initiatives, and the perceptions of principals related to their leadership performance on these areas (Leithwood et al., 2004; Rowland, 2017). In schools with a collaborative culture, ''decisions are not made by a single individual; rather, decisions emerge from collaborative dialogues between many individuals, engaged in mutually dependent activities'' (Scribner et al., 2007, p. 70). These words are critical to consider for the future development of a new conceptual framework to drive the principal leadership literature. Limitations of the current review will be examined. Next, three themes will be described to identify gaps and implications for policy, practice, and research.

Limitations

Overall, the studies represented in the current review have limitations. In fact, little published research is available on the specific topic of the proposed research study. Sample sizes did not meet power analysis requirements for most survey methodology studies, which is common amongst survey methodologies (Cohen, 1992). Odom and colleagues (2005) identified

that effect sizes can be overrated and nonresponsive to the contextual factors of education. Thus, the reviewed articles needed additional description and analysis of the implication of meeting or not meeting target sample sizes to obtain practical, clinical, or statistical significance. Studies with high response rates employed multiple data collection methods to obtain the responses, such as interviewing each principal in a convenient location. Due to the highly contextualized methodological approaches, the generalizability of the findings for nine studies, with the exception of Horrocks and colleagues (2008), is limited. The contextual findings are beneficial for advancing the knowledge and research of the field; however, the researchers needed descriptions of the rationale for the highly contextualized study to strengthen the results and implications (Odom et al., 2005).

Findings provide fragmented empirical foundation to propose the further development of a broad conceptual framework. The construct of principal leadership and the contextual factors that impact this leader's role and responsibilities, in relation to professional standards (ISLLC, 2008) is not measured or defined by published literature. The transfer from professional standards to implementation of these standards in principal development remains an area for future research. In particular, building leaders need to identify development priorities that directly impact their daily activities (e.g. making placement decisions, handling discipline issues, and evaluating instructional programs). Research needs to go beyond just assessing their attitudes and attitudes about inclusion and impose a deeper reflective process of assessing standards-driven leadership practices and priority for activity specific development (Rowland, 2017). Additionally, these leaders are constrained by contextual factors which need to be defined, explored, and aligned with the school's common agenda to achieve change (Kania &

Kramer, 2011). These limitations have broader implications for policy, practice, and research for further development of principal leadership.

Implications for policy. Based on the reviewed studies, institutions of higher education for principal preparation need to establish a curriculum that addresses universal design for learning and implementation of EBPs from a scaled approach. The process of making decisions to establish priority of EBPs and aligning those practices to the school vision within the competing demands of district constraints and priorities is a skill area necessary for these leaders to obtain. Thus far, there is no empirical evidence to measure these key constructs necessary for principals to align all school and district initiatives with consideration to contextual variables or formatively evaluating the common agenda held by schools (e.g. a school is focused on expanding the idea of "growth mindset") (Kania & Kramer, 2011; Rowland, 2017). Contextual factors that influence a principal's ability to support teachers' needs to be identified and placed within a design of implementation projects (Fixsen et al., 2009). Given the high litigation associated with this disability category, key stakeholders need to proactively address these personnel development needs. Legislation has supported the need for dissemination of evidence-based information to other professionals in the field (JLARC, 2009). Principals can be shielded from litigation, in that special education central office supports the special education teacher in contentious situations (Lashley, 2007). Despite the litigious nature of ASD, principals may not receive public attention for their professional development needs. However, the literature indicates that lack of principal preparation, and the principals' role in making placement decisions is responsible for high litigation (Zirkel, 2011). State and local policy actions are required to fund, structure, and coordinate effective professional learning for principals. Left to

the school or district level, principal professional development will continue to be low quality

(Manna, 2015; Rowland, 2017).

Implications for practice. Many administrators seek preparation in ASD instructional

programming given personal interest (Loiacono & Palumbo, 2011). To support Levin's (2010)

finding that colleagues are a powerful influence on principal attitudes, these leaders are accessing

resources within their school or within their district (Ball & Green, 2014; Horrocks et al., 2008).

Therefore, the experiences of principals have with school-level special education staff and

related resources heavily influences their decisions regarding the distribution of future resources.

The success or the preparation received by colleagues predicts principal attitudes toward students

with disabilities, inclusion of these students, and decision making related to LRE (Praisner,

2003). Inadequate principal preparation contributes to: (a) high litigation, (b) lack of teacher

support in implementing EBPs in their classrooms (Odom et al., 2010; Zirkel, 2011), and, (c)

likely adoption of strategies based on experience rather than EBPs negatively influence school

policy decisions (Honig & Coburn, 2008).

Federally-supported focus groups and organizations such as the Wallace Foundation have

proposed recommendations for policy and practice to guide principal development (Rowland,

2017). One of the key recommendations is to strengthen in-service principal mentoring and

leveraging job-embedded learning. A national report conducted by the *American School Leader*

Panel (Johnston, Kaufman, & Thompson, 2016) revealed that principals in larger districts are

offered one of three types of professional development (e.g., on-the-job, mentoring, or

conference professional development). School leaders reported to value professional

development that assisted with their role as an instructional leader versus managerial tasks. Yet,

professional development continues to focus on what principals need to comply with federal and

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state regulations to improve student learning and teacher quality. In turn, principals have the information to do the administrative tasks, but often lack the leadership skills needed to enact the change expected. High quality mentoring is recommended by The Wallace Foundation. Resources are required to institute mentoring or coaching of principals by supervisors, which requires the re-shifting of school leaders to focus solely on their team's professional development (Wallace Foundation, 2008). Grissom and Harrington (2010) found that principals who received coaching or mentoring were more effective than those receiving other professional learning opportunities (e.g., workshops or conferences). Recommendations from the reviewed studies and national principal leadership development organizations provide evidence for high-quality technical assistance that focuses on principal needs. This requires preliminary data to be collected on contextual factors prior to designing a development program (Fixsen et al., 2009; Rowland, 2017). Technical assistance models are often utilized by states to provide support for schools making data-reporting errors and failing state accreditation standards. Effective use of these proven models could equip principals with tools and strategies to strengthen high-quality instruction and improve student achievement.

Implications for research. Research needs to address these broader practice and policy implications by establishing an understanding of *how* principals can access critical information, learn that information, and translate that information into practice (Levin, 2010; Rowland, 2017). Continually, the research is exploring the demographic factors of principals, the quantity of preparation, and their attitudes towards students with disabilities. Researchers need to evaluate the repeated limitations across the literature, such as minimal published evidence on the implementation of professional leader standards into principal development, the use of ESSA Title II funds to allocate resources to principal development, and quality of current development

received by these leaders. Table 4 summarizes gaps identified in the existing research and how the future research can address each gap.

Table 4

Identified Gaps and Research Needs

	Identified Gaps	Research Needs
Conceptual Framework	Existing literature explores inclusion or one evidence based practice as a conceptual framework	Employ researcher developed measure that considers collective impact theory and implementation science frameworks to identify leadership behaviors according to professional standards
Methodology	Existing literature lacks methodological rigor and quality based on AERA standards and Odom and colleagues (2005) quality research indicators in special education	Utilize quality research indicators to establish a rigorous researcher developed measure
Professional Standards	Existing Literature does not explore principal's perceptions of level of experience on professional standards and priority for development based on perceived ability on those standards	Investigate principal perceptions related to priorities for development and professional standards set forth by research based organizations

Conclusion

Exploring the importance of educational leadership on student achievement and school change is not a new concept (Glasman, 1984). However, the field lacks empirical evidence to make a strong case for financial investment in school leaders to achieve large-scale education improvement, e.g. systems change. Whether using a case-study approach, a survey, or an experimental approach, all designs have answered how these leaders obtain a high quality

impact: (a) establishing a clear vision/direction, (b) developing others, and, (c) changing the organizational system to meet the vision/direction. The unexplored research needs to identify the essential competencies of high-quality leaders and the influence of contextual conditions impacting any school leader from achieving small- and large-scale impact. There is lack of clarity on a definition of principal leadership, guidelines on how to delegate leadership responsibilities, the benefits and impact of the process of obtaining these competencies, and, lack of leadership and the influence of contextual factors related to supporting others.

Additionally, federal funding through ESSA supports professional development for school leaders. Unlike NCLB, ESSA requires school districts to report how specific evidence-based professional development for school leaders will work in their context with their students (Rowland, 2017). Title II funding provided through ESSA can be used to evaluate current principal professional development quality and the amount being provided to principals on on-the-job tasks versus regulatory tasks. The proposed research is a state level approach to begin identifying some of the strengths, gaps, and contextual factors impacting principal practice. Based on the sample size of the proposed study and significance of findings, a national expert indicated that this survey could be used as a model for other states to obtain preliminary information and potentially drive national efforts. The next chapter will describe the proposed study which targets limitations found in the literature review, as well as close some of the gaps on what we know and want to know about how principals access professional development.

Chapter III

Methodology

Given the growing complexity of supporting students with autism spectrum disorder (ASD) exhibiting challenging behavior, principals face several challenges in addressing their own development in leadership and on-the-job tasks. Investigating the priorities for principal development may be one approach for equipping stakeholders with information to establish meaningful opportunities to strengthen these leaders' skills and abilities to meet increasingly high expectations. The purpose of this research was to examine the relationship between principals' demographic characteristics, their knowledge of contextual factors, and leadership attitudes that influence priorities for the school and their development. To develop professional development programs for principal leaders, it was necessary to understand factors that influence these leaders ability to maintain students with challenging behaviors and autism in the public school setting.

Specific research questions to be explored through a survey methodology are:

RQ1: What are the self-reported leadership attitudes of elementary principals in Virginia?

RQ2: What are the self-reported contextual factors that Virginia elementary school principals report as influencing their decisions to requesting a different placement for a student with autism exhibiting challenging behavior?

RQ3: What are the self-reported professional development needs of Virginia elementary

principals on job-related tasks regarding best practices and supporting students with

ASD?

RQ4: What is the relationship between elementary principals' self-reported leadership

attitudes and their familiarity with professional evaluation standards, tools, and

guidelines?

RQ5: What is the relationship between self-reported professional development needs on

job-related tasks and demographics of elementary principals in Virginia?

Sample Selection

The sample for this study was identified using the Virginia Department of Education's

(VDOE) publically available Educational Directory for Virginia public schools. Given four

districts were excluded from the study due to internal research policies, 884 elementary school

principals were included in the sample. Virginia school districts are classified into eight

superintendents' regions, and locale descriptions. These locale descriptions are obtained from the

National Center for Education Statistics, Institute for Education Sciences ([NCES], 2015) and

matched to the U.S. Department of Education's Virginia locale types (2009) for each school

district. Each description is provided to establish parameters for data analysis related to

investigating what works in each context. Each of the 12 descriptions were collapsed into the

four basic types: (a) city, (b) suburban, (c) town, and, (d) rural.

Given the purpose of these classifications is to assist researchers, the principals

participating in the survey indicated their locale description. Definitions of these locales were

provided within the online survey format and in the glossary at the front of the paper survey.

Table 5 lists the number of elementary school principals categorized by locale type and a brief

description of each. For protection of the participants, these descriptors were used to group

participants in the data analyses, instead of categorizing by school district.

Table 5

Number of Elementary Principals in Virginia, by Locale Type

Locale Type	Description (National Center for Educational Statistics [NCES], 2015)	Total
City	Large (more than 250,000 population), midsize (population greater than or equal to 100,000), or small (less than 100,000 people) population density, inside an Urbanized Area and inside a Principal City	269
Suburb	Large (more than 250,000 population), midsize (population greater than or equal to 100,000), or small (less than 100,000 people) population density, outside a Principal City, inside Urbanized Area	242
Town	Fringe, Distant, or Remote population density, inside an Urban Cluster, specific mile criteria from Urbanized Area	78
Rural	Fringe, Distant, or Remote population density, specific miles from Urbanized Area or specific miles from an Urban Cluster	299
	Total	884

Participants were selected using a non-probability sampling of elementary school

principals residing in Virginia. The rationale for the sampling frame including all elementary

school principals in Virginia, was to ensure that the recommended sample size of 269

respondents is achieved. This recommendation was obtained using RaoSoft® sample size

calculator, with adherence to a 5% margin of error, 95% confidence level, and 50% response

distribution. Additionally, the data obtained from surveying the target population can be used to

design professional development for principals based on what works and how these professionals

engage with professional development. More importantly, the state principal evaluation process

focuses on the significance of professional leadership standards, but provides little professional

development and learning in this area. Furthermore, Virginia is currently reinvestigating regional programming that seeks to keep students within their comprehensive public schools or in a neighboring school district within the region. As Virginia adopts an equitable approach for regional programming, the information obtained from this survey can advise program development based on contextual information across the eight Superintendents' regions within Virginia.

Survey Development

The development of the survey consisted of the following activities: (a) item generation and selection was based on in-depth literature review, and, (b) expert panel review. Pilot testing will be conducted after obtaining approval from the Virginia Commonwealth University's (VCU) Institutional Review Board (IRB). The pilot testing and survey revision process will be described below.

Item generation and selection. Information from the in-depth literature review and proposed conceptual frameworks were used to generate items for the survey. A total of 48 questions comprised the first draft of the survey. The following items were selected for each content area: (a) professional demographics, (b) principals' expressed professional development needs in the area of leadership, (c) on-the-job tasks, and, (d) influence of contextual factors on principals' decision-making for students with autism who exhibit challenging behavior.

Expert panel review. Prior to a pilot test, key organizations and leaders who specialize in principal development, including the Wallace Foundation and the American Institute for Research, were contacted. Six national and three state level experts were asked to review the draft survey measure and provide feedback to address construct validity. Informants were selected by reviewing the literature and obtaining additional contacts from national experts. In

addition, two elementary assistant principals in Virginia were identified to provide feedback on

the amount of time required to answer survey items and clarity of items. A total of eight

professionals received a draft copy of the survey and directed questions for their feedback. These

directed questions (Fowler, 2014) were:

1. Do you believe the information to be obtained from this survey will be value added to

   the principal development literature? Provide rationale for strengths and weaknesses.

2. Do you believe the vast majority of the survey items focus on important unknown

   features in principal development? Are there missing constructs or components not

   addressed by this survey?

3. Do you have feedback on the question clarity, length of survey, overall quality of

   content presented throughout survey?

Each informant had an opportunity to provide additional comments beyond these

questions. Five out of the eight professionals returned the draft survey with written feedback or

scheduled a phone call to discuss feedback. Professionals provided feedback on the overall

instrument and implications of this research. An expert from American Institutes of Research

stated that there has been little action on professional development despite new information on

what principals should be able to do and what we know about principal leadership (Rowland,

2017). This expert indicated that the survey instrument would contribute to what works in what

context and identifying weaknesses in nationally recognized leadership behaviors. Additional

contributions were mentioned that included: learning the content and delivery mechanisms that

increases principal engagement.

Given the current feedback, the survey consisted of 48 items that were formatted online

and a paper copy. Jacob and Jacob (2012) found that more school principals responded to a paper

copy than a web based survey, given both survey modes. Each section of the survey is presented on one page, and the bottom of the paper copy or internet page will indicate the remaining sections left (Dillman et al., 2014). The first page of the online or paper copy survey included the name of the survey and the purpose of the survey. The researcher's name and contact information was provided in the research information consent sheet and on the back page of the paper survey. Each participant was asked to consent to participate in this survey prior to completing the survey in either mode, e.g. clicking "I consent" or returning the survey via mail. Dillman and colleagues (2014) provide recommendations for increasing participants to complete the survey in its entirety. These recommendations include: instructions throughout the survey, in between sections that encourage further participation; pilot web questionnaire; and, ensure emails do not get flagged for spam. Lastly, the final page of the paper survey or last window of the online survey encouraged respondents to provide additional comments or information.

Pilot testing and survey revision. The final step was to pilot the survey. Using convenience sampling, the pilot school district was selected based on previous professional relationships in this district. A cover letter, the survey instrument, and research information sheet was provided to the school district's director of staff development and research review. On September 12, 2017, this district approved the research pilot study under specific conditions. Following Virginia Commonwealth University's Institutional Review Board (VCU-IRB) approval, all middle school principals were sent the survey, and asked to answer feasibility questions at the end of the survey. These feasibility questions (see Figure 2) were derived from the Vanderbilt Assessment of Leadership in Education Evaluation Tool developed in partnership with the Wallace Foundation. The following response category will be used for the feasibility questions (Vagias, 2006): (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and, (5)

strongly agree. The approval letter provided by the districts' assistant superintendent was attached to the email as a cover letter. There was a 40% response rate for the pilot survey.

Feasibility Question
I found this response form easy to use.
I believe the vast majority of items focused on important skills and dispositions.
I understood the vast majority of the items

Figure 2. Feasibility questions for pilot study.

Results of this pilot indicated that there were not any electronic errors with the online survey. Further, the pilot respondents did not indicate any missing content or skip similar questions. When asked the usability of the form, 75% of middle school principals agreed the form was easy to use; 25% indicated neutral to usability of the form. Seventy-five percent of principals reported they agreed that the majority of survey items focused on important skills and dispositions; and, the same percentage of respondents indicated the survey items were understandable. No items were removed or tweaked based on the pilot feedback. A follow-up contact was made with one of the expert panel reviewers to update on the pilot responses.

Validity and reliability. Following the pilot study, reliability of survey items was tested. Overall, the reliability of all the survey items before factors were extracted was .837. This is considered an acceptable measure of internal test consistency and reliability. The reliability of constructs will be discussed in Chapter 4.

Survey Description

Participants were provided two options for completing the proposed survey, mail and electronic. The instrument consists of four parts: (1) leadership skills, (2) contextual factors that

influence placement decisions, (3) development needs assessment, and, (4) demographic information. Actual items on the survey are presented in Appendix C.

   Leadership skills and attitudes (survey items #1-12). In Part 1, principals were asked to examine their professional skills on a scale from (1) very untrue of me to (5) true of me (Vagias, 2006). The purpose of this section was to identify skill areas to support principal development needs in leadership. A total of 12 reflection statements are listed that are derived from the *Professional Standards for Educational Leaders* (PSEL) developed by the National Policy Board for Educational Administration (2015). Format for these items consisted of ranked items. The online and paper survey indicated the words that correspond with each rating, and not include the scaled numbers (Dillman et al., 2014).

   Influential contextual factors (survey items 13-23). In Part 2, principals were asked to consider several contextual situations that affect their decisions to place students with ASD exhibiting challenging behavior. On a scale of 1 (not at all influential) to 5 (extremely influential), principals are asked to evaluate 11 contextual situations. The descriptor of each Likert scale item was displayed, instead of just the numeric descriptor. Contextual situations included issues such as hiring and retaining principals, school culture, and staff resources.

   Perceived professional development needs and priorities (survey items 24-35). In this section, principals were asked two questions about 12 job-specific tasks required for supporting teachers and students affected by ASD. First, these leaders identified their familiarity with the task on a scale from 1 (not at all familiar) to 5 (extremely familiar). For each task, the principal examined the priority level of each job task, which may or may not be related to their familiarity with that specific task. On a similar Likert scale, the scale for priority ranges from (1) not a priority to (5) essential priority.

Professional demographics (survey items 36-47). At the end of the survey, demographic information was collected (Dillman et al., 2014). A total of 10 questions were asked to investigate the principal's term in the school building (e.g., to investigate if they are in the first to three year window of essential development need), school characteristics (e.g., based on components from the conceptual framework), development preferences and dissemination preference (e.g.. quality), and, level of familiarity with EBP and teacher evaluation related to supporting the population of students and teachers under study. Items in this section are presented in multiple choice format. The demographic information was the last section of the survey, to assure that potentially sensitive information does not decrease immediate participation in study (Dillman et al., 2014). The goal of the survey design was to build commitment from respondents from question-to-question, and section-to-section.

Several steps were taken to establish content evidence for this instrument prior to administration. These included item content review and overall examination of the instrument by expert professionals in the field from the Wallace Foundation network in Virginia and the American Institute of Research. A pilot survey was conducted in a region in Virginia outside of the sample population to receive feedback on feasibility of instrument and internal consistency of items under specific constructs.

Administration Procedures

Dillman, Smyth, and Christian (2014) defined the tailored design method as a mixed-mode data collection approach to strengthen the survey methodology. Taking into account the four sources of error in survey design, this customizable survey approach improves coverage, reduces survey costs, and keeps error at low levels. The quantitative phase consisted of data collection with the use of a survey instrument. The rationale for this approach was to produce

statistics that represent the target population of elementary school principals to strengthen the development literature and principal development practices.

A mixed mode survey approach to study principal reported professional development priorities and contextual barriers to support a high need population of students was necessary to address the lack of research on principal standards and barriers to large-scale implementation for principals. The tailored design method addressed weaknesses identified as abating one mode of survey design. Therefore, mail and electronic surveys were used to improve coverage of the population of study.

Participants and Setting

Participants were recruited through a purposeful sample selection. Publicly available data was obtained from the Virginia Department of Education (VDOE) website. To meet sample requirements, a participant was listed as an elementary school principal in the VDOE directory. Elementary was determined by the identification of the school on this directory, as traditional elementary school. Given the variations in grade level clusters per school district, the traditional elementary school designation included: (a) kindergarten through second grade, (b) kindergarten through fifth grade, (c) kindergarten through six grade, and, (d) third grade through fifth grade.

Given publically available information, these professionals were contacted directly via email and school mail address. Prior to sending the first mail invitation contact, 132 special education directors received an email with the research information and consent form. Further, each special education director was provided a brief explanation of the study within the body of the email. Six school districts requested internal research approval for the study. The research design did not meet the requirements of three school district's internal research requirements. The remaining three districts were included into the actual sample population. In order to

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consider sample frame deficiencies, the over- or under- representation of the sample was considered to determine proper representation (Fowler, 2014). For instance, rural school districts may have less opportunities to respond to the survey, and may be underrepresented in the analysis of contextual factors impacting the implementation of large-scale initiatives in their school compared to city school districts. Weighting was considered to determine if each of the four school NCES locale descriptions (refer to Table 5) are equally represented in data analysis (Fowler, 2014).

Study Design

Figure 3 shows the implementation design procedure for this study. Dillman and colleagues (2014) evaluated a study that followed a similar implementation design plan, and each contact produced a higher increment of response rate. The largest effect in response rate occurring between day one and day four.

Timeline	Description
Day 1	Mail letter to 884 principals in Virginia (Appendix D)
Day 4	Send Email with Survey Link to 884 principals (Appendix E)
Day 10	Send Second Email Request (Appendix F)
Day 18	Mail letter offering option of responding to paper survey (Appendix G)
Day 22	Last email to follow up (Appendix H)

Figure 3. Implementation design procedure for research study based on Dillman and colleagues (2014) tailored method design approach to mixed-mode survey methodology.

Day 1. Invitations to participate in the survey were mailed to the sample of 884 elementary school principals from the VDOE school directory. The letter included the purpose of the study, contact information of the researcher, risks/benefits associated with participation, and confidentiality assurances. The survey link was provided in this letter which will be

http://www.worksupport.com/surveys/principals/. Each principal received a unique identifier that must be entered to participate in the survey. The associated school principal and this unique identifier was used to ensure unnecessary follow-up contact does not occur for those who participate at this initial contact. The unique identifier attached to the school principal was housed on VCU FileLocker on a secured, password protected laptop. This list was not associated with the individual's survey data. This information was represented in the letter.

Day 4 and Day 10. Following the first contact, an email was sent to the exact 884 elementary school principals who were mailed an invitation letter. In this email, the purpose of the study, contact information of the researcher, risks/benefits associated with participation, and confidentiality assurances was included. The email indicated that a first contact should have been received and this was another attempt for participation. On Day 10, the second email request was sent (see Appendices). Prior to sending the request on Day 10, respondents at this point in the implementation plan were cross-referenced to ensure they do not receive an additional contact.

Day 18. A paper copy of the survey was designed to match the exact format of the online survey option. All paper surveys were coded with a number located in the top right hand corner of the first page to identify respondents versus non-respondents for last follow-up. The names and mailing addresses of the sample were stored in a separate location, with randomly generated numbers to identify respondents versus non-respondents. The database description was described in the data management section of this chapter.

Subsequent invitations were sent via email and mail to increase survey participation. Five days following the last contact, the survey closed, and the response rate was charted using a line graph to show the participation across each invitation contact outlined in the implementation

plan. The response rate was calculated by adding total number of respondents from the first contact to the day before the next contact.

Those participants who elected to disclose their email addresses for entry into a random drawing for a chance to win one of four $25.00 gift cards (Jacob & Jacob, 2012), received a generated email to thank them for their participation and reiterate that their email address will not be linked to their survey information. The names and addresses were stored in a separate file from the survey responses and the paper survey respondent codes file.

Data Management

Paper survey submissions were entered directly and managed by the researcher. A student researcher assisted in entering paper surveys by member checking each entry. The paper copies were scanned into PDF format, stored on VCU's FileLocker, and hard copies were destroyed. The survey data is stored in a secure web-based application. This ColdFusion database is managed by Doug Erickson and Katherine Inge, at Virginia Commonwealth University's (VCU) Research and Rehabilitation Training Center (RRTC). The database uses the two-factor authentication system requiring a VCU eID, a DUO mobile application confirmation using a mobile device, and granted access by the data manager, Doug Erickson, to access the database. Therefore the researcher and this data manager are the only two individuals who can access the stored survey information. This data manager was critical to ensuring confidentiality of participants by coding the database.

Data Analysis

IBM *Statistical Package for the Social Sciences* version 23 (SPSS ®) was used for statistical analysis, charting, reporting, and data management. Data was secured on a password protected laptop protected by the central authentication service provided by Virginia

Commonwealth University. Data was prepared for analysis by proceeding through a series of steps (e.g. identification of outliers, missing data, and descriptive statistics). Descriptive statistics were conducted across the data to generate individual and group mean survey scores, and frequency and percentage distributions. Analysis was completed using parametric statistics, provided the desired sample size of 269 or more. Each research question below has a proposed parametric test.

Research question 1. What are the self-reported leadership attitudes of elementary principals in Virginia? Provided parametric results are achieved, a one-way analysis of variance (ANOVA) would be conducted to determine if there are associations between the four locale groupings. The independent variables would include: (1) city, (2) suburban, (3) town, and (4) rural. These nominal variables will be unordered, as there is no ranking or ordering associated. Other groupings could include the services provided to students with autism, (1) general education only, (2) both general education and specialized programming, (3) does not have any students with autism and no experience with these students, and, (4) school does not have students with autism, but has experience with these students. The dependent variable would be the reflection statements based on national principal standards which are nominal variables ordered via a one to five Likert scale.

Research question 2. What are the self-reported contextual factors that Virginia elementary school principals report as influencing their decisions to requesting a different placement for a student with autism exhibiting challenging behavior? A one-way ANOVA would be used to answer this question. In this case, the independent variable would be the groups identified by the NCES locale types. The dependent variable would be the influence of contextual situations coded as an ordered nominal variable. Additional post-hoc analysis will be

used to determine statistically significant probabilities between specific groups. For example, a higher proportion of elementary principals in urban settings could report hiring skills professionals as extremely influential in requesting a new placement for students with autism, in comparison to principals in rural settings.

Research question 3. What are the self-reported professional development needs of Virginia elementary principals on job-related tasks regarding best practices and supporting students with ASD? For this question, a one-way ANOVA was conducted by grouping principals by locale type, type of programs for students with autism in the buildings, and length of service as a principal. In each example of groupings, the dependent variable would be the principal's level of familiarity with a job task. Post-hoc analysis was conducted to identify the source of significance. If additional tests are conducted, then the level of significance will be adjusted using Bonferroni-Correction.

Research question 4. What is the relationship between elementary principals' self-reported leadership attitudes and their familiarity with professional evaluation standards, tools, and guidelines? Regression analysis will be used to predict the likelihood that the independent variables under study have a statistically significant effect on the dependent variable. In particular, the independent variable will be the familiarity with principal evaluation standards, length of time as principal, and familiarity with evidence-based practices. The dependent variable will be the reflection statements on leadership behaviors and how these behaviors may become factors associated with conceptual framework constructs.

Research question 5. What is the relationship between self-reported professional development needs on job-related tasks and demographics of elementary principals in Virginia?

A one-way ANOVA will test the following independent variables: (a) familiarity with principal evaluation standards, (b) the length of time as a principal, (c) experience with students with autism, and, (d) NCES locale type. Each independent variable will be evaluated to determine the effect, if any, on familiarity with job tasks.

Given 269 survey responses, an exploratory factor analysis will be completed to identify constructs that align with the merged conceptual frameworks, e.g. implementation science and collective impact theory. Sections of the survey will be examined to determine if there are similar components that can be reduced under one category to lessen the number of analyzed components. Additionally, Pearson's Correlation will identify if there is linearity between variables, given many of the items are ordinal. The exploratory factor analysis will establish factor scores for each of the four sections of the survey.

Potential Ethical Issues

The survey methodology poses less ethical risks than other methodologies (Dillman et al., 2014). An information sheet will be provided with the paper survey, and presented at the beginning of the web survey. This information sheet will disclose the motivation and contact information of the researcher to allow potential respondents to make an informed decision (see Appendix B). Each respondent must either check or select consent to participant prior to the survey beginning. Additionally, the respondents can skip questions or terminate the survey at any time. Web surveys will be completed using the secure ColdFusion database supported by VCU's RRTC. This database is used as a data management system for federal and state grants. It is approved by VCU's Information Technology department (see Appendix I) and compliant with the Health Insurance Portability and Accountability Act (HIPPA). The database will assign unique identifiers to each of the survey responses. The purpose of these identifiers will be to

determine if there are specific questions that respondents skipped consistently or a point that most respondents terminated the survey. No identifiers will be attached to participants, and no tracking of URLs will be collected. Should any problems arise during the course of the study, participants are encouraged to contact the principal investigator, Dr. Kevin Sutherland, or methodologist, Katherine Inge. For technical support, the participants can anonymously send an email from the survey system to the data manager and researcher. The email will come from a database generated email, and response back from the data manager cannot be replied to for additional confidentiality assurance.

Institutional Review Board

Approval from the Institutional Review Board (IRB) of Virginia Commonwealth University was obtained December 20, 2017, prior to any data collection as this research involves human subjects.

Summary of Methodology

The purpose of this research was to examine the relationship between principals' demographic characteristics, influence of contextual factors, and the leadership attitudes that influence priorities for the school and personal professional development. This research used a mixed mode survey methodology rooted in the Tailored Method Design (Dillman et al., 2014). This study addresses the gaps in the literature by identifying the critical professional development needs of elementary principals in Virginia working with a specific population of students with disabilities who have intensive educational needs.

Resources

VCU's Research and Rehabilitation Training Center has agreed to create a survey database specifically for this study. Katherine Inge, Director of Instructional Technology has

approved the scope of the study design to be built by data manager, Doug Erickson. Jeanne

Roberts, graphic designer at VCU, has agreed to design the paper survey and mail contact

postcards to ensure that the survey is easy to use and the flow of the document is understandable.

Ms. Roberts designs surveys for the RRTC, both federal and state research project.

Chapter IV

Results

The purpose of this research was to examine the relationship between principals'
demographic characteristics, the influence of contextual factors related to challenging behavior
and autism, and leadership attitudes that influence priorities for their school and professional
development. First, the response rate and demographic characteristics of principals are presented.
Second, preliminary data analysis techniques used to screen data are discussed. Third, the
process of exploratory factor analysis is presented to provide constructs for interpreting these
data. Finally, each of the research questions are examined statistically and the impact of the
results on the purpose of the study are presented. A mixed mode survey design was used to
answer the following five research questions.

RQ1: What are the self-reported leadership attitudes of elementary principals in Virginia?

RQ2: What are the self-reported contextual factors that Virginia elementary school
principals report as influencing their decisions to requesting a different placement for a
student with autism exhibiting challenging behavior?

RQ3: What are the self-reported professional development needs of Virginia elementary
principals on job-related tasks regarding supporting students with autism?

RQ4: What is the relationship between elementary principals' self-reported leadership
attitudes and their familiarity with professional evaluation standards, tools, and

guidelines?

RQ5: What is the relationship between self-reported professional development needs on

job-related tasks and demographics of elementary principals in Virginia?

Response Rate

A total of 884 surveys were mailed to current elementary school principals using Virginia

Department of Education's (VDOE) public educational directory. Four school districts in

Virginia were excluded from the study due to internal research review and approval policies. A

total of 305 surveys were completed, representing a 34.5% response rate, across five systematic

contact points. Figure 4 shows the increase in response rate at each contact point (Dillman et al.,

2014). On Day 1, an invitation letter was sent via mail, and a survey link was provided within the

body of the letter. On Day 4 and Day 10, email reminders were sent to principals who had yet to

respond. On Day 18, a paper copy of the survey was sent via mail, along with the research

information and consent sheet. On Day 22, a final email reminder was sent to principals as a

final opportunity to respond with five days. Similar to findings presented by Dillman and

colleagues (2014), the highest increase in response rate occurred between Day 1 and Day 4

(108% increase).

SURVEY RESPONSE RATES BY CONTACT POINT
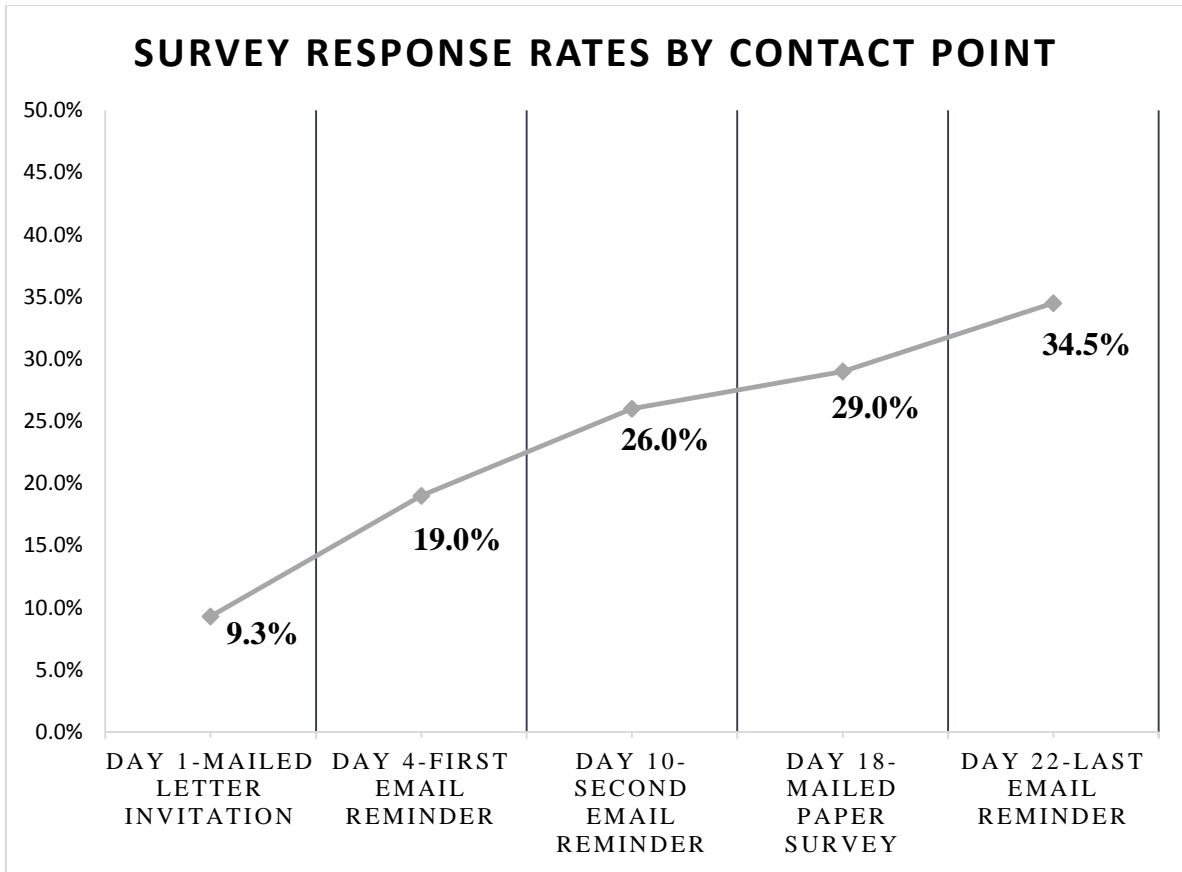
Figure 4. Survey response rates by systematic contact point.

The recommended sample size of 268, calculated using Raosoft® calculations, was met. Using a 95% confidence interval, this calculation projected a 4.60% margin of error with 300 total principals. Of the 305 surveys completed, four of the principals did not complete two-thirds of the survey, identified as extreme outliers discussed in the preliminary data analysis section, and were removed from the sample prior to further data analysis. The remaining 301 surveys comprised the actual sample used for data analysis. These 301 principals met the inclusion criteria of being employed as an elementary school principal in Virginia.

Principal Demographics

Information regarding the demographic characteristics of the elementary school principals who completed the survey is presented in Table 7. This table summarizes demographic

items #37-#43, including information on length of service in current building and region, and location of school. The demographic information allows for grouping participants by specific variables for each corresponding research question. In particular, demographic characteristics will be analyzed in research question five: What is the relationship between self-reported professional development needs on job-related tasks and demographics of elementary principals in Virginia?

Table 6

Demographic Characteristics of Principals

	Frequency	Percent
Length of Service in Current Building		
Less than one year	51	16.9
1 year-3 years [a]	114	37.9
4 years-6 years	71	23.6
7 years-9 years	33	11.0
10 years-12 years	11	3.7
13 years-15 years	11	3.7
16 years of more	10	3.3
Region Designation in Virginia		
Region 1 [b]	43	14.3
Region 2	64	21.3
Region 3	17	5.6
Region 4 [c]	58	19.3
Region 5	39	13.0
Region 6	41	13.6
Region 7	30	10.0
Region 8	9	3.0
Location of School		
Rural	127	42.2
Suburb	88	29.2
City	56	18.6
Town	30	10.0

[a] 1-3 years – Identified in the literature as a critical time frame where most principals exit their positions.
[b] Region 1: One school district excluded from study.
[c] Region 4: Three school districts excluded from study.

Demographic characteristics of survey principals. Principals ranged in length of service in their current (school) building from less than one year (37.9%) to 16 years or more years of experience (3.3%). Overwhelmingly, the majority of the principals who participated in this study had one to three years of service in their current job. This finding provides important information on how to support principals during their first three years of employment in a school. The public schools in Virginia are divided into eight geographic superintendent Regions. Principals were asked to report the region in which they were currently employed. Region 2 had the highest representation in the sample with 21.3%; followed by Region 4 at 19.3%. Approximately 14% of the sample was from Region 1; 13.6% from Region 6; 13% from Region 5; and 10% from Region 7. Finally, Regions 3 (5.6%) and 8 (3%) had the lowest representation of elementary school principals in the sample. The response rates from Regions 1 and 4 may have been impacted, since four school districts were excluded from the sample due to school policies on participating in research.

Each principal was asked to select the locale (e.g. location) of the school as defined by the National Center for Educational Statistics (NCES). In particular, this demographic variable was critical in analyzing the differences in needs and priorities based on locale of the school. Thus, the actual sample's location frequency was compared to the total population's location frequency to ensure generalizable results for each research question that groups principals by this characteristic. Rural had the highest representation in the sample (42.2%) which is higher than the representation of this locale in the total population; followed by suburb (29.2%) which was relatively close in percentage to the total population. Finally, city (18.6%) and town (10.0%) had the lowest representation in the sample of principals from specific school locations. However, these actual sample representations are not too different from the total population, with the

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exception of city (e.g. actual, 18.6%; total, 30.4%). These comparisons between the actual

sample and total population are presented in Table 7.

Table 7

Locale Demographic Comparison of Total Population and Actual Sample Representation

	Total Population Representation n=884		Actual Sample Representation n=301		Percentage of Actual Sample Representation out of Total Population
Locale	Frequency	Percentage	Frequency	Percentage	Total Percentage
Rural	299	33.8%	127	42.2%	42.5%
City	269	30.4%	56	18.6%	21.0%
Suburb	242	27.4%	88	29.2%	36.4%
Town	78	8.8%	30	10.0%	38.4%

The comparison indicates that city (18.6%) may be underrepresented in the data analysis.

In accounting for underrepresentation, the weighting of cases for equity amongst locales was

considered. After running descriptive statistics on each of these locales by different variables, the

means were not significantly different (see Table 8); indicating that weighting these cases would

not be necessary. In Table 9, information on professional development experience and

preferences is presented. This table summarizes survey items 44-48.

Table 8

Descriptive Statistics for Locale

	N	Mean	SD	SE	95% CI		Min	Max
					LL	UL		
City	56	4.42	.4555	.0608	4.30	4.54	3.42	5.00
Rural	127	4.40	.5156	.0457	4.31	4.49	2.75	5.00
Suburb	88	4.50	.4424	.0471	4.40	4.59	3.25	5.00
Town	29	4.35	.4429	.0822	4.18	4.52	3.50	5.00
Total	300	4.43	.4774	.0275	4.37	4.48	2.75	5.00

Note. SD = standard deviation; SE = standard error; CI = confidence interval; LL = lower limit; UL = upper limit

Table 9

Self-reported Professional Development Preferences and Experience

	Frequency	Percent
Highest Preference for Professional Development Format		
Face-to-Face Workshop	85	28.2
Professional Learning Community	60	19.9
Hybrid (Online and Face-to-Face)	55	18.3
Leadership Academies	32	10.6
Individualized Job Embedded Coaching	32	10.6
Conference	18	6.0
Online Modules	17	5.6
Other	2	0.7
Best Mode to Disseminate Knowledge beyond Professional Development		
Email	219	72.8
Principals' Meeting	52	17.3
Face-to-Face Meeting	23	7.6
Video Conferencing	3	0.9
Mail	2	0.7
Phone	2	0.7
Number of Professional Development Opportunities on ASD		
None	131	43.5
1-2	145	48.2
3-4	12	4.0
5 or more	13	4.3
Number of Professional Development Opportunities on Challenging Behavior		
None	58	19.3
1-2	191	63.5
3-4	44	14.6
5 or more	8	2.7

Response Patterns of Principals' Professional Development Experience and Preferences

The majority of the principals (59%) specified that an ongoing professional development

opportunity would be preferred, including: professional learning community (20%), hybrid (e.g.

online modules and face-to-face meetings; 18%), leadership academies (10.6%), and job embedded coaching (10.6). Cumulatively, 34% identified a one-time training opportunity such as face-to-face workshop or conferences.

Sixty-three percent of principals reported one to two professional development opportunities on challenging behavior in the 2016-2017 school year. On the topic of autism, 48% of principals received between one to two trainings in the 2016-2017 school year. When asked the *best mode of communicating information outside of structured professional development*, the majority (72.8%) of principals selected email as the preferred communication method. Principal meetings were the best mode for 17.3% of principals. Approximately eight percent of principals responded face-to-face meetings were optimal.

Response Patterns for Familiarity with Practices, Tools, and Evaluation

As a Commonwealth, Virginia develops guidelines, trainings, and technical assistance support for various initiatives. In 2012, Virginia adopted the *Uniform Standards for Principal Evaluation.* These standards became effective in July 2013. McCarthy and colleagues (2016) found that states often adopt these guidelines; yet, many of these guidelines are not fully in practice. To understand the current situation in Virginia, principals were asked to rate their familiarity with these standards. Most of the principals reported that they were either somewhat familiar (19.4%), moderately familiar (29.8%) or extremely familiar (25.4%) with the *Uniform Standards for Principal Evaluation*. The results are presented in Table 10.

Table 10

Familiarity with State Uniform Standards for Principal Evaluation

| | Uniform Standards | |
Likert Scale	Frequency	Percentage
Not at all Familiar	36	12.0
Slightly Familiar	40	13.4
Somewhat Familiar	58	19.4
Moderately Familiar	89	29.8
Extremely Familiar	76	25.4
	299	100.0

Note. n=299

Principals also reported their familiarity with evidence-based practices in Table 11, and using the state teacher evaluation tools for students with autism exhibiting challenging behavior (Table 12). Some principals indicated somewhat familiar (36.2%) with evidence-based practices, with a similar percentage (34.9%) reporting moderate familiarity. For familiarity with teacher evaluation tools, 35.2% of principals indicated they were somewhat familiar with using this tool for teachers who support students with autism.

Table 11

Familiarity with Evidence-Based Practices

| | Evidence-Based Practices | |
Likert Scale	Frequency	Percentage
Not at all Familiar	10	3.3
Slightly Familiar	41	13.6
Somewhat Familiar	109	36.2
Moderately Familiar	105	34.9
Extremely Familiar	36	12.0
	301	100.0

Note. n=301

Table 12

Familiarity with Teacher Evaluation Tools

	Teacher Evaluation Tool	
Likert Scale	Frequency	Percentage
Not at all Familiar	35	11.6
Slightly Familiar	58	19.3
Somewhat Familiar	106	35.2
Moderately Familiar	77	25.6
Extremely Familiar	25	8.3
	301	100.0

Note. n=301

Preliminary Data Analysis

The data was reviewed for outliers and missing values. Four principals were removed as they did not complete two-thirds of the survey and were extreme outliers that impacted the approximately normal distribution of survey data (Fowler, 2014). Each of these principals elected to skip different entire sections of the survey, and scored all the same answer for the remaining sections that they completed. Prior to excluding any principals, the data was examined for missing values by survey item to examine systematic omission of responses. Missing values were inconsistent across items and represented 0.9% of the actual sample. Given this small percentage, missing values were not imputed at risk of increasing error. Following the data screening and management, an exploratory factor analysis was conducted to determine potential factors that reflected the key constructs for later analysis.

Factor Analysis

Exploratory factor analysis was conducted to provide factor scores to answer research questions one through three. These questions are listed below:

RQ1: What are the self-reported leadership attitudes of elementary principals in

Virginia?

RQ2: What are the self-reported contextual factors that Virginia elementary school

principals report as influencing their decisions to make a different placement decision for

students with autism exhibiting challenging behavior?

RQ3: What are the self-reported professional development needs of Virginia elementary

principals on job-related tasks regarding best practices and supporting students with

ASD?

To assess data suitability for factor analysis, a Kaiser-Meyer-Oklin (KMO) measure of

sampling adequacy was executed to examine appropriateness for structure detection. As a

measure of sampling adequacy, this statistical test indicated the proportion of variance for this

dataset was .806, which indicates a factor analysis could be useful for data analysis. Further,

Bartlett's test of sphericity was tested to identify unrelated variables within the dataset,

indicating that factor analysis would not be appropriate (Tabachnick & Fidell, 2007). This

dataset had statistically significant results (p<.000), based on Bartlett's test, which confirmed

moving forward with factor analysis. Other assumptions for factor analysis were considered to

include: (a) sample size, (b) linearity, (c) absence of outliers, (d) continuous data, (e) lack of

extreme multicollinearity, and, (f) low percentage of missing data (Beavers et al., 2013).

Principal component analysis (PCA) was selected to reduce the number of variables into

specific concepts to assist in meaningful interpretation (Beavers et al., 2013; Costello &

Osborne, 2005). Principal axis factoring (PAF) was conducted as well to evaluate the best

solution for data reduction and analysis. PCA was determined to accurately depict the concepts

under investigation. Several iterations of exploratory factor analysis were performed. Forty

survey items were entered into analysis. A ten-factor solution emerged from the exploratory

analysis. For each factor, the variance is computer to determine which factors to retain. The first

five factors contained the following variance amounts in sequential order: 19%, 12%, 9%, 7%, and 6% (see Table 13). The remaining five factors accounted for less than 5% of variance. As a rule of thumb, five to ten percent of total variance is recommended to retain a factor. Further, these components should account for 60% to 70% of total cumulative variance. Inspection of the scree plot indicated that five components should be retained, accounting for 54% total cumulative variance.

In Appendix J, six factors are shown, as initially, the job task familiarity factor was two separate factors. One of the factor iterations that is a dual question, familiarity with job task, and priority for receiving professional development on that skill, did not have a clear component structure. Thus, factor analysis was computed on job task survey items as a separate construct from the PCA. Appendix K presents that job task can be one construct instead of extracting two factors from the larger construct. For Factor 6, the eigenvalue is hovering close to one, and the percentage of total variance is below five percent. Technically, this factor could be kept as its own, but provided the additional factor analysis on this construct alone, provides more evidence to combine factor 4 and factor 6. This factor solution was determined by visual inspection of the rotated component matrix and scree plot. These five factors met interpretability criterion. A forced factor loading was conducted to form the five final constructs (see Table 13). The total variance accounted for remained the same at 54% with the five factors.

Table 13

Summary of Forced Exploratory Factor Analysis Using Principal Component Analysis with Varimax and Five Factors

	Priority Index	Leadership Index	Job Task Index	Manage Index	Influence Index
School's vision	-.017	**.540**	.022	-.009	-.027
Shared commitment (mission)	.074	**.737**	-.014	.062	.034
Student success = admin support	.009	**.579**	.141	-.122	.013
Needs of students	.034	**.747**	.034	-.063	.081
Student's Strengths	.042	**.679**	.100	.059	-.040
Equitable Access to Social Support	-.023	**.632**	.131	.015	-.141
Unbiased Student policies	-.029	**.727**	.071	-.036	.002
Equitable Student Membership	.044	**.780**	-.107	.056	.058
School Driven Supports to Support Return to Home School	.139	**.342**	-.021	.156	-.291
Workplace Conditions	.059	**.758**	.109	-.085	-.027
Strengthen Professional Capacity	.060	**.752**	.129	.033	-.038
Systems Perspective	.145	**.660**	.142	-.064	-.079
Management/Negative Morale	.114	-.047	-.027	.087	**.710**
Core Initiatives Impacted	.061	.037	-.016	-.121	**.766**
Time Commitment	.033	.125	.072	.085	**.768**
Disruption to Other Student Learning	-.014	.015	.002	.057	**.680**
Special Education Issue	.060	-.084	-.099	.034	**.357**
Hiring skilled paraprofessionals	.087	-.015	.039	**.906**	.137
Retaining skilled paraprofessionals	.094	-.006	.027	**.930**	.118
Hired skilled professionals	.149	-.023	-.001	**.925**	.155
Retaining skilled professionals	.166	-.033	.002	**.899**	.156
Lack of access to trained professionals	.073	-.067	-.083	.308	**.638**
Lack of systematic technical assistance	.027	-.113	-.021	.278	**.661**
Providing instructional resources	.181	.067	**.516**	.043	.047
Providing behavioral resources	.135	.057	**.729**	.009	-.036
Participating in behavior intervention plan	.135	.034	**.698**	-.022	-.165
Ensuring adherence to the behavior intervention plan	.195	.095	**.634**	-.031	-.213
Determining disciplinary actions	.018	-.032	**.651**	.062	.066
Making placement recommendations	.084	.019	**.649**	.052	.055
Evaluating teachers who serve this specific population	.040	.074	**.701**	.004	.018

	Priority Index	Leadership Index	Job Task Index	Manage Index	Influence Index
Providing instructional recommendations to teachers	.087	.144	**.649**	-.057	.204
Providing behavioral recommendations to teachers	.071	.042	**.837**	-.004	.016
Supporting these students in the gened setting, who do not have BIPs in place	.185	.076	**.764**	-.025	-.078
Including these students in school related activities	.122	.105	**.472**	.071	-.155
Providing instructional resources to a teacher	**.694**	.100	.068	.121	-.001
Providing behavioral resources to a teacher	**.680**	.141	.013	.002	.184
Participating in individualized education plan meetings	**.835**	.018	.232	.061	-.051
Participating in behavior intervention plan	**.830**	.056	.089	.012	-.009
Ensuring adherence to the behavior intervention plan	**.807**	.046	.127	.026	.016
Determining disciplinary actions	**.770**	.025	.141	.035	.028
Making placement recommendations	**.755**	-.032	.080	.082	.098
Evaluating teachers who serve this specific population	**.780**	.013	.089	.092	-.036
Providing instructional recommendations to teachers	**.742**	.015	.139	.110	.050
Providing behavioral recommendations to teachers	**.753**	.034	.082	.092	.186
Supporting these students in the gened setting	**.664**	.056	.128	-.114	.128
Including these students in school related activities	**.716**	.006	.178	.116	-.188
Eigenvalues	8.94	5.8	4.42	3.67	2.71
% Total Variance	19%	12.3%	9.4%	7.8%	5.8%

Note. Major factor loadings are bolded.

Internal Consistency and Test Content

Following the extensive exploratory factor analysis, the reliability of the overall survey

structure was evaluated across all items as a measure of internal consistency. Additionally, the

consistency between items within a factor were verified. Overall, the survey reliability before

factors were extracted was .837. Table 14 shows the Cronbach's Alpha scores for each extracted

factor. The development of the test content *a priori* provided ideas for developing constructs. The Leadership Attitudes Index, included twelve of the original thirteen items developed from the *Professional Standards for Educational Leaders (PSEL).* Next, the Influence Index includes seven items developed from influential contextual situations identified throughout the literature. The Management Index was extracted from within the Influence Index as the four items measured a different set of decision-making skills from the other 11 items. The last two factors are interrelated in that the principal was asked to identify their familiarity with a job task and then rate professional development priorities based on their familiarity. Job Task Index and Priority Index contain the 12 items; yet, evaluate two different questions. With internal consistency established for each factor, each research question was analyzed.

Table 14

Cronbach's Alpha Values across Extracted Factors

Factor	Cronbach's Alpha
Leadership Attitudes Index	.701
Influence Index	.807
Management Index	.955
Job Task Familiarity Index	.853
Priority Index	.925

Principal Self-Reported Leadership Attitudes Index

Based on national and state professional standards, principals are evaluated on possessing certain leadership skills. The first research question sought to understand how elementary school principals self-report their leadership attitudes on a Likert scale from 1 (very untrue of me) to 5

(very true of me). Table 15 presents the response patterns of elementary principals concerning leadership attitudes.

Response patterns concerning leadership attitudes. Principals were asked to rate their attitudes on 12 leadership statements related to PSEL (2015) professional standards. The leadership statements were selected based on alignment with the merged conceptual framework, implementation science and collective impact theory. Further, all section items formed the construct of Leadership Attitude Index for analysis. The first two leadership statements were asked to explore principals' attitudes towards a mission and vision related to collective impact theory. Eighty-six percent of principals reported the belief that the school's vision did change based on changing expectations of individualized student situations; *somewhat true of me* (29.6%) and *very true of me* (57.6) were combined. There was a positive attitude towards changing the school vision to meet the needs of individualized student situations. Next, principals rated a leadership statement on *school staff's shared commitment to the mission of the school.* Ninety-five percent indicated a positive attitude toward shared commitment of the mission to the school, which is critical in achieving change initiatives; 5% of principals reported *very untrue of me*.

The next two leadership statements examined the responsibility for students' success and student needs as a school community member. Eighty-nine percent of principals reported that the responsibility for each student's academic success is reliant on administrative support. Whereas, 4% indicated *very untrue of me*. Ninety-seven percent of principals indicated *the needs of students are considered prior to making a decision that impacts access to school related activities*. Therefore, principals report positive leadership attitudes for items related to supporting students with or without disabilities. When asked if faculty employ each student's strengths as

95

assets for teaching, 88% indicated *somewhat true of me* or *very true of me*. Eighty-seven percent indicated the belief that each student has equitable access to social support necessary for future success; 4% indicated *very untrue of me* or *somewhat untrue of me*.

While student policies may be driven by district initiatives or state initiatives, many principals rely on student policies to determine disciplinary actions. When asked about the development of student policies, 91% of principals indicated that consideration was given to students with disabilities; 5.3% of principals indicated a neutral attitude towards this statement. Overwhelmingly. 98% indicated that every student was encouraged to be an equitable member of the school community. Whereas, 56% of principals indicated a neutral attitude towards the allocation of school resources to return students, placed out of division, to their home public school. Approximately 50% indicated more positive attitudes towards this statement; with 9% reporting *very untrue of me*.

The last three questions examined the role of the principal as an implementation driver, who actively promotes effective practices, removes barriers to effective implementation, alignment of initiatives, and allocates resources to support staff. Ninety-five percent reported that workplace conditions promote professional staff to implement effective practices; 92% indicated that school resources are allocated to support strengthening professional capacity; and, 86% believed coherence among improvement efforts is promoted by a systems perspective. Overall, a majority of principals indicated a positive leadership attitude index.

Table 15

Response Patterns of Elementary Principals Concerning Leadership Attitudes

Section A: Leadership Statements		
Q-1: The school's vision is based on changing expectations that consider individualized situations of students.	N	%
1: Very untrue of me	10	3.4
2: Somewhat untrue of me	4	1.3
3: Neutral	24	8.1
4: Somewhat true of me	88	29.6
5: Very true of me	171	57.6
Q-2: The school staff have a shared commitment to the mission of the school.	N	%
1: Very untrue of me	5	1.7
2: Somewhat untrue of me	0	0.0
3: Neutral	9	3.0
4: Somewhat true of me	99	32.8
5: Very true of me	189	62.6
Q-3: The responsibility for each student's academic success is reliant on administrative support.	N	%
1: Very untrue of me	4	1.3
2: Somewhat untrue of me	7	2.3
3: Neutral	20	6.6
4: Somewhat true of me	87	28.9
5: Very true of me	183	60.8

Q-4: The needs of students are considered prior to making a decision that impacts access to school related activities.	N	%
1: Very untrue of me	2	0.7
2: Somewhat untrue of me	2	0.7
3: Neutral	6	2.0
4: Somewhat true of me	49	16.1
5: Very true of me	245	80.6
Q-5: Faculty employ each student's strengths as assets for teaching.	N	%
1: Very untrue of me	1	0.3
2: Somewhat untrue of me	4	1.3
3: Neutral	28	9.3
4: Somewhat true of me	150	49.8
5: Very true of me	118	39.2
Q-6: Each student has equitable access to social support necessary for future success.	N	%
1: Very untrue of me	1	0.3
2: Somewhat untrue of me	10	3.3
3: Neutral	23	7.6
4: Somewhat true of me	111	36.9
5: Very true of me	156	51.8
Q-7: Student policies are developed to address student misconduct in an unbiased manner with consideration given to students with disabilities.	N	%
1: Very untrue of me	3	1.0
2: Somewhat untrue of me	4	1.3
3: Neutral	16	5.3
4: Somewhat true of me	64	21.3
5: Very true of me	213	71.0

Q-8: Each student, regardless of disability, is encouraged to be an equitable member of the school community.	N	%
1: Very untrue of me	3	1.0
2: Somewhat untrue of me	1	0.3
3: Neutral	3	1.0
4: Somewhat true of me	28	9.2
5: Very true of me	269	88.5
Q-9: There are school driven resources allocated to support students, placed out of division, to return to their comprehensive public school.	N	%
1: Very untrue of me	13	4.5
2: Somewhat untrue of me	13	4.5
3: Neutral	107	37.3
4: Somewhat true of me	69	24.0
5: Very true of me	85	29.6
Q-10: Workplace conditions promote professional staff to implement effective practices.	N	%
1: Very untrue of me	3	1.0
2: Somewhat untrue of me	3	1.0
3: Neutral	7	2.3
4: Somewhat true of me	85	28.1
5: Very true of me	204	67.5
Q-11: School resources are allocated to support strengthening professional capacity.	N	%
1: Very untrue of me	4	1.3
2: Somewhat untrue of me	2	0.7
3: Neutral	19	6.3
4: Somewhat true of me	107	35.2
5: Very true of me	172	56.6

Q-12: A systems perspective promotes coherence among improvement efforts and all aspects of school programs.	N	%
1: Very untrue of me	3	1.0
2: Somewhat untrue of me	4	1.4
3: Neutral	28	9.5
4: Somewhat true of me	137	46.3
5: Very true of me	124	41.9

Group differences in leadership attitudes. In effort to better understand groups of principals versus individual principals, this question was investigated using the following demographic variables: location of school and length of service in current school. The Leadership Attitudes Index was extracted as a construct to be used for analysis beyond self-report frequencies and percentages. A one-way analysis of variance (ANOVA) was conducted to determine if self-reported leadership scores were different for groups with varying school locations. Principals were classified into four groups: rural ($n = 127$), town ($n = 30$), suburb ($n = 88$) and city ($n = 56$). There were no outliers, as assessed by boxplot; and there was homogeneity of variances, as assessed by Levene's test of homogeneity of variances ($p = .321$). Data was approximately normally distributed. Provided the large sample size, the statistical test was determined appropriate for this dataset. Leadership scores increased from city ($M = 4.41$, $SD = 0.37$), to rural ($M = 4.48$, $SD = .32$), to suburb ($M = 4.51$, $SD = .319$) to town ($M = 4.52$, $SD = .26$) location groups, in that order, but the differences between these location groups was not statistically significant, $F(3, 297) = 1.225$, $p = .301$. These results are depicted in Table 16 and 17.

Table 16

Descriptive Statistics for Location of School, Leadership Index

	N	Mean	SD	SE	95% CI		Min	Max
					LL	UL		
City	56	4.41	.3676	.0491	4.31	4.51	3.58	5.00
Rural	127	4.48	.3216	.0285	4.42	4.54	3.75	5.00
Suburb	88	4.51	.3197	.0340	4.44	4.57	3.67	5.00
Town	30	4.52	.2573	.0469	4.42	4.61	4.00	5.00
Total	301	4.48	.3249	.0187	4.44	4.51	3.58	5.00

Note. SD = standard deviation; SE = standard error; CI = confidence interval; LL = lower limit; UL = upper limit

Table 17

Summary of One-way ANOVA, Location and Leadership Index

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.387	3	.129	1.225	.301
Within Groups	31.286	297	.105		
Total	31.673	300			

Note. n= 300

Next, a one-way analysis of variance (ANOVA) was conducted to determine if self-reported leadership scores were different for groups with varying lengths of service in their current building. Principals were classified into seven groups: less than 1 year (n = 51), 1-3 years (n = 114), 4-6 years (n = 71), 7-9 years (n = 33), 10-12 years (n=11), 13-15 years (n=11), and 16 years or more (n=10). There were no outliers, as assessed by boxplot; and there was homogeneity of variances, as assessed by Levene's test of homogeneity of variances (p = .182). Data was approximately normally distributed. The Leadership Index was statistically significantly different for different groups of length of service, $F(6, 294) = 2.894$, $p < .009$.

Given unequal variances, post hoc tests were conducted to determine the source of significance. Leadership Index scores were statistically significant (see Table 18) between varying length of service groups indicated by Welch's $F(6, 4.514) = 47.801$, p=.001. Mean

differences between these groups are provided in Table 19. A Games-Howell post hoc analysis indicated that the mean increased from less than one year to one-three years was statistically significant (.30, 95% CI [.652, .5357], p=.006). Additionally, there was a mean increase from one-three years to 10-12 years which was statistically significant (.31, 95% CI [.0913, .5357], p=.003). Mean increases were statistically significant between the 4-6 years group and the 10-12 years group (.25, 95% CI [.0303, .4812], p=.021). A mean increase between the 10-12 years group and the 13-15 years group was statistically significant (.47, 95% CI [.0677, .8088] p=.017). The effect size is n^2=.056. By Cohen's (1988) guidelines this is a medium effect size between groups.

Table 18

Summary of one-way ANOVA, Length of Service and Leadership Index

	Sum of Squares	*df*	Mean Square	F	Sig.
Between Groups	1.766	6	.294	2.894	.009*
Within Groups	29.906	294	.102		
Total	31.673	300			

*p<.05, *Note. n=300*

Table 19

Descriptive Statistics for Length of Service in Current School, Leadership Index

	N	Mean	SD	SE	95% CI LL	95% CI UL	Min	Max
Less than 1 year	51	4.45	.3123	.0437	4.36	4.54	3.82	5.00
1-3 years	114	4.44	.3248	.0304	4.38	4.50	3.73	5.00
4-6 years	71	4.50	.2873	.0340	4.43	4.57	3.67	5.00
7-9 years	33	4.57	.3778	.0657	4.43	4.70	3.58	5.00
10-12 years	11	4.76	.1952	.0588	4.63	4.89	4.50	5.00
13-15 years	11	4.28	.3504	.1056	4.05	4.52	3.70	5.00
16 years or more	10	4.52	.3581	.1132	4.26	4.77	3.82	4.92
Total	301	4.48	.3249	.0187	4.44	4.52	3.58	5.00

Note. SD = standard deviation; SE = standard error; CI = confidence interval; LL = lower limit; UL = upper limit

Principals' Self-Reported Contextual Situations and Overall Influence Score

The next research question sought to understand how elementary school principals self-report on the Influence Index on a Likert scale from 1 (not at all influential) to 5 (very influential). In Table 20, the response patterns of elementary principals concerning the extent to which certain contextual factors influence their decision to request a different placement for a student with autism exhibiting challenging behavior. Some principals (35.4%) indicated that management of the student's challenging behavior negatively affected morale and only slightly influenced their decision to request a different placement; 27% of principals did not see staff morale as influential at all in recommending a placement change; and, only 3% of principals found negative staff morale as an extremely influential contextual situation.

When asked the core initiative in their school, sixty percent of principals reported reading and math achievement. Given the contextual situation of inability to implement core initiatives due to challenging behavior, 29.5% of principals indicated that this situation was only somewhat influential; 24.7% of principals responded that this was slightly influential; and, 20% principals reported very influential. The remaining principals (6.8%) reported that impact on core initiatives was extremely influential in their decision-making. Principals were asked to consider the time commitment of staff managing a student's challenging behavior. Some principals selected somewhat influential (31.1%) in their requesting of placement change; 27.1% of principals responded very influential; 20.7% indicated slightly influential; and, 12.4% indicated extremely influential. Only 8.7% of principals indicated that the time commitment of their staff was not at all influential.

Provided the following contextual situation, *disruption to the other student's learning*, 32% of principals reported that this was somewhat influential in requesting a different placement

for a student with autism. A small percentage, 6.3%, reported that this situation would not influence their decision. A close number of principals were split between slightly influential (26%) or very influential (25%). Ten percent of principals identified that this situation was extremely influential in deciding to request a placement change. When asked about their decision-making regarding *their building staff's perception of behavioral management as a special education issue*, 56.1% of principals indicated that this was not at all influential; 23% principals indicated slightly influential; and, 14.9% principals indicated somewhat influential. Seven principals identified this contextual situation as extremely influential in their decision-making.

The next four questions (Q18-Q21) were related to hiring and retaining skilled professionals and paraprofessionals who would support students with autism exhibiting challenging behavior. These questions were pulled out of the Influence Index identified during the factor analysis, and created their own construct, management index. Similar results were seen across these four questions. Approximately forty percent of principals indicated hiring and retaining skilled professionals was extremely influential as a contextual situation. For hiring and retaining paraprofessionals, 34.8% of principals identified this situation as very influential. Anecdotally, one principal provided a comment that stated "funding of additional staff can be influential."

The last two questions from Section B, looked at access to trained professionals to assist school staff and systematic support. When asked if lack of access to trained professionals to assist school staff in maintaining a student with challenging behavior, 28.9% of principals responded somewhat influential; 24.1% indicated very influential; 17% indicated slightly influential; and, 16.7% selected extremely influential. The next question regarding systematic

technical assistance yielded a similar response pattern with 30.8% principals indicating

somewhat influential; however, 16% of principals indicated not at all influential, which indicates

access to additional trained professionals might be more influential.

Table 20

Response Patterns of Elementary Principals Concerning Influential Contextual Factors

Section B: Contextual Situations		
Q-13 Your management of a student's challenging behavior has negatively impacted staff morale.	N	%
1: Not at all influential	82	27.6
2: Slightly influential	105	35.4
3: Somewhat influential	69	23.2
4: Very influential	31	10.4
5: Extremely influential	10	3.4
Q-14 Your staff are unable to effectively implement core building initiatives as a result of a student's challenging behavior.	N	%
1: Not at all influential	56	19.0
2: Slightly influential	73	24.7
3: Somewhat influential	87	29.5
4: Very influential	59	20.0
5: Extremely influential	20	6.8
Q-15 The time commitment required of staff to maintain the student with challenging behavior in their current setting.	N	%
1: Not at all influential	26	8.7
2: Slightly influential	62	20.7
3: Somewhat influential	93	31.1
4: Very influential	81	27.1
5: Extremely influential	37	12.4

Q-16 General education teachers perceive that one student's challenging behavior is disrupting the rest of the students' access to instruction.	N	%
1: Not at all influential	19	6.3
2: Slightly influential	78	26.0
3: Somewhat influential	96	32.0
4: Very influential	75	25.0
5: Extremely influential	32	10.7

Q-17 All building level staff perceive that behavioral management is a special education issue.	N	%
1: Not at all influential	166	56.1
2: Slightly influential	68	23.0
3: Somewhat influential	44	14.9
4: Very influential	11	3.7
5: Extremely influential	7	2.4

Q-18 Hiring skilled paraprofessionals	N	%
1: Not at all influential	35	11.7
2: Slightly influential	44	14.7
3: Somewhat influential	45	15.1
4: Very influential	104	34.8
5: Extremely influential	71	23.7

Q-19 Retaining skilled paraprofessionals	N	%
1: Not at all influential	42	14.1
2: Slightly influential	38	12.8
3: Somewhat influential	41	13.8
4: Very influential	100	33.6
5: Extremely influential	77	25.8

Q-20 Hiring skilled professionals	N	%
1: Not at all influential	30	10.0
2: Slightly influential	30	10.0
3: Somewhat influential	35	11.7
4: Very influential	82	27.4
5: Extremely influential	122	40.8
Q-21 Retaining skilled professionals	N	%
1: Not at all influential	34	11.5
2: Slightly influential	26	8.8
3: Somewhat influential	35	11.8
4: Very influential	80	27.0
5: Extremely influential	121	40.9
Q-22 Lack of access to training professionals to assist your staff with maintaining a student with challenging behavior.	N	%
1: Not at all influential	39	13.3
2: Slightly influential	50	17.0
3: Somewhat influential	85	28.9
4: Very influential	71	24.1
5: Extremely influential	49	16.7
Q-23 Lack of systematic technical assistance provided to your building level staff.	N	%
1: Not at all influential	47	16.1
2: Slightly influential	61	20.9
3: Somewhat influential	90	30.8
4: Very influential	67	22.9
5: Extremely influential	27	9.2

In effort to understand the relationship of these contextual factors between different

characteristics of principals, the extracted factor, Influence Index, was used to assess differences

in principals' situations (e.g. school location). For the next analysis, the location of school

served as the independent variable, and the Influence Score as the dependent variable. A one-

way ANOVA was conducted to further examine the following research question: What are the

self-reported contextual factors that Virginia elementary school principals report as influencing

their decisions to make a different placement decision for students with autism exhibiting

challenging behavior?

Principals were classified into four groups: rural ($n = 127$), town ($n = 30$), suburb ($n = 88$)

and city ($n = 56$). All assumptions were met for this test. There were no statistically significant

differences in Influence score between the different locations of schools, $F(3, 295) = 1.605$,

p=.188. Table 21 provides the descriptive statistics for locales based on influence score. Table 22

follows with one-way ANOVA results.

Table 21

Descriptive Statistics for Locales, Influence Score

	N	Mean	SD	SE	95% CI		Min	Max
					LL	UL		
City	56	3.01	.4522	.0604	2.89	3.14	2.14	3.86
Rural	127	2.87	.4998	.0443	2.78	2.96	2.00	3.86
Suburb	86	2.85	.4580	.0493	2.75	2.95	2.00	3.71
Town	30	2.84	.4531	.0827	2.67	3.01	2.14	3.71
Total	299	2.89	.4762	.0275	2.84	2.95	2.00	3.86

Note. SD = standard deviation; SE = standard error; CI = confidence interval; LL = lower limit;
UL = upper limit

Table 22

Summary of one-way ANOVA, Locale and Influence Score

	Sum of Squares	*df*	Mean Square	F	Sig.
Between Groups	1.086	3	.362	1.605	.188
Within Groups	66.515	295	.225		
Total	67.601	298			

Note. n=298

Principal Self-Reported Professional Development Needs

The third research question posits: what are the self-reported professional development needs of Virginia elementary principals on job-related tasks? First, the frequencies and percentages for each question related to familiarity with job tasks and the corresponding priority for professional development are presented in Table 23. On the left hand side of the table, each question is listed and familiarity with job task Likert scale is provided. The frequencies and percentages are located directly to the right of the job task familiarity Likert scale. The corresponding priority for professional development question results are provided beside the job familiarity scores.

Response patterns for familiarity with job tasks. Twelve job-tasks related to supporting students with autism who exhibit challenging behavior were listed in no certain order. Each principal was asked to rate the job-task by familiarity with that task, followed by their priority for receiving professional development on that specific job task. When asked familiarity with providing instructional recommendations to teachers, 86% of principals indicated moderately to extremely familiar with this task; subsequently, 75% of principals reported high to essential priority for receiving further professional development in this area. Eighty-two percent of principals indicated moderately to extremely familiar with providing behavioral resources to teachers of students with autism; 82% reported that receiving additional professional

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development for this task was a high to essential priority. A similar percentage of principals reported moderately to extremely familiar with participating in the individualized education plan meeting (IEP; 95%) and participating in the behavior intervention planning (BIP; 91%). Interestingly, more principals reported a high to essential priority for receiving continuing education on participating in the BIP meeting (71%) in comparison to participation in the IEP meeting (34%). Most principals reported moderately to extremely familiar with ensuring adherence to the BIP (91%), with 73% indicating a high to essential priority for continuing education on this task.

A relatively smaller percentage of principals (71%) specified moderately to extremely familiar with determining disciplinary actions; and, 35% of principals indicated high priority for professional development on determining discipline actions. In regards to making placement decisions, 86% of principals selected moderately to extremely familiar; and, 30% of principals indicated this job task as a medium priority. Ninety-three percent of principals indicated moderately to extremely familiar with evaluating teachers who support students with autism; 58% indicating teacher evaluation as a high priority for professional development. Approximately 90% of principals reported moderately to extremely familiar with providing instructional recommendations for students with autism; 85% selected moderately to extremely familiar with providing behavioral recommendations; and, 85% indicated moderately to extremely familiar with supporting students with autism in general education without BIPs. Seventy-five percent of principals selected behavioral recommendations and supporting students with autism in general education as high to essential priorities for professional development. About 72% of principals indicated moderately to extremely familiar with including students with autism in school activities; and, 40% of principals wanted additional support with this job task.

Table 23

Response Patterns of Elementary Principals Regarding Job Task Familiarity and Professional Development Priority

Q-24 Providing instructional resources for a teacher

Familiarity with Job Task	N	%	Priority for Professional Development	N	%
1: Not at all familiar	2	0.7	1: Not a priority	6	2.0
2: Slightly familiar	7	2.3	2: Low Priority	10	3.4
3: Somewhat familiar	32	10.7	3: Medium Priority	64	21.5
4: Moderately familiar	138	46.0	4: High Priority	103	34.7
5: Extremely familiar	121	40.3	5: Essential Priority	114	38.4

Q-25 Providing behavioral resources to a teacher

Familiarity with Job Task	N	%	Priority for Professional Development	N	%
1: Not at all familiar	2	0.7	1: Not a priority	2	0.7
2: Slightly familiar	11	3.7	2: Low Priority	4	1.4
3: Somewhat familiar	37	12.4	3: Medium Priority	44	14.9
4: Moderately familiar	132	44.3	4: High Priority	112	37.8
5: Extremely familiar	116	38.9	5: Essential Priority	134	45.3

Q-26 Participating in individualized education plan meetings

Familiarity with Job Task	N	%	Priority for Professional Development	N	%
1: Not at all familiar	0	0.0	1: Not a priority	16	5.4
2: Slightly familiar	0	0.0	2: Low Priority	37	12.5
3: Somewhat familiar	7	2.3	3: Medium Priority	62	20.9
4: Moderately familiar	36	12.0	4: High Priority	81	27.3
5: Extremely familiar	285	85.7	5: Essential Priority	101	34.0

Q-27 Participating in behavior intervention planning

Familiarity with Job Task	N	%	Priority for Professional Development	N	%
1: Not at all familiar	0	0.0	1: Not a priority	9	3.0
2: Slightly familiar	1	0.3	2: Low Priority	14	4.7
3: Somewhat familiar	26	8.6	3: Medium Priority	62	20.9
4: Moderately familiar	104	34.6	4: High Priority	105	35.4
5: Extremely familiar	170	56.5	5: Essential Priority	107	36.0

Q-28 Ensuring adherence to the behavior intervention plan

Familiarity with Job Task	N	%	Priority for Professional Development	N	%
1: Not at all familiar	0	0.0	1: Not a priority	8	2.7
2: Slightly familiar	3	1.0	2: Low Priority	14	4.8
3: Somewhat familiar	21	7.1	3: Medium Priority	54	18.4
4: Moderately familiar	100	33.7	4: High Priority	93	31.6
5: Extremely familiar	173	58.2	5: Essential Priority	125	42.5

Q-29 Determining disciplinary actions

Familiarity with Job Task	N	%	Priority for Professional Development	N	%
1: Not at all familiar	1	0.3	1: Not a priority	8	2.7
2: Slightly familiar	2	0.7	2: Low Priority	43	14.6
3: Somewhat familiar	17	5.7	3: Medium Priority	76	25.9
4: Moderately familiar	70	23.5	4: High Priority	104	35.4
5: Extremely familiar	208	69.8	5: Essential Priority	63	21.4

Q-30 Making placement recommendations

Familiarity with Job Task	N	%	Priority for Professional Development	N	%
1: Not at all familiar	4	1.3	1: Not a priority	10	3.4
2: Slightly familiar	7	2.3	2: Low Priority	49	16.6
3: Somewhat familiar	31	10.4	3: Medium Priority	91	30.8
4: Moderately familiar	111	37.1	4: High Priority	76	25.8
5: Extremely familiar	146	48.8	5: Essential Priority	69	23.4

Q-31 Evaluating teachers who serve this population of students

Familiarity with Job Task	N	%	Priority for Professional Development	N	%
1: Not at all familiar	0	0.0	1: Not a priority	13	4.4
2: Slightly familiar	5	1.7	2: Low Priority	37	12.5
3: Somewhat familiar	16	5.4	3: Medium Priority	72	24.3
4: Moderately familiar	95	31.8	4: High Priority	90	30.4
5: Extremely familiar	183	61.2	5: Essential Priority	84	28.4

Q-32 Providing instructional recommendations to teachers

Familiarity with Job Task	N	%	Priority for Professional Development	N	%
1: Not at all familiar	0	0.0	1: Not a priority	9	3.0
2: Slightly familiar	9	3.0	2: Low Priority	14	4.7
3: Somewhat familiar	29	9.7	3: Medium Priority	60	20.3
4: Moderately familiar	115	38.5	4: High Priority	114	38.5
5: Extremely familiar	146	48.8	5: Essential Priority	99	33.4

Q-33 Providing behavioral recommendations to teachers

Familiarity with Job Task	N	%	Priority for Professional Development	N	%
1: Not at all familiar	0	0.0	1: Not a priority	6	2.0
2: Slightly familiar	8	2.7	2: Low Priority	12	4.1
3: Somewhat familiar	32	10.9	3: Medium Priority	50	17.1
4: Moderately familiar	131	44.6	4: High Priority	114	38.9
5: Extremely familiar	123	41.8	5: Essential Priority	111	37.9

Q-34 Supporting these students in general education

Familiarity with Job Task	N	%	Priority for Professional Development	N	%
1: Not at all familiar	2	0.7	1: Not a priority	2	0.7
2: Slightly familiar	5	1.7	2: Low Priority	10	3.4
3: Somewhat familiar	34	11.5	3: Medium Priority	57	19.4
4: Moderately familiar	118	39.9	4: High Priority	125	42.5
5: Extremely familiar	137	46.3	5: Essential Priority	100	34.0

Q-35 Including these students in school related activities

Familiarity with Job Task	N	%	Priority for Professional Development	N	%
1: Not at all familiar	0	0.0	1: Not a priority	28	9.5
2: Slightly familiar	5	1.7	2: Low Priority	33	11.2
3: Somewhat familiar	11	3.7	3: Medium Priority	56	19.0
4: Moderately familiar	64	21.7	4: High Priority	59	20.1
5: Extremely familiar	215	72.9	5: Essential Priority	118	40.1

To further test this question, the dependent variable is job familiarity score. The independent variables will include groupings of principals by length of service, type of autism

programming in school, and region. A Pearson's correlation was conducted to identify if a correlation exists between job-task familiarity score and corresponding priority scores. Section C of the survey instrument paired these two constructs side-by-side to evaluate group differences in familiarity and priorities for professional development. Table 24 shows a moderate correlation between familiarity with job tasks and priority for receiving professional development on associated job tasks based on principals' length of service in current building, $r=.328$. Figure 5 illustrates the direction of the linear relationship. Familiarity with job tasks score statistically explained 11% of the variability in priority score.

Table 24

Pearson Correlations for Job Tasks Index and Professional Development (PD) Priority Index

		Job_Tasks	PD_Priority
Job_Tasks	Pearson Correlation	1	.328 [a]
	Sig. (2-tailed)		.000
	N	300	297
PD_Priority	Pearson Correlation	.328 [a]	1
	Sig. (2-tailed)	.000	
	N	297	298

[a] Correlation is significant at the 0.01 level (2-tailed).

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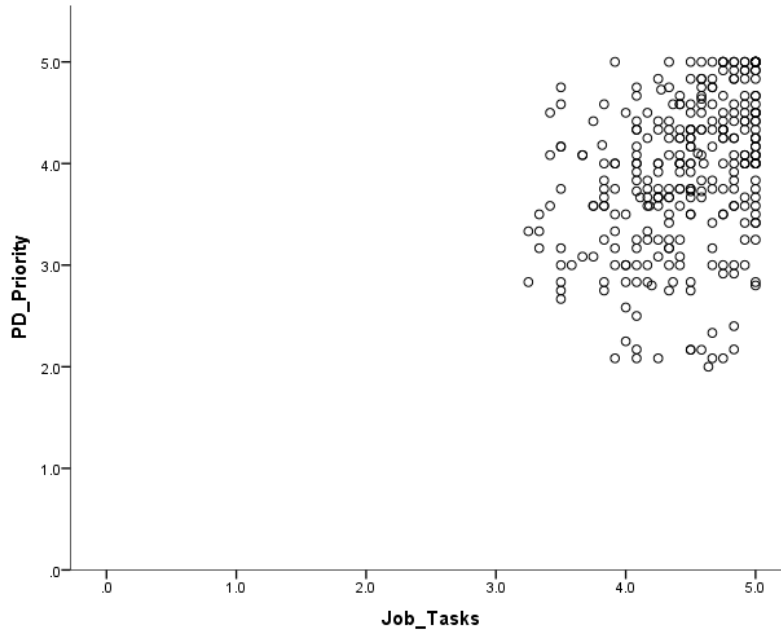
Figure 5. Positive correlation between job tasks index and priority index.

One-way ANOVAs were conducted for each of the independent variables (e.g. region in Virginia and school location) to determine if job-task familiarity score differed for each set of groups. There was no statistical difference between job task familiarity score across groups by region or groups by locale (see Table 25 and 26).

Table 25

Summary of ANOVA, Job Tasks and Region

	Sum of Squares	*df*	Mean Square	F	Sig.
Between Groups	3.000	7	.429	1.921	.066
Within Groups	65.155	292	.223		
Total	68.155	299			

Note. n=299.

Table 26

Summary of ANOVA, Job Tasks and Locale

	Sum of Squares	*df*	Mean Square	F	Sig.
Between Groups	.716	3	.239	1.048	.372
Within Groups	67.439	296	.228		
Total	68.155	299			

Note. n=299.

Job task familiarity score was statistically significant between different length of service groups, $F(6, 293)=3.266$, p=.004. These results can be found in Table 27. The Games Howell post hoc test was conducted to identify the source of significance between unequal groups (Field, 2013). No statistically significant findings were obtained from post hoc testing. Given the one-way ANOVA is a conservative test, there may have been disagreement between the test itself and post hoc test. The mean plot for this specific test was visually inspected. Principals with 13-15 years of service reported familiarity with job skills related to supporting students with autism, and challenging behavior, relatively lower than counterparts with less than a year to three years of experience. Principals with 7-9 and 10-12 years of service reported a relatively high job-familiarity score.

Table 27

Job Tasks and Length of Service

	Sum of Squares	*df*	Mean Square	F	Sig.
Between Groups	4.272	6	.712	3.266	.004*
Within Groups	63.883	293	.218		
Total	68.155	299			

*p<.05
Note. n=299.

Provided this statistically significant finding between length of service and job task familiarity score, the priority index for professional development will be examined based on

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length of service in the analysis of research question five. One-way ANOVAs were conducted with priority score as the dependent variable and school location, region, and type of autism programming. No statistical differences were identified across any of the independent variables tested with priority score as the dependent variable.

Given the positive correlation between job tasks score and priority, priority score was statistically significant between different length of service groups as well, $F(6, 294)=2.814$, p=.040). These results can be found in Table 28. Mean increases were statistically significant between the 4-9 years group and the 10-15 years group (.45, 95% CI [.0039, .8916], p=.047). The length of service groups were combined to collapse some of the categorical variables and to meet assumptions for 5 cells per variable, see Table 29.

Table 28

Summary of ANOVA, Priority Score and Length of Service

	Sum of Squares	*df*	Mean Square	F	Sig.
Between Groups	4.524	3	1.508	2.814	.040*
Within Groups	157.561	294	.536		
Total	162.085	297			

*p<.05
Note. n=297.

Table 29

Descriptive Statistics for Newly Grouped Length of Service Variable

					95% CI			
	N	Mean	SD	SE	LL	UL	Min	Max
Less than 1 to 3 years	163	3.85	.6672	.0522	3.75	3.95	2.08	5.00
4 years to 9 years	104	4.02	.7849	.0769	3.86	4.16	2.08	5.00
10 years to 15 years	22	3.57	.8629	.1839	3.18	3.95	2.00	4.75
16 years or more	9	4.09	.8910	.2970	3.41	4.78	2.08	4.83
Total	298	3.89	.7387	.0427	3.81	3.98	2.00	5.00

Note. SD = standard deviation; SE = standard error; CI = confidence interval; LL = lower limit; UL = upper limit

Principals' Leadership Behaviors and Familiarity with Tools, Practices, and Guidelines

Initially, an ordinal logistic regression was selected to test the predictive relationship of familiarity with state tools and practices on reported leadership attitudes. However, the dataset did not meet all of the assumptions required to complete this analysis. The research question states: What is the relationship between elementary principals' self-reported leadership attitudes and their familiarity with professional evaluation standards, tools, and guidelines? Linear regression was conducted to understand the effect on the mean standard practices familiarity score (e.g. evidence-based practices, teacher evaluation, and principal evaluation) on leadership attitudes index. To assess each assumption related to this test, a scatter plot was visually inspected to determine linearity via a superimposed regression line. Homoscedasticity and normality of the residuals was confirmed. The prediction equation was: leadership belief index = 4.092 + (.119*standard practices). The average standard practices familiarity score was statistically significantly predicted leadership attitude scores, $F(1, 296) = 36.25$, p=.000, accounting for 10.9% of the variation in standard practices score with adjusted R^2=10%, a small size effect. Table 30 and 31 show a positive correlation between familiarity with standards practice scores and leadership attitudes index, R=.330.

Table 30

Correlation between Leadership Belief Index and Predicted Leadership Belief Index

		Leadership Belief Index	Predicted_value _LeadScore Mean Standards Practice Score
Leadership Belief Index	Pearson Correlation	1	.330**
	Sig. (2-tailed)		.000
	N	301	298
Predicted_value_LeadScore Mean Familiarity Score	Pearson Correlation	.330**	1
	Sig. (2-tailed)	.000	
	N	298	298

Note. *n*=298. **Correlation is significant at the 0.01 level (2-tailed).

Table 31

Summary of Linear Regression Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.330[a]	.109	.106	.30331	1.955

a. Predictors: (Constant), mean_standards practices score
b. Dependent Variable: Leadership Beliefs

Principals' Job Familiarity Score and Demographics

For this specific research question, regression analysis was initially selected for analysis.

However, many of the assumptions were violated. Thus, the one-way ANOVA was used to

evaluate differences between groups of elementary principals by additional demographics to

understand needs in professional development. The first analysis explored group differences

between principals' experience with students with autism and their mean job familiarity score.

While no statistically significant results were found (see Table 32), the mean differences (see

Table 33) present an interesting finding. It is important to note that there are unequal groups, and

this question had several missing values (*n*=12). Given the sample size, this question was

retained and missing values were not imputed. The mean plot was visually inspected (see Figure 6) which indicated some group differences that require further analysis. Principals, with specialized autism programming in their schools, self-reported a lower job task familiarity score compared to principals who had experience with these students only. While all principals, regardless of experience, reported to be moderately to extremely familiar with most job tasks specifically related to supporting students with autism exhibiting challenging behavior.

Table 32

Summary of ANOVA, Experience with Autism and Job Familiarity

	Sum of Squares	*df*	Mean Square	F	Sig.
Between Groups	.269	3	.090	.431	.731
Within Groups	59.013	284	.208		
Total	59.282	287			

Note. n=287.

Table 33

Mean Differences between Principal Experience Groups on Job Familiarity Score

	N	Mean	SD	SE	95% CI LL	95% CI UL
All students with autism in general education classrooms	83	4.45	.4611	.0506	4.35	4.55
Specialized programming for all students with autism	5	4.33	.5432	.2429	3.66	5.01
Students with autism in gened classrooms and offers specialized programming	191	4.44	.4547	.0329	4.38	4.51
I have experience with these students only	9	4.59	.37028	.1234	4.31	4.88
Total	288	4.45	.45448	.0267	4.39	4.50

Note. SD = standard deviation; SE = standard error; CI = confidence interval; LL = lower limit; UL = upper limit
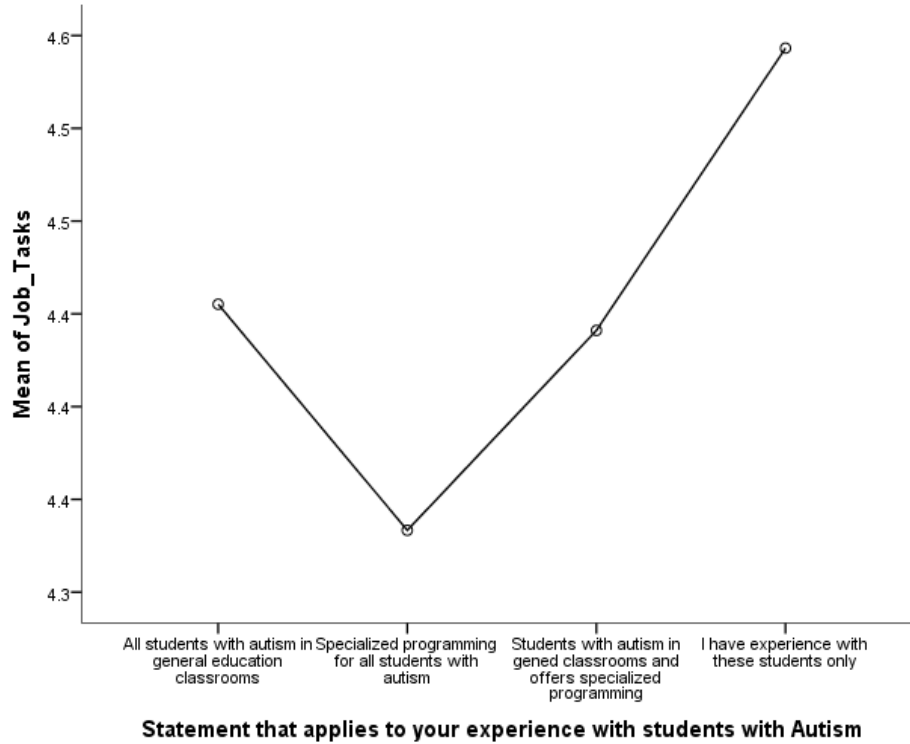
Figure 6. Mean plot of autism experience and job task score.

Next, the group differences on job task familiarity score were evaluated across the number of trainings received on autism or challenging behavior. A one-way ANOVA was conducted and no statistically significant differences were identified between principals who had no training to those who had five or more trainings (see Table 34). Given the complexity of the job task familiarity and priority index, further details on the type of training received, e.g. professional learning community versus one-day workshop, was not collected. In Table 35, no statistically significant results were found between groups of principals based on the number of trainings on challenging behavior.

Table 34

Summary of ANOVA, Number of Trainings on Autism and Job Familiarity Score

	Sum of Squares	*df*	Mean Square	F	Sig.
Between Groups	.805	4	.201	.987	.415
Within Groups	60.168	295	.204		
Total	60.973	299			

Note. *n*=299.

Table 35

Summary of ANOVA, Number of Trainings on Challenging Behavior and Familiarity Score

	Sum of Squares	*df*	Mean Square	F	Sig.
Between Groups	1.129	3	.376	1.861	.136
Within Groups	59.844	296	.202		
Total	60.973	299			

Note. *n*=299.

Chapter V

Discussion

The purpose of this research was to examine the relationship between principals'

demographic characteristics, the influence of contextual factors related to challenging behavior

and autism, and leadership attitudes that influence priorities for their school and professional

development. To improve professional development programs for principal leaders, it is

necessary to understand factors that influence these leaders ability to maintain students with

challenging behaviors and autism in the public school setting. A statewide sample of 884

elementary school principals were surveyed. A total of 305 surveys were completed for a 34.5%

return rate. Provided the demographics collected, the sample obtained closely mirrors

representation of the total population. These results can be considered generalizable and

representative of the needs of Virginia elementary school principals. In the next chapter, these

findings will be examined to discuss: (1) the relevance of the study, (2) summary of major

findings, (3) interpretation of major findings, (4) limitations, and, (5) implications.

Relevance of the Study

Study findings provide preliminary information on Virginia elementary principals'

professional development needs and priorities as leaders, teacher evaluators, and student support

for students with autism. Because of the growing number of students with autism in public

schools, little information was known about the characteristics of elementary principals

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who support teachers of students with autism and the contextual factors influencing decisions to keep students with autism in comprehensive public schools. Further, the needs and priorities of principals did not vary by school location (e.g. city, suburban, rural, or town) nor by region. Data obtained from this study provides information on: (a) elementary principals' attitudes on leadership; (b) influential contextual factors impacting principals' decisions; (c) elementary principals' familiarity and priority for job-tasks related to supporting students with autism; and, (d) relationships between characteristics of elementary principals and principals' attitudes towards job tasks, professional development priorities, leadership, and contextual influences.

Summary of Major Findings

Following initial inspection of demographic descriptives and frequencies, exploratory factor analysis was conducted to structure data analysis for meaningful understanding. Five constructs were extracted and used for analysis which include: Leadership Attitudes Index, Influence Index, Management Index, Job Task Familiarity Index, and, Priority Index. Each of these constructs relates to need areas identified in the literature. One-way ANOVAs and response patterns were used to answer specific research questions.

Major findings include:

1. Elementary principals with 10-12 years of service in their current school had the highest leadership attitude score in relative comparison to those with the lowest leadership score, 13-15 years.

2. Elementary principals with less than one year and one-to-three years of service report relatively high leadership attitude scores.

3. Elementary principals' school location does not impact their decisions to request a different placement for a student with autism exhibiting challenging behavior.

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4. Elementary principals' report moderately to extremely familiar with day-to-day job tasks related to supporting students with autism; however, these tasks remain high to essential priorities for continued professional development.

5. Elementary principals are only slightly to moderately familiar with state principal evaluation standards.

6. Elementary principals are slightly familiar with evaluating teachers who support students with autism in their schools based on state teacher evaluation tools.

7. Professional development priorities are not different based on region in Virginia.

8. Elementary principals who currently have specialized autism programming report relatively lower job familiarity scores than other principals who may only have experience with students with autism.

9. The quantity of trainings received in autism and challenging behavior made no difference for how principals reported the familiarity with job tasks related to supporting these students.

Interpretation of Major Findings

Elementary principals' attitudes on leadership. One of the major findings of this research is that elementary principals reported positive leadership attitudes towards serving students with and without disabilities. Overall, principals indicated a mean score of 4.89, which is close to "very true of me" for the 11 leadership statements. These leadership statements were adapted from the *Professional Standards for Education Leaders (PSEL)* to reflect the leadership skills needed for large-scale change initiatives and focus on supporting students with autism and challenging behavior. Interestingly, 56% of principals reported *neutral* thoughts on the statement: *there are school driven resources allocated to support students, placed out of*

division, to return to their comprehensive public school. This was the only question that presented these results, which could provide evidence that principals might be open to more professional development on supporting students returning to their schools. The expansion of regional programming for students with autism exhibiting challenging behavior in the state presents a need to develop and implement a program to include school leaders is imperative to the success of students staying within their comprehensive public schools.

Collectively, these leadership items created a construct called the Leadership Attitude Index. The index was created to examine differences between principals' school location and length of service in current school. These group differences are reported in the literature as challenges for most states on implementing sophisticated principal support and professional development plans (Riley & Meredith, 2017). In particular, districts and states have varying contexts, such as demographics, size, performance, or urbanicity. To investigate this, principals were asked to report the location of their school: 42.2% were located in rural areas, 18.6% located in suburban areas, 29.2% located in city areas, and, 10% located in town areas.

There is national research to support that principals want to coordinate school improvement efforts to their own development (Riley & Meredith, 2017). With 57% principals reporting reading and math achievement as the schools' core initiative, the critical next step is to establish professional development in leadership with a focus on school improvement efforts. While no statistically significant findings resulted, there were minor differences in the mean Leadership Attitude Score. For schools located in a city, principals reported a mean score of 4.41, which is reflective of a score between "somewhat true of me" and "very true of me." Next, rural principals indicated a mean score of 4.48; suburban principals, 4.51; and, town, principals 4.51. Data reveals that those in city locations may be faced with different contextual situations;

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however, the relative mean difference is small and further assumptions cannot be drawn. The preliminary evidence provides information that, despite varying school locations, principals have similar leadership attitudes.

Following the examination of school location, principals were classified into seven groups by length of service in current school: less than 1 year ($n = 51$), 1-3 years ($n = 114$), 4-6 years ($n = 71$), 7-9 years ($n = 33$), 10-12 years ($n=11$), 13-15 years ($n=11$), and 16 years or more ($n=10$). From the literature, principals are leaving within their first three years of service in a school, and receiving minimal support as of their second year in the school (Rowland, 2017). The majority of principals who responded to this survey were principals with 1-3 years of experience in their current school. The data revealed statistical significance between these principal groups, $F(6, 294) = 2.894$, $p < .009$. Those principals who had 13-15 years of service reported relatively lower than their counterparts with 1-3 years of experience and 10-12 years of experience. It seems evident that principals with less experience in their schools could be reporting higher for several reasons which were not identified in the scope of this survey. For instance, this group could be receiving mentoring, which is why the principal with 13-15 years may not report as high of scores.

From a global perspective, the need for principal support and professional development for both novice and veteran principals remains an important priority. Rowland (2017) indicated that most principals leave low-performing schools within the first three years, and the strongest principals are not usually placed in these positions. Many early career principals use low-performing schools as stepping stones for entry into higher performing schools with high quality personnel. Further, Riley and Meredith (2017) reported that principal mentoring/coaching, professional development of early career principals, professional development of veteran

principals, and developing principals of low-performing or hard-to-serve schools is a top priority

for many states across the nation. Moreover, alignment between state and national licensure,

certification, and evaluation is needed to address entry, placement, and retention in the

principalship. Thus, the transition from school-based professional to the principalship requires

further study, as well as the future transition to other educational leadership positions (Spillane &

Anderson, 2014).

   Influential factors contributing to outside placement requests. The next major finding

from this study is that all principals, regardless of school location, report the same contextual

situations as influential in requesting an outside placement for students with autism exhibiting

challenging behavior. Of the 301 principals, 75% indicated that seven of the contextual

situations were somewhat influential in their decision making. The mean score for these 7

questions was 2.90. Based on the factor analysis, the four questions on hiring and retaining

skilled professionals and paraprofessionals established its own construct, Management index.

Sixty-four (21.3%) principals indicated that hiring and retaining skill was extremely influential

(score of 5 on Likert scale); 56 principals (18.6) reported a score of four, or very influential.

There is national data that suggests principal effectiveness is associated with retaining high

quality teachers in disadvantaged schools with hard-to-serve populations (Herman et al., 2016).

   Further analyses investigated differences in influence and management indexes across

characteristic of principals, such as region in Virginia, school location, type of autism

programming in school, and length of service in current building. There were no significant

differences between these principal characteristics. Yet, this data informs the state on common

barriers experienced in supporting students with autism. *Hiring and retaining skilled*

professionals was reported as the most influential contextual situation. Similar to the

principalship, Virginia is not alone in addressing the special education teacher shortages by providing alternative pathways to become a teacher, as well as changes in certification and licensure. Underprepared special education teachers struggle to close achievement gaps, manage challenging behaviors, and use proactive strategies for supporting students with disabilities. The nation is producing more teachers than the market needs; yet, specific content areas (e.g. special education), and specific school characteristics (e.g. low-performing schools), are more likely to see the more teacher shortages (Aragon, 2016; NCES, 2016). The nation's teacher preparation enrollment is on a decreasing trend, especially in certain content areas. In December 2017, Governor McAuliffe signed an executive directive to address Virginia's teacher shortage. The executive directive included: (a) new funding to automate the teacher licensure process; (b) new funding to support the recruitment and retention of principals in Virginia's most challenged school divisions, (c) an increase in tuition assistance, (d) new funding to assist with the cost of tests and test-preparation for provisionally licensed minority students, and, (e) revised budget language to improve the Virginia loan program for teacher scholarships (Executive Order, 2017). Aligning local initiatives to state initiatives to address the teacher shortage and principal professional development is critical.

Looking individually at questions, the time commitment of staff to manage a student with challenging behavior and the disruption to other students' learning were very influential contextual situations for principals. Thirty-five percent of principals reported either "very influential" or "extremely influential" for the situation of one student's challenging behavior disrupting the rest of student's instruction. Thirty-nine percent of principals indicated either "very influential" or "extremely influential" for the time commitment of staff to maintain the student with challenging behavior. With preliminary information on the barriers to keeping

students with autism in public school, there is a need for more partnership between universities and administrator associations to align statewide supports to address these critical need areas (Riley & Meredith, 2017). For instance, university partners can design and implement projects to evaluate the essential components of professional development that aligns to priorities within administrator associations. Currently, the Virginia Association for Secondary Principals requested a needs assessment to identify conference topics and presenters. Barriers to keeping students, with disabilities and challenging behavior, in public schools, is a local, state, and national concern.

Elementary Principals' Professional Development Needs and Priorities

Job-task familiarity. Rowland (2017) reported that current and future principals see the complexity of the position consisting of multiple responsibilities. Moreover, few principals engage in instructional and evaluative leadership activities. Administrative tasks require a bulk of principals' time; yet, some principals may need professional development on day-to-day tasks as well. The third section of the survey investigated specific job tasks that principals may encounter in serving students with autism and challenging behavior. Additionally, the principals were asked the level of priority (not a priority to essential priority) to receive professional development on those specific job tasks.

Originally, it was hypothesized that principals who felt extremely familiar with a job task (e.g. determining disciplinary actions) would rate it as a low priority for professional development. The data revealed a moderate positive correlation between familiarity with job tasks and the corresponding priority for those job tasks. This finding suggests that familiarity with job tasks does not lessen the need for professional development in that area. It is often difficult to assess professional development outcomes and knowledge of certain practices, as

many schools address several initiatives at once. Further, the word "familiar" was a blunt descriptor that could mean just want it says, familiar with job tasks but not implementing effectively. Additionally, professional development needs to be carefully planned to address the needs of the environment, the learners, and the learning occurring under those conditions (Guskey, 2009). We know that the 27 EBPs and fidelity of implementation are overwhelming and not sufficient to address systemic issues of student achievement and keeping at-risk students with disabilities in public schools.

The next hypothesis was that the longer a principal has been on-the-job, the higher familiarity with day-to-day job tasks supporting students with autism. There was statistical significance between length of service with current school and job familiarity score. In particular, elementary principals with 13-15 years of service reported relatively lower than counterparts with less than a year to three years of experience. Principals with 13-15 years of service as a principal could be experiencing burnout or could be experiencing difficulties with changes in expectations, evaluation, and higher demands to institute evidence-based practices (Combs, Edmondson, & Jackson, 2009; Davis, Gooden, & Bowers, 2017). There is limited research on school principal burnout to draw further conclusions. Some literature suggests that the career pathway to the principalship plays a critical role in the length of service, turnover, and retention (Davis, Gooden, & Bowers, 2017). Principals with 7-9 and 10-12 years of service reported a relatively high job-familiarity score. In most cases, first-time principals are native to the school district. In one state, it was found that the length of experience in education did not make a difference in regards to burnout, nor did years of service in one school building as a principal (Bastian & Henry, 2015). Overall, data revealed that familiarity with job-tasks does not negate a lower priority for professional development. Given the evolving field of education, it

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will always be necessary to provide ongoing professional development to early career principals, as well as veteran principals regardless of preparation and prior training.

Another hypothesis was that elementary principals who currently have specialized autism programming in their schools would report higher job familiarity than their counterparts with limited programming or experience. However, elementary principals with specialized autism programming reported relatively lower job familiarity scores than their colleagues. Further explanation of this finding is needed. It would be interesting to know if principals with specialized programming have more resources or access to trained professionals. On one hand, trained personnel could be dedicated to the specialized programming which requires less principal involvement. On the other hand, elementary principals could be working with students with extensive behavioral needs that challenges familiarity with specific job tasks.

Professional development priority score. Moreover, it was hypothesized that principal's with more experience in their schools would identify lower priorities for day-to-day tasks related to autism and challenging behavior. A statistically significant relationship was found between principals' length of service and their priorities for professional development. Elementary principals with 16 or more years of service in their school reported the highest mean priority score for professional development (M=4.09). Principals with 10-15 years of service in their school reported the lowest priority score (M=3.5). Whereas principals with less than 1 year to 3 years reported the second lowest priority mean score (M=3.80). Rowland (2017) indicated that between 5-7 years is when principals become fluent in their job tasks and role. Yet, the data revealed that they had the next highest priority score following principals with 16 or more years of experience. Given the complexity of serving the rising number of students with autism, it could be impacting all principals in different ways, depending on many factors not captured in

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this survey. Data from this study lends support to establishing strong professional development mechanisms for preservice, novice, and veteran principals.

      Preferences for professional development. In addition to examining specific principal characteristics, the preferences for receiving new information (e.g. knowledge) and professional development formats were collected. Overwhelmingly, 71.2% of principals indicated that email was the best mode of communicating new information outside of structured professional development; 27% principals preferred a face-to-face meeting, including principal's meetings; and 6% of principals reported video conferencing as a preferred mode. It seems important that a structured mechanism for knowledge dissemination be established to promote leadership, implementation, and school improvement based on identified needs.

      When asked the highest preference for professional development formats, over 60% of principals preferred an ongoing professional development format (e.g. professional learning community, leadership academies, and individualized job embedded coaching). The information aligns quite well to previous literature that indicates principals accurately self-report their needs for professional development. Only 34% of principals wanted a one-time workshop or conference. Currently, local professional organizations provide yearly conferences and dissemination of legal updates. Working collaboratively with the local principal organizations and national principal organizations will be critical to streamline efforts for impactful development. Prior to instituting professional development models, the development of evaluation measures for the training itself and principal outcomes will be necessary to build a research base for these evidence-based practices instituted with other professionals.

      Finally, the number of trainings completed in the previous school year (2016-2017) was collected. Data revealed that elementary principals who received no trainings on autism reported

similar scores to those who had attended five or more trainings on autism. This same finding was true for trainings on challenging behavior. The quantity of trainings and access to specific coursework on autism has not indicated different results in previous literature. The quality of these trainings and type of trainings attended was not collected within the scope of this survey. However, the quality of training received could be measured as a part of a professional development model.

Elementary Principals' Familiarity with Best Practice Tools, Evaluation and Guidelines

Insight into elementary principals' familiarity with best practices with teachers, students, and principal evaluation, can also can be found in the demographic survey results. Using a Likert scale, principals rated their familiarity with each practice, tool, or guideline from 1 (not at all familiar) to 5 (extremely familiar). The familiarity with these items is important for understanding professional development needs surrounding these standard practices. More principals reported being not at all familiar with how to evaluate teachers of students with autism than familiarity with evidence-based practices. The teacher evaluation tool designed for all teachers and the teacher evaluation tools customized for students with autism rely heavily on knowledge of best practices. Riley & Meredith (2017) found that two-third of principals across the nation wanted more professional development on providing feedback and developing teachers that serve all students. Therefore, this need area is not unique to teachers of students with autism.

McCarthy and colleagues (2016) indicated that many states have adopted professional standards for principals, but are not fully implementing these standards. In 2013, Virginia began implementation of the *Guidelines for Uniform Performance Standards and Evaluation Criteria for Principals*. Further, Riley & Meredith (2017) indicated that revising and editing these

standards and measuring the evaluation system is not a priority for most states. Yet, Virginia elementary principals are only moderately familiar (29.8%) with these state standards and evaluation criteria. Beyond self-report, the mean score of familiarity with best practice tools, evaluation and guidelines was predictive of the leadership attitude score. This could potentially be a measure used for evaluating self-assessment on professional development initiatives. For instance, professional developers use self-assessments to measure pre and post on how well the trainees think they know how to do a task. Increasing principals' knowledge and familiarity with using best practice tools for evaluation could increase leadership attitudes, and implementation of best practices as a leader.

Limitations

Results are limited to the survey approach used to understand and interpret the professional development needs of elementary school principals in Virginia. When using self-report measures, there is always the chance for over- or under-representation of self-reported attitudes or skills. Further, these findings are limited to elementary principals and principals in Virginia. The literature provides evidence that Virginia's needs are not different from other states. Yet, the theoretical underpinnings of a consistent conceptual framework for understanding principal development remains limited. The scope of this survey developed some constructs for analysis, but these constructs were specific to autism and challenging behavior. These constructs incorporated ideas from each conceptual framework; however, these survey results did not yield evidence to advance either conceptual framework related to principal professional development.

Recruitment of all elementary principals in Virginia was impacted by individual schools internal research review processes and policies. Therefore, some districts within the state were excluded from the study. Two-hundred and seventy four principals were not able to participate.

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Three school districts, who required additional internal research approval, accepted the research proposal. These districts research committees notified the principals of the approval. Even though participation remained voluntary, it is unknown how the support of the school district research committee could have impacted representation of principals in specific regions. Region 8 was unique in that some principals served more than one school, so these principals were only contacted one time, which could have impacted the representation of this area.

Next, this survey measured self-report leadership attitudes, influential contextual factors, and job task familiarity. There is not a measure of actual knowledge, implementation or adoption of these attitudes or tasks in practice. For instance, it is not clear why principals with specialized autism programming report lower job task familiarity scores than counterparts who do not serve these students currently, but have experience. This raises a question in light of these findings, indicating that principals who have more access to these students report less familiarity. A focused professional development model for principals serving specialized autism programs is necessary to evaluate the knowledge, the attitudes, and implementation of specific tasks as a key stakeholder.

Finally, the design of this survey instrument did not include the collection of information on quality of trainings received in leadership and management. Specifically, the format of professional development received could have provided more information on what's working and what's not working on building professional capacity in principals. The number of contextual situations limited the ability of principals to include other key factors that influence their daily decisions in supporting students with autism. Further, there may be other characteristics of the districts that was not taken into account which could have provided evidence that school location does play a more significant role in the factors influencing

principals to make certain decisions. In collaboration with the VDOE and Wallace Foundation, further research is needed to assess school leadership impact on students with disabilities via an action group or task force.

Implications

Results from the study provide preliminary information to impact practice, policy, and research in Virginia. Overall, elementary principals are reporting that professional development is needed for job-specific tasks, and that familiarity with these tasks does not negate priority. Further, elementary principals indicate professional learning communities, leadership academies, and embedded job coaching are the highest preference for professional development. Building upon the findings of this research, each implication area is described next.

Practice-based implications. Findings from this study have implications for the continuum of principal development and leadership practice. Novice and veteran elementary principals need tiered professional development to meet their changing needs. For instance, the three tiers would include: (a) universal strategies, (b) targeted strategies, and, (c) individual strategies. A triangle can be used to envision the tiered model. At the bottom of the triangle is universal professional development strategies. Universal strategies are for all principals to access such as fact sheets, webinars, online courses, or other forms of self-paced professional development. The middle tier, or targeted strategies, are activities such as professional learning communities or expert-facilitated online courses with a hybrid option. The top of the triangle, or top tier is individual supports, which can include job-embedded coaching or individualized school support.

Many principals have the same core initiative (e.g. reading and math achievement) which is related to the state's focus on school improvement and closing achievement gaps for

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disadvantaged students. Alongside university and professional association partnerships, a tiered

professional development model addresses the needs of novice and veteran principals. In

creating this tiered professional development model, several evaluation measures need to be

established that align to the state evaluation guidelines for principals. As part of the tiered

professional development model, online dissemination of information via webinars and briefs

should be considered given this is the preferred mode of information dissemination. Some of

these evaluation measures should include: pre and post knowledge tests on specific topics; pre

and post self-assessment on leadership skills; and, fidelity checklist to measure implementation

progress. Given a more intensive approach to supporting principals, the principals' supervisors

will need to be active in this process as well.

Policy-based implications. This study found that elementary principals want to

participate in ongoing, rigorous professional development to refine skills. In 2016, Virginia State

University was identified as one of the partner universities with Wallace Foundation to prepare a

principal pipeline to three districts in Region 1 in Virginia. In 2006, University of Virginia

partnered with Harvard University and Wallace Foundation to put together an executive

administration summer institute. In addition to principal pipelines, the state needs to align

university efforts to train teachers and paraprofessionals. The VDOE invested in university-based

center for excellence to develop a mandatory training for all paraprofessionals who work with

students who have autism (HB-325). Evaluating this training and determining next steps for

paraprofessionals as well as the supervising teacher will be critical. Hiring and retaining skilled

professionals was the most influential contextual factor for principals requesting a different

placement.

The research posits that school leadership activities positively influence teachers, students, and school improvement efforts (RAND, 2016). How does the state of Virginia leverage available funding through the use of Title II, Part A ESSA funds to strengthen principal professional development at a larger scale? The U.S. Department of Education (2016) recommends the use of Title II, Part A, ESSA funds for school leadership activities including: (a) leadership training and opportunities for principals to hone their craft, (b) community of learning opportunities where principals can fully engage with their school teams, and, (c) develop opportunities for principals to collaborate and share best practices. The National Association for Elementary School Principals and other national organizations advocated for the preservation of Title II ESSA funding in the Omnibus Bill for fiscal year 2018. These funds are the only federal funding source for preparation and professional development of teachers and principals.

Title II, Part A, funds could be considered for the role of leaders in school improvement plans. In addition to looking for funding mechanisms to support change in principal development opportunities, a state task force that collaborates with Wallace Foundation and Virginia Commonwealth University may be needed to obtain further data and support for tackling the current initiatives occurring throughout the state. The task force needs to include Virginia licensure board personnel for school leadership to ensure continuing education activities mirror changes in policy. For instance, a challenging behavior leadership academy was established in January 2018 through partnership with the VDOE.

Research-based implications. With preliminary information collected, the next step would be to consider testing a tiered professional development model against specific outcomes. Given the initiative of regional programming for students with autism in different regions of the state, the principals participating in regional programming could participate in a focused

professional learning community with trained experts who would be onsite supporting their students and teachers. The literature needs more information on successful components for principal professional development, retention, and turnover. The information obtained from focused technical assistance work could provide the VDOE and state evidence to link school leadership needs to school improvement work. State leaders should collaborate with the Wallace Foundation and other states who are implementing different components of school leadership initiatives.

Conclusion

Many elementary school principals continue to leave the hard-to-serve schools and hard-to-service students within the first three years on the job. Principal leadership is the second most influential factor to student and teacher success (Riley & Meredith, 2017; Rowland, 2017). Few principals receive the mentoring, ongoing support, or supervision that directly relates to the complexities of the job. Clearly, principals play a vital role in increasing student achievement (Rowland 2017). Research has shown that principals have limited to no access to professional development that would remedy challenges (School Leaders Network, 2014). Principals who do not receive this job-specific development are 1.4 more times likely to exit the field, than their counterparts who receive advanced professional development (NCES, 2013). In Virginia, students with autism continue to place urgent demands on school systems for the implementation of evidence-based practices. There is significant litigation surrounding serving students with autism; most litigation, attributed to inadequate principal preparation in special education law and services (Peazey & Cole, 2013).

Elementary school principals have much to offer all their students, with no exception to students with autism exhibiting challenging behavior. Strengthening their expertise in leadership

and teacher evaluation, as well as teacher support, will directly benefit all students. Data generated from this study reveal that principals report familiarity with skills needed to support teachers and students impacted by autism, but professional development is greatly needed. In addition, principals are influenced by several contextual factors when making placement requests for students. The collaboration of various partners to tackle these contextual factors will be necessary, if the goal is to keep students with autism and challenging behavior in their comprehensive public schools. The key contextual issue is the hiring and retaining of skilled professionals in special education teaching positions. Without skilled professionals, school principals are limited to focusing efforts on student discipline and teacher performance improvement plans.

The need for ongoing principal professional development is not a new phenomenon (DiPaola & Walther-Thomas, 2003; Lynch, 2012; Searby, 2010). Elementary school principals play a critical role in the participation of students with autism in public schools. The number of students with challenging behavior, not just autism, continues to impact school improvement initiatives, teacher retention, and student achievement. Interagency collaboration is vital to the success of a tiered approach to developing novice and veteran principals to serve various students. Consideration must be given to principal entry, placement, retention, and burnout in relation to state certification and licensure standards, as well as national agendas. There continues to be limited research on the critical issues, which could jeopardize scaled school improvement work.

References

Aarons, G. A., Hurlburt, M., & Horwitz, S. M. (2011). Advancing a conceptual model of evidence-based practice implementation in public service sectors. *Administration and Policy in Mental Health and Mental Health Services Research*, *38*(1), 4-23.

American Educational Research Association. (2006). Standards for reporting on empirical social science research in AERA publications. *Educational Researcher, 35*(6), 33-40.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders*: *DSM-V*. Arlington, VA: Author.

Angelle, P., & Bilton, L. (2009). Confronting the unknown: Principal preparation training in issues related to special education. *AASA Journal of Scholarship and Practice, 5*(4), 5-9.

Antonak, R., & Livneh, H. (2000). Measurement of attitudes towards persons with disabilities. *Disability and Rehabilitation*, *22*(5), 211-224.

Aragon, S. (2016). Teacher shortages: What we know. Teacher Shortage Series. *Education Commission of the States*, 1-12.

Baio, J., Wiggins, L., Christensen, D .L.,……Braun, N., & Dowling, N. (2014). Prevalence of autism spectrum disorder among children aged 8 years – Autism and development disabilities monitoring network. *Center for Disease Control Morbidity and Mortality Weekly Report Surveillance Summary (2018), 67*(SS-6), 1-23.

Ball, K., & Green, R. L. (2014). An investigation of the attitudes of school leaders toward the inclusion of students with disabilities in the general education setting. *Applied Educational Research Journal, 27*(1/2), 57-76.

Bandura, A. (1977). *Social learning theory.* Englewood Cliffs, NJ: Prentice Hall.

Bastian, K. C., & Henry, G. T. (2015). The apprentice: Pathways to the principalship and student achievement. *Educational Administration Quarterly*, *51*(4), 600-639.

Beavers, A. S., Lounsbury, J. W., Richards, J. K., Huck, S. W., Skolits, G. J., & Esquivel, S. L. (2013). Practical considerations for using exploratory factor analysis in educational research. *Practical Assessment, Research & Evaluation*, *18*.

Beidas, R., Koener, K., Weingardt, K., & Kendall, P. C. (2011). Training research: Practical recommendations for maximum impact. *Administration & Policy in Mental Health & Mental Health Services Research, 38*(4)*,* 223-237.

Beteille, T., Kalogrides, D., & Loeb, S. (2011). Stepping stones: Principal career paths and school outcomes. *Social Science Research, 41*(4), 904-919.

Billingsley, B. (2011). Factors influencing special education teacher quality and effectiveness. In J. M. Kauffman & D. P. Hallahan (Eds.), *Handbook of special education* (pp. 391-405). New York, NY: Taylor & Francis.

Boyle, C. A., Boulet, S., Schieve, L. A., Cohen, R. A., Blumberg, S. J., Yeargin-Allsopp, M., ... & Kogan, M. D. (2011). Trends in the prevalence of developmental disabilities in US children, 1997–2008. *Pediatrics*, *127*(6), 1034-1042.

Brantlinger, E., Jimenez, R., Klinger, J., Pugach, M., & Richardson, V. (2005). Qualitative studies in special education. *Exceptional Children, 71*(2), 195-207.

Brock, M., Huber, H., Carter, E., Juarez, A., & Warren, Z. (2014). Statewide assessment of professional development needs related to educating students with autism spectrum disorder. *Focus on Autism and Other Developmental Disabilities, 29*(2), 67-79.

Buescher, A. V., Cidav, Z., Knapp, M., & Mandell, D. S. (2014). Costs of autism spectrum disorders in the United Kingdom and the United States. *Journal of American Medical Association Pediatrics*, *168*(8), 721-728.

Burdette, P. (2010). *Principal preparedness to support students with disabilities and other diverse learners*. Alexandria, VA: National Association of State Directors of Special Education.

Callahan, K., Henson, R. K., & Cowan, A. K. (2008). Social validation of evidence-based practices in autism by parents, teachers, and administrators. *Journal of Autism and Developmental Disorders, 38*(4), 678-692.

Carter, E. W., Common, E. A., Sreckovic, M. A., Huber, H. B., Bottema-Beutel, K., Gustafson, J. R., ... & Hume, K. (2013). Promoting social competence and peer relationships for adolescents with autism spectrum disorders. *Remedial and Special Education, 35*(2), 91-101.

Centers for Disease Control and Prevention. (2012). Prevalence of autism spectrum disorders—Autism and developmental disabilities monitoring network, United States. *Morbidity and Mortality Weekly Report, 61*(4), 1-19. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6302a1.htm?scid=ss6302a1_w.

Chestnut, C., Fernandez, E., Decker, J. R., Russo, C., & Eckes, S. E. (2013). *Current issues in special education law for school leaders*. Indianapolis, IN: University Council for Educational Administration.

Clifford, M., & Mason, C. (2013). *Leadership for the common core: More than one thousand school principals respond*. Alexandria, VA: National Association of Elementary School Principals. Retrieved from https://naesp.org/sites/default/files/LeadershipfortheCommonCore_0.pdf

Coggshall, J. (2015). *Title II, part A: Don't scrap it, don't dilute it, fix it*. Washington, DC: American Institute for Research. Retrieved from http://educationpolicy.air.org/publications/title-ii-part-dont-scrap-it-dont-dilute-it-fix-it

Cohen, J. (1992). Statistical power analysis. *Current Directions in Psychological Science*, *1*(3), 98-101.

Combs, J., Edmonson, S. L., Jackson, S. H., & Greenville, N. C. (2009). Burnout among elementary school principals. *American Association of School Administrators (AASA) Journal of Scholarship and Practice*, *5*(4), 10-15.

Cook, B., & Odom, S. (2013). Evidence-based practices and implementation science in special education. *Exceptional Children, 79*(2), 135-144.

Cook, B., Smith, G., & Tankersley, M. (2012). Evidence-based practices in education. In K. R. Harris, S. Graham, & T. Urban (Eds.), *APA educational psychology handbook* (pp. 495-528). Washington, DC: American Psychological Association.

Cook, B. G., Tankersley, M., Cook, L., & Landrum, T. J. (2008). Evidence-based practices in special education: Some practical considerations. *Intervention in School and Clinic, 44*(2), 69-75.

Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation*, *10*(7), 1-9.

Dillman, D., Smyth, J., & Christian, L. (2015). *Internet, phone, mail, and mixed-mode surveys: The tailored design method*. Hoboken, NJ: John Wiley & Sons, Inc.

DiPaola, M. F., & Walther-Thomas, C. (2003). *Principals and special education: The critical role of school leaders*. Arlington, VA: National Clearinghouse for Professions in Special Education.

Dou, D., Devos, G., & Valcke, M. (2016). The effects of autonomy gap in personnel policy, principal leadership and teachers' self-efficacy on their organizational commitment. *Asia Pacific Education Review*, *17*(2), 339-353.

Eccles, M. P., & Mittman, B. S. (2006). Welcome to implementation science. *Implementation Science, 1*(1), 103.

Ernsberger, L. (2002). *Keys to success for teaching students with autism.* Arlington, TX: Future Horizons.

Every Student Succeeds Act (ESSA), Pub. L. No 114-95, § 114, Stat. 1177 (2015).

Exec. Order No. 14, 3 C.F.R. 1 (2017). Budget actions to address Virginia's teacher shortage.

Fixsen, D., Blasé, J., Horner, R., & Sugai, G. (2009). *Developing the capacity for scaling up the effective use of evidence-based programs in state departments of education*. Chapel Hill, NC: State Implementation of Scaling-up Evidence-based Practices (SISEP) Center.

Fixsen, D., Blase, K., Metz, A., & Van Dyke, M. (2013). Statewide implementation of evidence-based programs. *Exceptional Children*, *79*(2), 213-230.

Fixsen, D. L., Naoom, S. F, Blasé, K. A., Friedman R. M., & Wallace, F. (2005). *Implementation research: A synthesis of literature* (FMHI Publication #231). Tampa, FL: The National Implementation Research Network.

Fogarty International Center, National Institutes of Health. (2010). *Frequently asked questions about implementation science.* Retrieved from http://www.fic.nih.gov/News/Events/implementation-science/Pages/faqs.aspq

Forman, S. G., Shapiro, E. S., Codding, R. S., Gonzales, J. E., Reddy, L. A., Rosenfield, S. A.,…& Stoiber, K. C. (2013). Implementation science and school psychology. *School Psychology Quarterly*, *28*(2), 77-100.

Ghate, D. (2016). From programs to systems: Deploying implementation science and practice for sustained real world effectiveness in services for children and families. *Journal of Clinical Child & Adolescent Psychology*, *45*(6), 812-826.

Glasman, N. S. (1984). Student achievement and the school principal. *Educational Evaluation and Policy Analysis*, *6*(3), 283-296.

Glisson, C. (2002). The organization context of children's mental health services. *Clinical Child and Family Psychology Review, 5*(4), 233-253.

Grissom, J.A., & Harrington, J. R. (2010). Investing in administrator efficacy: An examination of professional development as a tool for enhancing principal effectiveness. *American Journal of Education, 116*(4), 583-612.

Hamnerness, K., Darling-Hammond, L., & Bransford, J. (2005). How teachers learn and develop. In L. Darling-Hammond & J. Bransford (Eds), *Preparing teachers for a changing world* (pp. 358-389). San Francisco, CA: Jossey Bass.

Hanleybrown, F., Kania, J., & Kramer, M. (2012). Channeling change: Making collective impact work. *Stanford Innovation and Review*, 1-9.

Hendricks, D. R., & Wehman, P. (2009). Transition from school to adulthood for youth with autism spectrum disorders: Review and recommendations. *Focus on Autism and Other Developmental Disabilities, 24*(2), 1-9.

Hill, D. A., & Kearley, R. (2013). Autism litigation: Outcomes for 2010, trends in decision making and changes in diagnostic criteria. *Research in Developmental Disabilities, 34(5), 1843-1848.*

Honig, M. I., & Coburn, C. (2008). Evidence-based decision making in school district central offices: Toward a policy and research agenda. *Educational Policy*, *22*(4), 578-608.

Hoppey, D., & McLeskey, K. (2013). A case study of principal leadership of an effective inclusive school. *The Journal of Special Education, 46*(4), 245-256.

Horrocks, J., White, G., & Roberts, L. (2008). Principals' attitudes regarding inclusion of children with autism in Pennsylvania public schools. *Journal of Autism and Developmental Disorders, 38*(8), 1462-1473.

Individuals with Disabilities Education Act (IDEA), 20 U.S.C. § 1400 (2004).

Ingersoll, R. M., & Smith, T. M. (2003). The wrong solution to the teacher shortage. *Educational Leadership*, *60*(8), 30-33.

Iovannone, R., Dunlap, G., Huber, H., & Kincaid, D. (2003). Effective educational practices for students with autism spectrum disorders. *Focus on Autism and Other Developmental Disabilities*, *18*(3), 150-165.

Jacob, R. T. & Jacob, B. (2012). Prenotification, incentives, and survey modality: An experimental test of methods to increase survey response rates of school principals. *Journal of Research on Educational Effectiveness, 5*(4), 401-418.

Johnston, W., Kaufman, J., & Thompson, L. (2016). *Support for instructional leadership, supervision, mentoring, and professional development for U.S. school leaders: Findings from the American school leader panel* (Research Report No. RR-1580-1-WF). Retrieved from http://www.wallacefoundation.org/knowledge-center/Pages/Support-for-Instructional-Leadership.aspx

Joint Legislative Audit and Review Commission of the Virginia General Assembly (JLARC). (2009). *Assessment of Virginians with autism spectrum disorders*. Richmond, VA: Author.

Kania, J., & Kramer, M. (2011). Collective impact. *Stanford Social Innovation Review, 9*(1), 36-41.

Kania, J., & Kramer, M. (2013, January 21). Embracing emergence: How collective impact addresses complexity [Web blog post]. Retrieved from https://ssir.org/articles/entry/embracing_emergence_how_collective_impact_addresses_complexity

Klingner, J. K., Boardman, A. G., & McMaster, K. L. (2013). What does it take to scale up and sustain evidence-based practices? *Exceptional Children*, *79*(2), 195-211.

Kurth, J. A., & Mastergeorge, A. M. (2010). Academic and cognitive profiles of students with autism: Implications for classroom practice and placement. *International Journal of Special Education, 25*(2), 8-14.

Ladd, H. F. (2009). Teachers' perceptions of their working conditions: How predictive of policy-relevant outcomes. *Educational Evaluation and Policy Analysis, 33*(2), 235-261.

Lasky, B., & Karge, B. (2006). Meeting the needs of students with disabilities: Experience and confidence of principals. *National Association of Secondary School Principals Bulletin, 90*(1), 19-36.

Learning Forward (2011). Definition of professional development. Learning Forward: The professional learning association. Retrieved from, www.learningforward.org/standfor/definition.cfm

Leithwood, K., & Jantzi, D. (2006). Transformational school leadership for large-scale reform: Effects on students, teachers and their classroom practices. *School Effectiveness and School Improvement, 17*(2), 201-227.

Leithwood, K., Louis, K., Anderson, S., & Wahlstrom, K. (2004). *How leadership influences student learning: A review of research for the Learning and Leadership Project*. New York, NY: The Wallace Foundation.

Levin, B. (2010). Leadership for evidence-informed education. *School Leadership and Management*, *30*(4), 303-315.

Liu, X. S., & Meyer, J. P. (2005). Teachers' perceptions of their jobs: A multilevel analysis of the teacher follow-up survey for 1994-95. *Teachers College Record*, *107*(5), 985-1003.

Locke, J., Beidas, R. S., Marcus, S., Stahmer, A., Aarons, G. A., Lyon, A. R., ... & Mandell, D. S. (2016). A mixed methods study of individual and organizational factors that affect implementation of interventions for children with autism in public schools. *Implementation Science*, *11*(1), 135.

Loiacono, V., & Palumbo, A. (2011). Principals who understand applied behavior analysis perceive they are better able to support educators who teach students with autism. *International Journal of Special Education*, *26*(3), 212-222.

Lynch, J. M. (2012). Responsibilities of today's principal: Implications for principal preparation programs and principal certification policies. *Rural Special Education Quarterly*, *31*(2), 40-47.

Manna, P. (2015). *Developing excellent school principals to advance teaching and learning: Considerations for state policy*. New York, NY: The Wallace Foundation. Retrieved from http://www.wallacefoundation.org/knowledge-center/Pages/Developing-Excellent-School-Principals.aspx

McCarthy, M., Shelton, S., & Murphy, J. (2016). Policy penetration of the ISLLC standards. *Leadership and Policy in Schools*, *15*(2), 221-230.

McHatton, P., Boyer, N., Shaunessy, E., & Terry, P. (2010). Principals' perceptions of preparation and practice in gifted and special education content: Are we doing enough? *Journal of Research on Leadership Education, 5*(1), 1-22.

Mills, B. (1974). *A survey of the elementary school principalship in West Virginia* (Unpublished doctoral dissertation). West Virginia University, Morgantown, WV.

Morrier, M. J., Hess, K. L., & Heflin, L. J. (2011). Teacher preparation for implementation of teaching strategies for students with autism spectrum disorders. *Teacher Education and Special Education, 34*(2), 119-132.

Nanus, B. (1992). *Visionary leadership: Creating a compelling sense of direction for your organization*. San Francisco, CA: Jossey-Bass.

National Center for Educational Statistics. (2008, March 25). *Digest of education statistics, 2007 schools and staffing survey* (NCES Number: 2008022). Washington, DC: Author.

National Center for Educational Statistics, Institute of Education Sciences. (2013). *Schools and Staffing Survey (SASS)*. Washington, DC: U.S. Department of Education.

National Center for Education Statistics. (2016, May). *Projections of education statistics to 2022* Washington, DC: U.S. Department of Education, 1-2.

National Professional Development Center on Autism Spectrum Disorders. (n.d.). *Evidence-based practices*. Retrieved from http://autismpdc.fpg.unc.edu/content/evidence-based-practices

New Leaders. (2016). *Prioritizing leadership: Opportunities in ESSA for chief state school offices*. Retrieved from http://newleaders.org/research-policy/prioritizing-leadership-opportunities-essa-chief-state-school-officers

No Child Left Behind (NCLB), Pub. L. No. 107-110, § 115 Stat. 1425 (2002).

Odom, S. L. (2009). The tie that binds evidence-based practice, implementation science, and outcomes for children. *Topics in Early Childhood Special Education*, *29*(1), 53-61.

Odom, S., Brantlinger, E., Gersten, R., Horner, R., Thompson, B., & Harris, K. (2005). Research in special education: Scientific methods and evidence-based practices. *Exceptional Children, 71*(2), 137-148.

Odom, S., Cox, A., Brock, M. (2013). Implementation science, professional development, and autism spectrum disorders. *Exceptional Children, 79*(2), 233-251.

Pazey, B. L., & Cole, H. A. (2013). The role of special education preparation in the development of socially just leaders building an equity consciousness in educational leadership programs. *Educational Administration Quarterly*, *49*(2), 243-271.

Portin, B. (2004). The roles that principals play. *Educational Leadership, 61*(7), 14-18.

Praisner, C. (2003). Attitudes of elementary school principals toward the inclusion of students with disabilities. *Exceptional Children, 69*(2), 135-145.

Rabin, B., & Brownson, R. (2012). Developing the terminology for dissemination and implementation research. In R. C. Brownson, G. A. Colditz, & E. K. Proctor (Eds.), *Dissemination and implementation research in health* (pp. 23-51). New York, NY. Oxford University Press.

Raffel, K. K., Lee, M. Y., Dougherty, C. V., & Greene, G. J. (2013). Making it work: Administrator views on sustaining evidence-based mental health interventions. *Administration in Social Work*, *37*(5), 494-510.

Riley, D. L., & Meredith, J. (2017). State efforts to strengthen school leadership: Insights from CCSSO action groups. *Policy Studies Associates, Inc.*

Ringeisen, H., Henderson, K., & Hoagwood, K. (2003). Context matters: Schools and the "research to practice gap" in children's mental health. *School Psychology Review*, *32*(2), 153-169.

Rowland, C. (2017, February 9). Principal professional development new opportunities for a renewed state focus [Web log post]. Retrieved from https://www.air.org/resource/principal-professional-development-new-opportunities-renewed-state-focus

School Leaders Network. (2014). *Churn: The high cost of principal turnover*. Retrieved from http://connectleadsucceed.org/sites/default/files/principal_turnover_cost.pdf

Scribner, J. P., Sawyer, R. K., Watson, S. T., & Myers, V. L. (2007). Teacher teams and distributed leadership: A study of group discourse and collaboration. *Educational Administration Quarterly*, *43*(1), 67-100.

Searby, L. (2010). Preparing future principals: Facilitating the development of a mentoring mindset through graduate coursework. *Mentoring & Tutoring: Partnership in Learning, 18*(1), 5-22.

Simpson, R. L., McKee, M., Teeter, D., & Beytien, A. (2007). Evidence-based methods for children and youth with autism spectrum disorders: Stakeholder issues and perspectives. *Exceptionality, 15*(4), 203-217.

Skinner, B. F. (1969). *Contingencies of reinforcement: A theoretical analysis.* New York: NY: Appleton-Century-Crofts.

Spillane, J. P., & Anderson, L. (2014). The architecture of anticipation and novices' emerging understandings of the principal position: Occupational sense making at the intersection of individual, organization, and institution. *Teachers College Record*, *116*(7), 1-42.

Stahmer, A. C., Suhrheinrich, J., Schetter, P. L., & Hassrick, E. M. (2018). Exploring multi-level system factors facilitating educator training and implementation of evidence-based practices (EBP): a study protocol. *Implementation Science*, *13*(1), 3.

Tabachnick, B. G., & Fidell, L. S. (2007). Using multivariate statistics. Boston, MA: Pearson.

The Wallace Foundation. (2008). *Becoming a leader: Preparing school principals for today's schools*. Retrieved from http://www.wallacefoundation.org/knowledge-center/Documents/Becoming-a-Leader-Preparing-Principals-for-Todays-Schools.pdf

Thompson, B., Diamond, K., McWilliam, R., Snyder, P., & Synder, S. (2005). Evaluating the quality of evidence from correlational research for evidence-based practice. *Exceptional Children, 71*(2), 181-194.

Tincani, M., Cucchiarra, M. B., Thurman, S. K., Snyder, M. R., & McCarthy, C. M. (2014). Evaluating NRC's recommendations for educating children with autism a decade later. *Child & Youth Care Forum, 43*(3)*, 315–337.

U.S. Department of Education. (2016). Non-regulatory guidance for title II, Part A funds: Building systems of support for excellent teaching and leading. Retrieved from, https://www2.ed.gov/policy/elsec/leg/essa/essatitleiipartaguidance.pdf.

Virginia Department of Education. (2011). *Special education child count.* Retrieved from www.doe.virginia.gov/

Virginia Department of Education, Data and Statistics. (2016). *Special education child count.* Retrieved from http://www.doe.virginia.gov/statistics_reports/research_data/

Wakeman, S. Y., Browder, D. M., Flowers, C., & Ahlgrim-Delzell, L. (2006). Principals' knowledge of fundamentals and current issues in special education. *National Association of Secondary School Principals Bulletin, 90*(2), 153–174.

Waldron, N. L., & McLeskey, J. (2010). Establishing a collaborative school culture through comprehensive school reform. *Journal of Educational and Psychological Consultation*, *20*(1), 58-74.

Walther-Thomas, C., & DiPaola, M. F. (2003).What instructional leaders need to know about special education. In W. Owens & L. Kaplan (Eds.), *Best practices, best thinking, and emerging issues in school leadership* (pp. 125–136). Thousand Oaks, CA: Corwin.

Wei, X., Wagner, M., Christiano, E. R. A., Shattuck, P., & Yu, J. W. (2014). Special education services received by students with autism spectrum disorders from preschool through high school. *The Journal of Special Education*, *48*(3), 167–179.

Weller, L. G. (2013). *Principals' attitudes toward inclusion: Including students with autism in elementary classrooms* (Unpublished doctoral dissertation). Indiana University of Pennsylvania, Indiana, PA.

Wilczynski, S. M., & Christian, L. (2008). The national standards project: Promoting evidence-based practice in autism spectrum disorders. In J.K. Luiselli, D.C. Russo, W.P. Christian, & S.M. Wilczynski (Eds.), *Effective practices for children with autism: Educational and behavioral support interventions that work* (pp. 37-60). New York, NY: Oxford.

Willging, C., Green, A., Gunderson, L., Chaffin, M., & Aarons, G. (2015). From a "perfect storm" to "smooth sailing": Policymaker perspectives on implementation and sustainment of an evidence-based practice in two states. *Child Maltreatment, 20*(1), 24-36.

Wong, C., Odom, S., Hume, K.., Cox, A., Fettig, A., Kucharczyk, S.,... & Schultz, T. (2015). Evidence-based practices for children, youth, and young adults with autism spectrum disorder: A comprehensive review. *Journal of Autism and Developmental Disorders*, *45*(7), 1951-1966.

Yell, M., Drasgow, E., & Lowrey, K. (2005). No child left behind and students with autism spectrum disorders. *Focus on Autism and Other Developmental Disabilities*, *20*(3), 130-139.

Zirkel, P. (2011). Autism litigation under the IDEA: A new meaning of "disproportionality"? *Journal of Special Education Leadership, 24*(2), 92-103.

Appendix A

Flow Chart on Literature Review Search
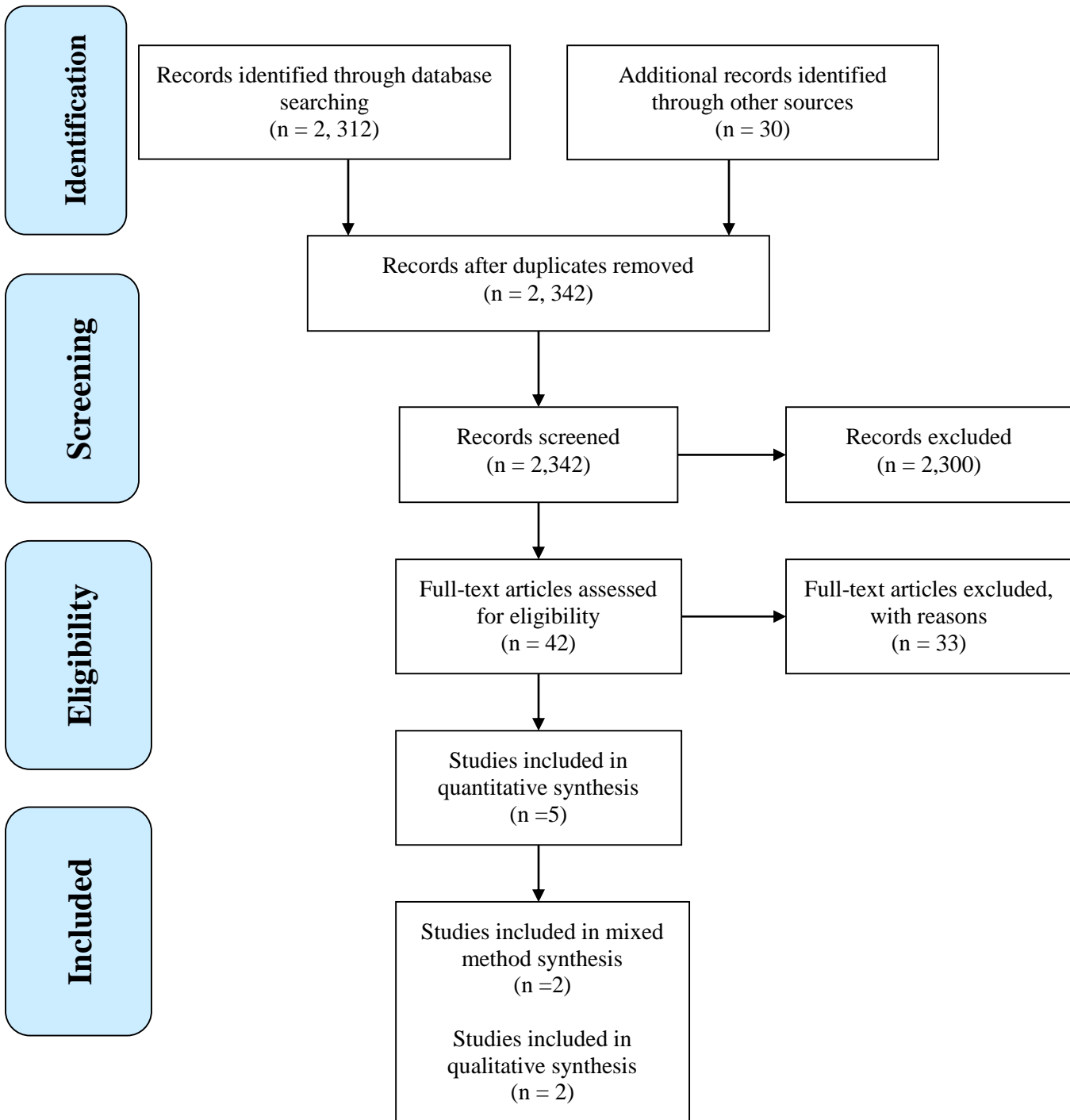
Appendix B

RESEARCH INFORMATION AND CONSENT

Thank you for considering participation in the study: **Public School Principals' Attitudes Regarding the Classroom Participation of Students with Autism who exhibit Challenging Behavior.** If any information about this study or your participation is not clear, please call or email the study staff named below. You may think about or discuss this study with family, friends, or trusted professionals, etc., before making your decision.

PURPOSE OF THE STUDY
The purpose of this study is to obtain information from elementary school principals regarding barriers to implementing evidence-based practices and supporting teachers of students with autism who exhibit challenging behavior. Additionally, this study will obtain information about professional development needs and priorities specifically related to on-the-job tasks and leadership skills.

To participate, you must be a public elementary school principal currently employed in Virginia. There are no additional participation requirements.

DESCRIPTION OF THE STUDY AND YOUR INVOLVEMENT
In this study, you will complete an online survey. As an effort to provide another opportunity to respond, a hard copy of the survey will be made available to participants, if requested or in the follow-up contact by mail. The hard copy survey and online survey will be exactly the same. The survey should take no longer than 15-20 minutes of your time for either option you elect to use.

RISKS AND DISCOMFORTS
As this study primarily assesses beliefs, needs, preferences, and priorities, the risks are very low. At any time, you do not have to answer any questions that make you feel uncomfortable, by skipping a question, declining to answer, or you may terminate your participation in the study at any time.

BENEFITS TO YOU AND OTHERS
The information learned may help division, state, and national leaders design ongoing, job-embedded professional development based on principals' identified needs, preferences, and priorities. You may not directly benefit from this study.

COSTS
There are no costs for participating in this study other than your time.

PAYMENT FOR PARTICIPATION
A $25.00 gift card will be mailed to 20 randomly selected survey participants. If you wish to be included in the group of individuals who are eligible for this gift card, you must provide us with your contact information after survey completion. Your name and mailing address will be confidential and kept separately from the information collected on the survey.

CONFIDENTIALITY
The only potentially identifiable information about you will consist of information we need to process and mail a gift card, if you are selected to receive one. This information will be stored separately from survey responses, and not linked to survey responses. Access to all data will be limited to study personnel. The information found from this study will be published as part of the requirements for the doctoral program at Virginia Commonwealth University, but your name or information about you will not ever be used in this paper or subsequent presentations.

VOLUNTARY PARTICIPATION AND WITHDRAWAL
You do not have to participate in this study. If you choose to participate, you may stop at any time. If you do not want to answer a specific question, then you can skip any question on the survey, at any time.

QUESTIONS
If you have questions, complaints, or concerns about your participation in this research, the research staff named below are the best persons to contact for questions about your participation in this study.

If special accommodations are required to participate, then you may also contact the study personnel.

> Taryn Goodwin Traylor
> PhD Candidate
> Virginia Commonwealth University
> (540) 578-4759
> tgtraylor@vcu.edu
>
> Kevin Sutherland
> Principal Investigator
> Virginia Commonwealth University
> 804-827-2652
> kssuther@vcu.edu

Virginia Commonwealth University's Institutional Review Board reviewed and approved this study (#HM20012176). If you have any general questions about your rights as a participant in this or any other research, you may contact:

Office of Research
Virginia Commonwealth University
800 East Leigh Street, Suite 3000
P.O. Box 980568
Richmond, Virginia 23298
Telephone: (804) 827-2157
Website: http://www.research.vcu.edu/irb/volunteers.htm

Contact this number for general questions, concerns, or complaints about research.

CONSENT

You may consent to participate in the study by clicking "I consent" below. If you agree to participate, you will be directed to a screen for completing the survey

I have read and understand this consent agreement and agree to participate in the survey (redirects user to the survey)

I do not wish to participate in the survey (redirects to a "thanks for your time" screen)

I would like to review the survey questions before deciding (redirects to survey questions for participants to review-PDF version)

Thank you for considering participation in this study.

Appendix C

Survey Instrument

Q-1: This survey is interested in learning more about how leaders support students with autism in their buildings. As the principal of a school in Virginia, I am asking for your support. You may or may not currently have students with autism in your school. Your input is very important regardless of whether you have students with autism or not. In analyzing the information that I collect, it will be helpful to know your current and past experience with supporting these students in the public school. Please select <u>one</u> of the following as it applies to your experience.

_____ Currently, my school has students with autism in general education classroom(s).

_____ Currently, my school has specialized programming for students with autism.

_____ Currently, my school has students with autism in general education classrooms <u>and</u> offers specialized programming for students with autism.

_____ My school <u>does not</u> have any students with autism in general education classroom(s), but I have experience with these students.

_____ My school <u>does not</u> have any students with autism in the classroom(s) and I <u>do not</u> have any experience with these students.

Part 1: Leadership Skills

Think about your professional skills as a principal. On a scale from 1 (very untrue of me) to 5 (true of me), indicate how often each statement reflects you as an educational leader. The purpose of this section is to identify skill areas to support your professional development needs in leadership. Think of all students with and without disabilities when answering this portion. ***For each rating, the following descriptors will be provided underneath each corresponding rating:** 1- very untrue of me, 2 – untrue of me, 3 – neutral, 4 – somewhat true of me, 5 – true of me

Reflection Statements	Very untrue of me-----------------True of me
Q-2 The school's vision is based on changing expectations that consider individualized situations of students.	1 2 3 4 5
Q-3 The school staff have a shared commitment to the mission of the school.	1 2 3 4 5
Q-4 The responsibility for each student's academic success is reliant on administrative support.	1 2 3 4 5
Q-5 Each student's needs is considered prior to making a decision that impacts access to school related activities.	1 2 3 4 5
Q-6 Faculty employ each student's strengths as assets for teaching.	1 2 3 4 5
Q-7 Each student has equitable access to social support necessary for future success.	1 2 3 4 5
Q-8 Student policies are developed to address student misconduct in an unbiased manner with consideration given to students with disabilities.	1 2 3 4 5
Q-9 Each student, regardless of disability, is encouraged to be an equitable member of the school community.	1 2 3 4 5
Q-10 There are school driven resources allocated to support students, placed out of division, to return to their comprehensive public school (i.e. home school).	1 2 3 4 5
Q-11 Workplace conditions promote professional staff to implement effective practices.	1 2 3 4 5
Q-12 School resources are allocated to support strengthening professional capacity.	1 2 3 4 5
Q-13 A systems perspective promote coherence among improvement efforts and all aspects of school programs.	1 2 3 4 5

Reference: National Policy Board for Educational Administration (2015). *Professional Standards for Educational Leaders 2015*. Reston, VA: Author.

Thank you for completing the first section. The next two sections will ask you to consider the support provided to students with autism exhibiting challenging behavior. You may currently serve these students in your building, may have served them in the past, or will have the opportunity to serve students with autism in the future. In effort to consider all elementary principals who may serve these students, reflect on the following sections to the best of your ability.

Part 2: Contextual Factors that Influence Placement Decisions
As a principal, you are faced with several contextual factors that affect the decisions you make daily for staff, students and community partners. In the chart below, rate the influence of each contextual situation 1 (not at all influential) to 5 (extremely influential) on your decision of whether or not a student exhibiting challenging behavior would remain placed in your school building.

Question: To what extent, do each of the contextual factors **influence your decision** to request a different placement for a student with autism who exhibits challenging behavior? Think about students who you are currently supporting or may support in the future with these support needs. These students can be in general education settings, resource settings, or in specific autism support classrooms.

*For each rating, the following descriptors will be provided underneath each corresponding rating: 1- not at all influential, 2 – slightly influential 3 – somewhat influential, 4 – very influential, 5 – extremely influential

Contextual Situation	Not at all influential -------Extremely Influential
Q-14 Your management of a student's challenging behavior has negatively impacted staff morale.	1 2 3 4 5
Q-15 Your staff are unable to effectively implement core building initiatives as a result of a student's challenging behavior.	1 2 3 4 5
Q-16 The time commitment required of staff to maintain the student with challenging behavior in their current setting.	1 2 3 4 5
Q-17 General education teachers perceive that one student's challenging behavior is disrupting the rest of the students' access to instruction.	1 2 3 4 5
Q-18 All building level staff perceive that behavioral management is a special education issue.	1 2 3 4 5
Q-19 Hiring skilled paraprofessionals	1 2 3 4 5
Q-20 Retaining skilled paraprofessionals	1 2 3 4 5
Q-21 Hiring skilled professionals	1 2 3 4 5
Q-22 Retaining skilled professionals	1 2 3 4 5
Q-23 Lack of access to trained professionals to assist your staff with maintaining a student with challenging behavior	1 2 3 4 5
Q-24 Lack of systematic technical assistance provided to your building level staff	1 2 3 4 5

Part 3: Needs Assessment
You have completed the second section, only two more sections to complete. To further identify specific development needs related to serving students with autism exhibiting challenging behavior, please complete the needs assessment portion. Please rate your familiarity with each task below. In addition, please rate the priority level of receiving professional development on a specific task.
Think of each skill in the context of serving students with autism who exhibit challenging behavior. These students could include those you are currently supporting or may support in the future. These students can be in general education settings, resource settings, or in specific autism support classrooms.

*For each rating, the following descriptors will be provided underneath each corresponding rating:
1- not at all familiar, 2 – slightly familiar, 3 – somewhat familiar, 4 – moderately familiar, 5 – extremely familiar (Level of Familiarity)
1- not a priority, 2- low priority, 3- medium priority, 4- high priority, 5 – essential priority (Priority Level)

Task	Level of Familiarity	Priority Level
Q-25 Providing instructional resources to a teacher	1 2 3 4 5	1 2 3 4 5
Q-26 Providing behavioral resources to a teacher	1 2 3 4 5	1 2 3 4 5
Q-27 Participating in Individualized Education Plan meetings	1 2 3 4 5	1 2 3 4 5
Q-28 Participating in Behavior Intervention Planning	1 2 3 4 5	1 2 3 4 5
Q-29 Ensuring Adherence to the Behavior Intervention Plan	1 2 3 4 5	1 2 3 4 5
Q-30 Determining disciplinary actions	1 2 3 4 5	1 2 3 4 5
Q-31 Making placement recommendations	1 2 3 4 5	1 2 3 4 5
Q-32 Evaluating teachers who serve this specific population	1 2 3 4 5	1 2 3 4 5
Q-33 Providing instructional recommendations to teachers	1 2 3 4 5	1 2 3 4 5
Q-34 Providing behavioral recommendations to teachers	1 2 3 4 5	1 2 3 4 5
Q-35 Supporting these students in the general education setting, who do not have BIPs in place	1 2 3 4 5	1 2 3 4 5
Q-36 Including these students in school related activities (i.e. pep rallies, assemblies)	1 2 3 4 5	1 2 3 4 5

Part 4: Demographic Information

Q-37 How long have you been a principal in your current building?
a) ____ Less than 1 year
b) ____ 1 year and under 4 years
c) ____ 4 years and under 7 years
d) ____ 7 years and under 10 years
e) ____ 10 years and under 13 years
f) ____ 13 years and under 16 years
g) ____ 16 years or more

Q-38 What best describes the location of your school? [Source: U.S. Census Bureau and Institute of Educational Sciences: National Center for Educational Statistics)
a) Rural
b) Urban
c) Suburban
d) Not Sure

Q-39 What is the core initiative in your school this year?
a) Growth Mindset
b) Reading Achievement
c) Math Achievement
d) Both b and c
e) Other (please specify):_____

Q-40 How many initiatives is your building targeting this year?
a) None
b) 1 or less than 3
c) 3 or less than 5
d) 5 or more

Q-41 What is your highest preference related to professional development format? (Check one)
a) Face-to-Face Workshop
b) Conference
c) Online Modules
d) Hybrid – Combination of Online Modules and Face-to-Face
e) Professional Learning Community: organized, monthly meetings with other principals within your district on current topics
f) Leadership Academies: organized, monthly meetings with other leaders in the field at a state level that fosters growth in leadership skills
g) Individualized Job Embedded Coaching
h) Other: _____

Q-42 What is the best mode of communicating new information to you outside of structured professional development?

a)   Email

b)   Phone

c)   Mail

d)   Face-to-Face Meeting

e)   Principal's Meeting

f)   Other (please specify): _____

Q-43 How many professional development opportunities did you participate in the past school year (2016-2017) on autism spectrum disorder (ASD)?

a)   None

b)   1-2

c)   3-4

d)   5 or more

Q-44 How many professional development opportunities did you participate in the past school year (2016-2017) on challenging behavior?

a)   None

b)   1-2

c)   3-4

d)   5 or more

Q-45 On a scale of 1 to 5, where 1=not at all familiar and 5 =extremely familiar, how would you rate your level of familiarity of evidence-based programming related to supporting teachers of students with *autism spectrum disorder (ASD) who exhibit challenging behavior*?

a)   ____ not at all familiar (1)

b)   ____ slightly familiar (2)

c)   ____ somewhat familiar (3)

d)   ____ moderately familiar (4)

e)   ____ extremely familiar (5)

Q-46 On a scale of 1 to 5, where 1=not at all familiar and 5 =extremely familiar, how would you rate your familiarity of teacher evaluation tools used to evaluate teachers who support students with *autism spectrum disorder (ASD) who exhibit challenging behavior*?

a)   ____ not at all familiar (1)

b)   ____ slightly familiar (2)

c)   ____ somewhat familiar (3)

d)   ____ moderately familiar (4)

e)   ____ extremely familiar (5)

Q-47 On a scale of 1 to 5, where 1=not at all familiar and 5 =extremely familiar, how would you rate your familiarity of the Guidelines for Uniform Performance Standards and Evaluation

Criteria for Principals created by the Virginia Department of Education to assist in principal development?

a) _____ not at all familiar (1)
b) _____ slightly familiar (2)
c) _____ somewhat familiar (3)
d) _____ moderately familiar (4)
e) _____ extremely familiar (5)

Please indicate if you have any other comments on your professional development priorities or contextual factors that affect your decisions to keep students in your building. (End of Survey)

Appendix D

Invitation Letter (Day 1)

Dear _____:

In the last five years, the number of students identified with autism in Virginia's public school continues to increase higher than any other disability category. Many of these students attend your schools today, and require principals to regularly address their intensive behavioral and educational needs. Despite recent principal evaluation standards and national professional standards, we know little about how principals make daily decisions to keep students with autism who may exhibit challenging behaviors in their buildings. We also know little on your preferences for professional development content and the delivery of that content.

As a current elementary school principal in Virginia, you have been identified as someone who can contribute significant information to this research. In order to obtain true representation of the diverse needs of principals in your area, your participation is critical.

Your participation is voluntary and all responses will be confidential. You will not be asked to provide any identifying information that can be traced back to you. Participants will have the opportunity to win one of twenty $25.00 gift cards for completing the survey. If you wish to enter a random drawing for a gift card, you will be redirected to another screen after completing the survey to enter your contact information your name and mailing address will not be attached to your responses.

You may decline to participate at any time. You also may skip any question on the survey that you do not want to answer. The information provided will assist us in the development of future professional development to support principals in Virginia in meeting the needs of staff and students. The survey can be completed online at the following URL:

https://worksupport.com/surveys/principals

You have been assigned a unique identifier. <u>The unique identifier is assigned to you to ensure that if you complete the survey, you will not receive additional requests to participate.</u> At no time will this identifier be attached to your survey results. You will enter this identifier when you begin the survey. Here is your unique identifier.
Unique Identifier: ____

Thank you for your time and consideration. Your input is very important, and I hope you will participate! If you would like more information, please contact me at 540-578-4759

Taryn G. Traylor, M.Ed, BCBA, LBA
PhD Candidate
VCU IRB (Reference: **HM20012176**)

Appendix E

Follow-up Email (Day 4)

Subject: {Important} Virginia Elementary School Principal Research Survey

Dear _____,

Earlier this week, I sent an invitation letter to your school seeking your opinion about preferences and priorities for professional development related to supporting students with autism who exhibit challenging behavior.

This research survey has been sent to elementary school principals in the state of Virginia. It is extremely important that your voice be included in the results, so that elementary principals are accurately represented for your area.

To make it easy to respond today, I am providing you with the electronic link to the survey. Simply click on this link to participate in the survey:

https://worksupport.com/surveys/principals

Second, look for the text box on the screen to enter your unique identifier.
Unique Identifier: _____

The unique identifier is assigned to you, to ensure that if you choose to participate, you will not receive follow up contacts following your participation. At no time will this identifier be attached to your survey results.

I appreciate you considering this request and your participation is voluntary. If you wish to enter a random drawing for a chance at one of twenty $25.00 gift cards, you will be redirected to another screen after completing the survey to enter your contact information your name and mailing address will not be attached to your responses. You may decline to participate at any time. You also may skip any question on the survey that you do not want to answer.

Thank you for your time, expertise, and service as a principal in Virginia.

Cordially,
Taryn G. Traylor, M.Ed, BCBA, LBA
Ph.D. Candidate VCU IRB (Reference: **HM20012176)**

Appendix F

Follow-up Email (Day 10)

{Important} Virginia Elementary School Principal Research Survey

Dear _____,

Recently, we sent you an email asking you to complete a research survey about your priorities for professional development related to supporting your teachers of students with autism.

Given the critical shortage of quality professional development opportunities for elementary principals in Virginia, I urge you to ensure your opinions are heard. Elementary principals are faced with complex demands each day that impact their abilities to invest time in student and teacher engagement. We know how important this is to you and your fellow principals, and want to ensure that professional learning caters to your desires as a principal.

To make it easy to respond today, I am providing you with the electronic link to the survey. Simply click on this link to participate in the survey:

https://worksupport.com/surveys/principals

Second, look for the text box on the screen to enter your unique identifier.
Unique Identifier: _____

The unique identifier is assigned to you, to ensure that if you choose to participate, you will not receive follow up contacts following your participation. At no time will this identifier be attached to your survey results.

I appreciate you considering this request and your participation is voluntary. Thank you for your service as a principal in Virginia.

Cordially,

Taryn G. Traylor, M.Ed, BCBA, LBA
Ph.D. Candidate
VCU IRB (Reference: **HM20012176)**

Appendix G

Follow-up Mailing with Paper Survey (Day 18)

Unique Identification Code
Date
Inside Address

Dear _____,

Three weeks ago, I emailed you asking for your opinion concerning professional development for elementary principals on supporting teachers and students affected by autism. To date, we have not received your online response to this important research survey.

We believe elementary principals in Virginia understand the determining factors to keep students with autism who exhibit challenging behaviors in comprehensive public schools. This survey will provide critical preliminary information to develop meaningful professional development for your area as well as others in the state of Virginia.

The information provided will assist us in the development of future professional development to support principals in Virginia in meeting the needs of staff and students. For your convenience, the survey link can be completed online at the following URL:

https://worksupport.com/surveys/principals

You have been assigned a unique identifier. <u>The unique identifier is assigned to you to ensure that if you complete the survey, you will not receive additional requests to participate.</u> At no time will this identifier be attached to your survey results. You will enter this identifier when you begin the survey. Here is your unique identifier. It is also provided at the top of this letter.

Unique Identifier: ____

You may or may not currently have students with autism in your school. Your input is very important regardless of whether you have students with autism or not. We are interested in your answers even if you have served 1 student with autism, or have experienced supporting teachers of these students in a different capacity. Please let me know if I can answer any specific questions you have about participating in this research. The telephone number is 540-578-4759.

Warm Regards,

Taryn G. Traylor, M.Ed, BCBA, LBA
Ph.D Candidate
VCU IRB (Reference: **HM20012176)**

Appendix H

Final Email Contact (Day 22)

Subject: {Final Request} Virginia Elementary School Principal Research Survey

Dear _____,

As a final reminder, we are writing to encourage your participation in this important research survey on the needs and priorities of elementary principals in Virginia. The opportunity for you to provide your insight on this critical topic will end on _____. Your participation is voluntary.

The unique URL address and your personal password is provided for easy access to the web survey.

https://worksupport.com/surveys/principals

Second, look for the text box on the screen to enter your unique identifier.
Unique Identifier: ____

The unique identifier is assigned to you, to ensure that if you choose to participate, you will not receive follow up contacts following your participation. At no time will this identifier be attached to your survey results.

Enjoy the rest of your school year. We are hopeful the results of this survey will drive future professional development provided to principals in your area.

Sincerely,

Taryn G. Traylor, M.Ed, BCBA, LBA
Ph.D Candidate
VCU IRB (Reference: **HM20012176)**

Appendix I

Virginia Commonwealth University Information Technology Approval
Coldfusion Database for Data Management

VCU

Katherine J Inge <kinge@vcu.edu>

Re: RRTC App Scan Results
1 message

Dan Han <s2dhan@vcu.edu>   Thu, Feb 16, 2017 at 12:52 PM
To: Katherine J Inge <kinge@vcu.edu>
Cc: Rob Toback <tobackrj@vcu.edu>, Douglas O Erickson/FS/VCU <doerickson@vcu.edu>

Hi Katty,

Thank you and I have followed up with Rob. Based on what we have examined, and actions taken by Doug, I believe at this point, your application is properly secured and can be used to handle sensitive information. Going forward, I recommend working with Doug to properly manage updates to systems and software used by the application, and work with us on re-assessing the application when significant changes are made to it. Thank you.

Dan Han
Chief Information Security Officer
Virginia Commonwealth University
Office: (804) 828 -1015

Don't be a phishing victim - VCU and other reputable organizations will never use email to request that you reply with your password, Social Security number or confidential personal information. For more details visit http://go.vcu.edu/phishing or http://phishing.vcu.edu.

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Appendix J

Table J1

Summary of Exploratory Factor Analysis Using Principal Components Analysis with Varimax Rotation

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Communalities
School's vision	.001	**.540**	.001	-.088	-.061	-.024	.443
Shared Commitment	.062	**.747**	.057	-.004	.047	-.014	.598
Admin Support	.001	**.588**	-.101	.078	.034	.281	.489
Student's Needs	.036	**.758**	-.057	.068	.015	-.040	.608
Student's Strengths	.036	**.679**	.043	.017	.006	.049	.512
Equitable Access	-.021	**.610**	-.023	-.006	-.078	.065	.548
Student policies	-.017	**.712**	-.049	.016	-.027	-.008	.594
Equitable Member	.041	**.785**	.047	-.074	.009	-.110	.648
Allocate School Resources	.130	**.298**	.120	-.022	-.127	-.094	.538
Workplace Conditions	.058	**.751**	-.070	.029	.046	.105	.544
Professional Capacity	.053	**.753**	.058	.216	-.023	.058	.629
Systems Perspective	.134	**.667**	-.049	.199	-.036	.071	.665
Staff Morale	.110	-.055	.124	.088	**.691**	-.111	.627
Core Initiatives Impacted	.069	.029	-.092	.037	**.691**	-.085	.492
Time Commitment	.037	.118	.108	.040	**.737**	-.032	.665
Gened Impact	-.028	.016	.101	-.020	**.769**	.027	..627
Behavioral Management – Special Education	.039	-.101	.082	-.108	**.607**	-.013	.862
Hiring skilled paraprofessionals	.076	-.017	**.915**	.051	.082	.009	.896
Retaining skilled paraprofessionals	.083	-.006	**.933**	-.003	.060	.032	.910
Hired skilled professionals	.139	-.022	**.932**	-.014	.089	-.018	.884

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Communalities
Retaining skilled professionals	.157	-.034	**.915**	.013	.109	-.052	.740
Lack of access to trained professionals	.079	-.051	.275	-.064	**.341**	-.048	.763
Lack of systematic technical assistance	.033	-.090	.246	.035	**.336**	-.062	.672
Providing instructional resources to a teacher	.186	.055	.057	**.786**	-.001	-.076	.722
Providing behavioral resources to a teacher	.141	.048	.043	**.741**	.006	.332	.555
Providing instructional resources to a teacher	.030	.080	-.009	.099	.056	.241	.779
Participating in behavior intervention plan	.141	.054	.003	.227	-.075	**.810**	.770
Ensuring adherence to the behavior intervention plan	.200	.113	-.019	.141	-.124	**.811**	**.741**
Determining disciplinary actions	.054	-.041	.047	**.271**	.047	.283	.657
Making placement recommendations	.108	-.003	.011	**.280**	.059	.386	.685
Evaluating teachers who serve this specific population	.056	.051	-.037	**.498**	-.009	.370	.714
Providing instructional recommendations to teachers	.097	.154	-.052	**.770**	.094	.080	.789
Providing behavioral recommendations to teachers	.084	.050	.013	**.762**	-.037	.414	.659
Supporting these students in the gened setting, who do not have BIPs in place	.195	.082	-.019	**.471**	-.046	.585	.659
Including these students in school related activities	.123	.119	.027	**.338**	-.159	.128	.523

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Communalities
Providing instructional resources to a teacher	**.708**	.081	.144	.123	-.005	-.138	.654
Providing behavioral resources to a teacher	**.697**	.133	.049	.025	.131	-.020	.685
Participating in individualized education plan meetings	**.832**	.012	.057	.157	-.008	.146	.792
Participating in behavior intervention plan	**.828**	.052	.027	.074	.007	.101	.740
Ensuring adherence to the behavior intervention plan	**.804**	.048	.045	.087	.028	.159	.707
Determining disciplinary actions	**.757**	.027	.032	.083	.129	.069	.706
Making placement recommendations	**.742**	-.030	.067	-.025	.172	.084	.702
Evaluating teachers who serve this specific population	**.767**	.028	.078	.012	.008	.050	.734
Providing instructional recommendations to teachers	**.757**	.031	.123	.098	-.070	.018	.682
Providing behavioral recommendations to teachers	**.770**	.050	.125	.121	.016	-.025	.775
Supporting these students in the gened setting, who do not have BIPs in place	**.681**	.075	-.085	.056	.026	.093	.597
Including these students in school related activities	**.701**	.015	.094	.039	-.081	.149	.718
Eigenvalues	8.9	5.7	4.4	3.6	2.7	1.4	
% Total Variance	19%	12%	9.4%	7.8%	6%	3.1%	

Note. Major factor loadings are bolded.

Appendix K

Table K1

Factor Analysis of Job Task Factor Using Component Matrix and Communalities

	Factor 1	Factor 2	Communalities
Providing instructional resources to a teacher	**.571**	-.607	.638
Providing behavioral resources to a teacher	**.734**	-.311	.712
Providing instructional resources to a teacher	**.432**	.364	.730
Participating in behavior intervention plan	**.716**	.409	.669
Ensuring adherence to the behavior intervention plan	**.664**	.430	.653
Determining disciplinary actions	**.661**	.215	.660
Making placement recommendations	**.659**	.135	.674
Evaluating teachers who serve this specific population	**.728**	-.090	.702
Providing instructional recommendations to teachers	**.697**	-.373	.626
Providing behavioral recommendations to teachers	**.838**	-.201	.704
Supporting these students in the gened setting, who do not have BIPs in place	**.794**	.070	.513
Including these students in school related activities	**.533**	.088	.715
Eigenvalues	6.85	1.140	
% Variance Explained	57.13%	9.50%	

Note. Major factor loadings are bolded.

Vita

Taryn Goodwin Traylor was born in Chesterfield, Virginia. She graduated from James Madison University in 2008 with her Masters of Education, with a minor in Special Education. Following graduation, Taryn accepted a position as a program coordinator of an in-home program for students with autism, ages 2-22. For seven years, she lived and worked in the Shenandoah Valley. Taryn relocated back to Richmond, Virginia in 2012, and accepted a position at Virginia Commonwealth University as a training associate. In the position, she developed online content for courses on evidence-based practices and positive behavior supports. Additionally, she facilitated four online courses with several different instructors. She taught several courses in the post-baccalaureate certificate program in autism spectrum disorder. Currently, Taryn is an autism program coordinator for Region 1, or central Virginia area. Within this role, Taryn provides technical assistance to 15 different localities within this region. Along with her colleague, she replicated a train-the-trainer model for establishing behavior support teams within the localities to serve students with intensive behavior needs.