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The Use of Outside Agents to Improve Special Education Service Delivery: A Mixed-Methods Analysis

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A prospectus submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at Virginia Commonwealth University

by

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Dedication

Never underestimate the power of a single person or moment to change your world. I dedicate this work to the person and moment which made all this possible.

"I think you should smile."

William H. Young

November 19, 1988

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Abstract

THE USE OF OUTSIDE AGENTS TO IMPROVE SPECIAL EDUCATION SERVICE DELIVERY: A MIXED-METHODS ANALYSIS

By: Christine E. Young, PhD.

A prospectus submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University

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Under the No Child Left Behind Act of 2001, states created statewide systems of support, in collaboration with existing agencies, to deliver targeted assistance to districts and schools identified as in need of support. With limited personnel and resources, state education agencies partnered with outside agents to address the needs of a growing number of low-performing schools. Support and services for low-performing schools were designed to increase opportunities for schools to meet academic content and achievement standards for all students. Strong outside agents (skilled in systems change, knowledge of interventions and capacity for relationship-building) have been shown to produce changes in low-performing schools, but the long-term effect of those changes is unclear. One barrier to the implementation of the statewide system of support, and to any useful evaluation of its impact, is the presence of vulnerable populations, such as students with disabilities. Because low-performing schools tend to have larger student populations identified with academic risk factors like disability status,

understanding how the partnership between state education agencies and outside agents improves outcomes for students with disabilities, specifically, is essential in evaluating the overall impact of the statewide system of support.

The purpose of this research is to examine how a mid-sized state's implementation of the statewide system of support provision, as outlined in The No Child Left Behind Act of 2001, by incorporating an existing regional training and technical assistance system, one focused specifically on improving special education, impacted instructional delivery for students with disabilities.

Chapter I

Introduction

When the No Child Left Behind Act of 2001 was signed into law, policymakers and educators hailed the legislation as moving the country forward, by requiring states to improve the educational outcomes for all students, regardless of their social, geographical, or economic background (Hess & Petrilli, 2004). NCLB (2001) stipulated that state education agencies (SEA) must be accountable for student learning and held responsible for any lack of progress among specific subgroups (see Table 1). NCLB (2001) called for states to not only develop statewide systems of support (SSOS) to intervene with schools identified as low performing under the state accountability system, but also to monitor and publicly report those schools' progress (see Table 1). The purpose of establishing SSOS was to provide capacity-building technical assistance under P.L. 107-110, Sec. 1117 (a)(1) for schools identified in need of: (a) school improvement, (b) corrective action, or (c) restructuring.

> Each state shall establish a statewide system of intensive and sustained support and improvement for local education agencies and schools receiving funds under this part, to increase the opportunity for all students served by those agencies and schools to meet the state's academic content standards and student academic achievement standards. (Sec. 1117[a][1])

However, SEAs must now determine how to implement requirements to improve student outcomes under The Every Student Succeeds Act of 2015 (ESSA), without regulatory language

for guidance (Hess & Eden, 2017). Moreover, SEAs are impacted by the most recent U.S. Supreme Court ruling, which questions the adequacy of SEA support for students with disabilities (*Endrew et al. v. Douglas County School District*, 2017). This is an enormous task when considering that SEAs are often confronted with capacity issues when implementing large-scale directives (Elias & Leverett, 2011; Lane, Seager, & Frankel, 2005). Therefore, determining the components of SSOS that lead to improved student performance and how they address the needs of different groups of students is critical.

Table 1 *Comparison of Subgroups Under NCLB and ESSA*

Identified Subgroups	**NCLB**	**ESSA**
Students identified "economically disadvantaged"	X	X
Students identified as "English language learners"	X	X
Students identified as having a disability	X	X
Students identified as a part of "major racial/ethnic minority groups"	X	X
Students identified as "homeless" for all or part of the school year		monitor[a]
Students who have parents serving in the military		monitor[a]
Students living in foster care for all or part of the school year		monitor[a]

Note. NCLB = No Child Left Behind Act of 2001; ESSA = Every Student Succeeds Act of 2015; X = monitor and publicly report on state and school report cards.
[a]Three subgroups were added under ESSA (2015) for monitoring purposes only. States are not required to create systems of support or to report disaggregated data for these additional subgroups (Association for Supervision and Curriculum Development, 2015).

The Individuals with Disabilities Education Act of 2004 (IDEA; 2004) clarified the role of SSOS to improve educational outcomes for students with disabilities within low-performing schools:

> To provide technical assistance to schools and local education agencies and direct services including supplemental education services (1116[e]) of the Elementary and Secondary Education Act to students with disabilities in schools or local education agencies identified for improvement under Section 1116 of the Elementary and Secondary Education Act on their sole basis of the assessment results of the disaggregated subgroup of students with disabilities, including providing professional development to special and regular education teachers who teach students with disabilities, based on scientifically-based research [designed] to improve instruction in order to improve academic achievement to meet or exceed [expectations] stated in NCLB, Section 1111(b)(2)(g). (IDEA, 2004, 34 C.F.R. 300.704[b][1])

The language in the re-authorization of IDEA (2004) resembled language found in NCLB (2001), requiring that all students may have access to and may benefit from the public school system in the United States. In both NCLB (2001) and IDEA (2004), "all" equates to 100% of all students, regardless of identified challenges. All students should demonstrate academic proficiency on state assessments (IDEA, 2004; NCLB, 2001). Translated to real numbers, 100% of students in special education in the United States, in 2015, equated to roughly 6,513,000 students (~13%) enrolled in kindergarten through 12th grade (National Center for Education Statistics, 2015).

Under NCLB (2001) and IDEA (2004), states are directed to create SSOS, in collaboration with existing agencies, to deliver targeted assistance to both local education agencies and individual schools in need of support (IDEA, 2004; NCLB, 2001). Educational legislation fluctuates and the exact requirements for SEAs may change, but accountability for all students, including students with disabilities is expected (ESSA, 2015; IDEA, 2004) and now

legally mandated by the U.S. Supreme Court (*Endrew et al. v. Douglas County School District*, 2017). Understanding how SSOS improve educational outcomes for students with disabilities is, therefore, imperative.

Statement of the Problem

When measuring academic progress by state assessments, a wide performance gap exists between students with disabilities and their non-disabled peers. This gap in performance may widen if the SSOS focuses solely on providing support to low-performing schools (Felner, Bolton, Seitsinger, Brand, & Burns, 2008). Challenges to establishing SSOS to improve special education services include staffing shortages and capacity limits, both of which are only further exacerbated by the complexity of the task; therefore, SSOS increase their reliance on outside agents to implement support systems aimed at school improvement and, specifically, those designed to support students with disabilities (Hergert, Gleason, Urbano, & North, 2009; Massell, Goertz, & Barnes, 2012). It is critical to understand the impact of using outside agents on teacher practices, and to monitor the resultant academic performance among students with disabilities (Massell et al., 2012).

Statement of Purpose

NCLB (2001) included provisions, under P.L. 107-110, Sec. 1117 (a)(1), to develop capacity-building technical assistance for schools in need of: (a) improvement, (b) corrective action, or (c) restructuring. States were directed to create SSOS in collaboration with existing agencies to deliver targeted assistance to both local education agencies and individual schools identified as being in need of support (NCLB, 2001). NCLB also established requirements for these systems to improve academic achievement among specific subgroups of students, including students with disabilities (see Table 1). The purpose of this research is to examine how a mid-

sized state's implementation of the statewide system of support, by incorporating an existing regional training and technical assistance system focused on improving special education, impacted instructional delivery for students with disabilities.

The target state's existing training and technical assistance system is an essential component to providing support and interventions to improve instruction for students with disabilities under the SSOS requirement. The work of the regional training and technical assistance system is complex, and involves meeting needs at the classroom, school, and district levels. For this reason, evaluating the influence of the regional system is challenging (Duchnowski, Kutash, & Oliveira, 2004). Identifying specific processes that resulted in improved instructional practices for students with disabilities is essential to measuring the overall impact of this facet of the SSOS (Hall & Hord, 2015). The purpose of this research is to examine the changes in instructional delivery, specifically for students with disabilities, resulting from the incorporation of an existing regional training and technical assistance system, one focused specifically on providing supports and services to improve special education.

Research Questions

In 2012, as part of the requirement of establishing a SSOS, the participating state enlisted an existing regional training and technical assistance system of support to address the needs of students with disabilities within low-performing schools. The following research questions focus on the period following the implementation of the state's reorganization of the SSOS (July 2013–June 2016), prior to the passage and implementation of the Every Student Succeeds Act of 2015 (ESSA, 2015):

Research Question 1 (Quantitative)

Across the statewide, regionally-based training-and-technical-assistance system,

1a. what types of professionals are requesting services (i.e., teachers, administrators, paraprofessionals);

1b. what types of supports and services have been requested (i.e., consultations, meetings, library services); and

1c. what focus areas for support and services have been requested (i.e., assessment, collaboration, reading)?

Research Question 2 (Quantitative)

As demonstrated by official requests for service,

2a. how did demands for requests for services change over time (2013–2016), when controlling for district size and special education population density; and

2b. which school districts maintained a relationship (as defined by three or more contacts in a calendar year) by requesting and receiving services from their regional technical assistance service provider during the three-year study period (2013–2016)?

Research Question 3 (Quantitative)

Across the statewide, regionally-based training and technical assistance system, how do educational professionals (i.e., teachers, administrators, paraprofessionals) perceive:

3a. the influence of the skills of regional technical assistance center specialists on the change process; and

3b. the influence of the district's organizational health in implementing changes to instructional practices for students with disabilities; and

3c. the role of regional technical assistance center specialists in building a relationship between the regional training and technical assistance system and personnel in the individual district/school?

Research Question 4 (Qualitative)

Across the statewide, regionally-based training-and-technical-assistance system, how do educational professionals (i.e., teachers, administrators, paraprofessionals) perceive:

4a. the influence of support and services by regional technical assistance center providers on whether changes instructional practices occurred for students with disabilities; and

4b. what specific changes to instructional practices occurred as a result of supports and services provided by their regional center?

Research Question 5 (Mixed Method)

Across the statewide, regionally-based training-and-technical-assistance system, what common elements of support and services do educational professionals (i.e., teachers, administrators, paraprofessionals) perceive to facilitate positive changes in instructional practices for students with disabilities?

Summary of Methodology

Mixed-methods research designs include collecting, analyzing, and mixing both quantitative and qualitative data within a single study or series of studies to understand a research problem (Creswell & Plano-Clark, 2011). This design approach is most effectively used when an explanation of a phenomenon may not be complete using a single methodology (Onwuegbuzie & Johnson, 2006). This research study will be composed of a sequential, explanatory design with priority given to the quantitative phase prior to qualitative data collection, with mixing of the data occurring after the completion of both phases (Figure 1). The design of this study could thus be illustrated as follows: *quan + quan → QUAL = Explain Results*. A mixed-methods study is more likely to yield a more complete analysis of the changes

in instructional practices resulting from technical assistance than conducting a quantitative or qualitative study in isolation (Onwuegbuzie & Johnson, 2006).

This mixed-methods research will be conducted over five phases (see Figure 1). Phase I will focus on a secondary data analysis of the statewide service delivery database. This database can be accessed online via a secure, password-protected platform; it is not publicly available. With the permission of the SEA, the researcher will analyze data collected by the state on regional training and technical assistance centers' service delivery. This analysis will result in two products: (a) a summary of requests for services reported by region and state during the study period, and (b) the identification of a purposive sample for data collection in Phase II. The purposive sample will be identified by using a two-level growth model to identify which districts and schools had a history of working with the regional training and technical assistance system, which strengthened during the study period (July 2013–June 2016), as evidenced by reported requests for services. It is critical for establishing validity that data collected in Phase II originate from districts which consistently received supports and services during the study period (2013-2016).

In Phase II, personnel at each regional technical assistance center will be asked to identify district personnel (within the identified purposive sample) who have received three or more supports or services from the regional technical assistance provider during the 2016-2017 school year. Regional center personnel will send a link to the mixed-methods survey to personnel from each district, identified in the purposive sample *(n=24)*, who have received three or more supports and services during the 2016-2017 school year from their assigned regional technical assistance provider (Association of University Centers on Disability, 2018). The survey link will ask personnel in the identified districts to detail their interactions with the regional training and

technical assistance system and to describe whether this system's support impacted instructional practices for students with disabilities.

Phase III will focus on quantitative data analysis. On the survey, participants are asked to respond to three demographic questions (provider type, content focus of support, and years working with their regional training and technical assistance provider) and ten belief statements using a Likert scale (1-5) to respond (Appendix A). This survey will result in ordinal and continuous variable data, which are not expected to present as a normal distribution. The primary approach to analysis will be non-parametric, in order to determine associations between data.

Phase IV will focus on qualitative data analysis. On the survey, participants are asked to respond, in narrative form, to open-ended questions regarding interactions with personnel from the regional training and technical assistance center (Dart & Davies, 2003). *Narratives of change* is a qualitative method of analysis that utilizes individual accounts of change, referred to as "stories," to examine evidence that change has occurred (Bau, 2016). Using this method, contextual clues and specific themes across stories are identified, contributing to a greater understanding of the complex process of change in educator practice (Bau, 2016). The stories of change will demonstrate whether the support and services delivered via the existing regional system had an impact on instructional practices for students with disabilities across the state (Dart & Davies, 2003). This process uses provisional and theoretical coding in a two-layer analysis. A Priori codes, identified from the conceptual frameworks for change agents, high-leverage practices in special education, and systems change theory, will be applied to complete the first layer of analysis (Bussey, Welch, & Mohammed, 2014; McLeskey et al., 2017; Miles, Saxl, & Lieberman, 1991). Theoretical coding derived from the adapted Managing Complex Change Framework (Ambrose, 1987; Hall & Hord, 2015) in conjunction with the Stages of

Concern Framework will be applied as the second layer of qualitative analysis (Hall & Hord, 2015).

A mixed-methods analysis will be conducted in Phase V. Using descriptive data collected from the database during Phase I, a chi-squared test for independence will be used to determine the significance of the relationship between the demographics of the collected qualitative sample when compared to the regional and statewide demographics of the identified purposive sample (Urdan, 2010). The narratives of change technique will be applied to identify evidence of change in teacher practice resulting from the regional training and technical assistance systems' efforts (Bau, 2016). Comparative analysis of the collected stories of the state, with responses to belief statements as to the impact of the supports and services provided by the regional training and technical assistance system, can serve to improve the external validity of regional accounts, ultimately improving the service delivery of outside agents (Bau, 2016).

	Process	Product
Phase I Quantitative Data Analysis	Secondary Data Analysis, Statewide Technical Assistance Database – official requests for service collected June 1, 2013 – June 30, 2016.	1. Summary of Technical Assistance Provided by Region (2013-2016) 2. Identify Purposive Sample for Phase II data collection.
Phase II Survey Administration	Survey data collected from professionals within districts identified in the purposive sample who have received three or more contacts of supports and services from regional personnel during the 2016-2017 school year.	1. Qualifier Data used to eliminate responses which are collected from outside the intended purposive sample. 2. Quantitative Data – participants are asked to respond to three demographic questions and indicate a Likert response to 10 belief statements. 3. Qualitative Data – participants are asked to respond in an open- ended format regarding interactions with regional training and technical assistance providers during the 2016-2017 school year.
Phase III Quantitative Data Analysis	1. Chi Squared Test of Independence (purposive sample and actual data sample). 2. Mantel-Haenszel Chi Square Test for Trend. 3. Eta (n) coefficient. 4. Spearman's Correlation.	1. Relationship between purposive sample and collected sample. 2. Association between to ordinal variables (belief statement response). 3. Association and measure of strength between a multinomial (role and content area) and continuous variable (number of contacts). 4. Association between two ordinal variables (belief statement response).
Phase IV Qualitative Data Analysis	1. First layer of analysis, provisional coding based on evidence in literature on effective change agents (Bussey et al., 2014; McLeskey et al., 2017; Miles et al., 1991).	Perceptions of the impact on instructional practices resulting from supports and services delivered by the regional training and technical assistance provider will be explored.

	2. Second layer of analysis, theoretical coding using the adapted Managing Complex Change Framework (Ambrose, 1987; Hall & Hord, 2003) in conjunction with the Stages of Concern Framework (Hall & Hord, 2003) perceptions of the impact on instructional practices.	
Phase V Mixed-Methods Analysis	Integration of quantitative and qualitative results resulting in a comparative analysis to identify common elements of supports and services which may have resulted in perceived changes to instructional delivery for students with disabilities.	Discussion Implications Future Research

Figure 1. Mixed-methods explanatory sequential design.

Definition of Key Terms

Local education agency. A *local education agency* is identified as having a public board of education legally constituted within a state for either administrative control or direction of, or to perform a service function for public elementary schools or secondary schools in a city, county, or township.

Narratives of change. *Narratives of change* is a qualitative method that utilizes individual accounts of change, referred to as "stories" (Bau, 2016).

Outside agent. An *outside agent* is any third party, not employed by the targeted school division, who provides technical assistance or support. Outside agents are also referred to in the literature as (a) consultants, (b) linking agents, or (c) change agents.

Regional system. A *regional system* is defined by clear geographic and political boundaries which determine delivery of supports and services.

Specialists. Individuals providing supports and services as representatives of the regional training and technical assistance system will be referred to as *specialists*.

State education agency. A *state education agency* is the state-level government organization responsible for education, including oversight of information, resources, and the provision of technical assistance on educational matters to schools and residents.

Statewide systems of support. *SSOS* are a system of comprehensive resources which states can use to assist low-performing schools.

Stories. These are data, collected in narrative form to document significant changes caused by an intervention.

Subgroups. *Subgroups,* under NCLB (2001) and ESSA (2015), are identified as groups having a history of poor performance on state assessments; once *subgroups* are identified, districts and states must monitor and publicly report on their progress.

Systems change. *Systems change* is defined as an attempt to systematically change the organizational culture, policies, and procedures within individual organizations, or across organizations, to improve outcomes.

Technical assistance. Under NCLB, technical assistance is the delivery of supports and services designed to bring about a change in practice.

Chapter II

Review of the Literature

The literature on the implementation of Statewide Systems of Support (SSOS) is largely descriptive in nature (Klute, Welp, Yanoski, Mason, & Reale, 2016; Underwood, 2013). Of the sixteen studies identified for this review, two had a quantitative design (Underwood, 2013; Vaganek, 2013), four had mixed methods (Airola, Bengston, Dunn, & Dean, 2014; McInerney & Hamilton, 2007; Stein, Therriault, Kistner, Welch, & Clymer, 2015; Turnbull, White, Sinclair, Riley, & Pistorino, 2011) and the remaining ten were qualitative (Becker, Koger, Sinclair, & Thacker, 2009; Bussey, Welch, & Mohammed, 2014; Davis, Krasnoff, Moilanen, Sather, & Kushman, 2007; Elias & Leverett, 2011; Glazer, 2009; Hergert, Gleason, Urbano, & North, 2009; Kinnamon, 2009; Lane, Seager, & Frankel, 2005; Nehring & O'Brien, 2012; Spruill, 2017). Research on SSOS is largely qualitative, as the directive for states to establish the SSOS included a requirement to address the local context within the design of supports. One common thread throughout the literature is the realization that State Education Agencies (SEA) lack the internal logistical capacity to address deficiencies identified through state assessments (Hergert et al., 2009; Nehring & O'Brien, 2012). NCLB (2001) called for states to partner with existing agencies to provide support despite limited capacity. This systematic review explores both the framework for implementing an effective SSOS and how outside agents might be used to address the needs of students with disabilities.

Study Identification Procedures

The initial studies for this review were identified using a three-step process (see Figure 2). First, an organic search was conducted for relevant peer-reviewed articles in the reference lists found in Chapters 1 and 4 of the *Handbook on Statewide Systems of Support* (Redding & Walberg, 2008). The purpose of this publication was to present outcomes from the initial implementation of SSOS. Chapter 1 provided an overview of the education legislation and the legal requirements for establishing a SSOS (Walberg, 2008). Chapter 4 outlined the role of SEAs in encouraging and supporting school improvement. Subsequent chapters highlighted SSOS activities within specific state models (Rhim, Hassel, & Redding, 2008).

The second step was to identify relevant studies through computer database searches of the Educational Resources Information Center via ProQuest, EBSCO, and PsycInfo using specific search terms as identifiers: *statewide system(s) of support*, *state education agency*, *capacity-building*, *technical assistance*, *low-performing schools*, *No Child Left Behind Act*, *academic improvement*, and *systems change*. To identify the maximum number of studies relevant to this research, variations of the above search terms were utilized. In addition to traditional database queries, a search was also conducted using the ProQuest Theses and Dissertations database. Database searches were conducted using reference lists in all articles identified through the database query process. Using Google Scholar, additional searches were conducted by combining the search term *statewide system(s) of support* and specific states in the previously identified research, which identified several more relevant articles (n = 8).

This comprehensive analysis of literature focused on the framework and development of SSOS, and a second comprehensive literature search was needed to investigate the use of outside agents. These research studies were also searched through the Educational Resources

Information Center via ProQuest, EBSCO, and PsycInfo. Search terms included: *statewide system(s) of support, capacity, outside agents, change agent, systems change, organizational change*, and *special education*. To identify the maximum number of studies relevant to this research, variations of the above search terms were utilized.

After all potential studies were identified (see Figure 2), inclusion and exclusion criteria were specified to screen full-text articles from the initial literature search. A comprehensive summary of eligible studies (n = 16) is demonstrated in Table 2.

Inclusion Criteria

The following criteria for the literature search were identified through a review of Redding and Walberg's (2008) work on SSOS and applied to both searches. First, the studies had to be peer-reviewed, published in English after January of 2002, and related to public education within the United States. The re-authorization of the Elementary and Secondary Education Act in 2001, known as NCLB (2001), indicated the requirement for states to establish SSOS. To be included in this search, research had to be published and based on data collected after the implementation of NCLB. Further, only research conducted with respect to K-12 public education in conjunction with statewide technical assistance initiatives or special education interventions designed to improve academic achievement were included. In addition to these inclusion criteria, articles had to focus on the development of statewide systems or the use of outside agents to improve instructional delivery in low-performing schools.

Exclusion Criteria

Despite paucity in SSOS literature, there are numerous briefs, memos, and observational reports published about this topic. Research and documents that were not peer-reviewed or had incomplete descriptions of methodology were excluded from this review. Further, research

studies focused on the implementation of specific strategies, such as school-wide/statewide implementation of positive behavioral interventions and support, were not included, as they did not adequately reflect the development of a statewide support system or the use of outside agents. Articles that included medical research and research regarding mental health and safety interventions were also excluded from this review. Further, because the term *statewide system* is used in multiple research disciplines, most articles (n = 17) identified had to be excluded because they did not reflect research from the field of education.

Research on the use of outside agents is extensive and spans across several decades. The roles of outside agents have evolved over time, especially since the introduction of the SSOS requirement (Miles et al., 1991; Stein et al., 2015). As such, research conducted prior to NCLB's passage and implementation was not considered for this systematic review. Influential articles regarding the historical use of outside agents to improve special education were used to construct the framework for the qualitative analysis (Hood, 1982; Miles et al., 1991; Yap, 1986).

Study Screening and Coding Procedures

Coding protocols were developed to determine and record the following four elements of relevant studies: (a) research methodology (i.e., quantitative, qualitative, or mixed-method), (b) study design (i.e., retrospective, descriptive, quasi-experimental), (c) study sample (i.e., personnel and role at time of research), and (d) focus or purpose of study.

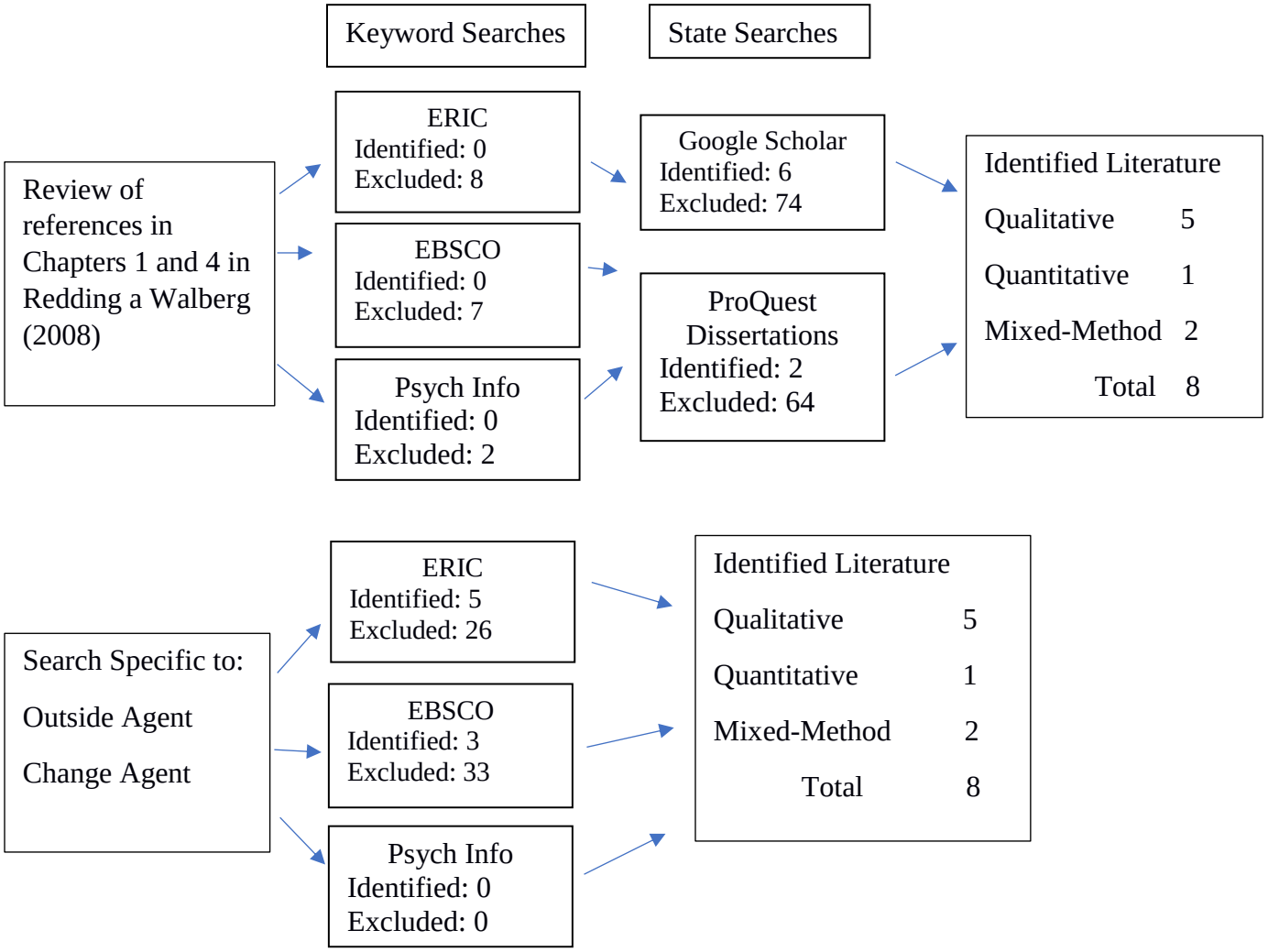

Figure 2. Literature search process

Table 2 *Study Summary*

Study	Method	Design	**Participants (*n*)**	Focus of Study
Airola, Bengston, Dunn, & Dean (2014)	Mixed-methods	Descriptive case study • Focus groups Secondary data analysis	Qualitative sample – students, teachers, principals and superintendents Quantitative sample – matched pairs analysis, public data set	Arkansas Department of Education: Exploration of the statewide initiative of school improvement.
Becker, Koger, Sinclair, & Thacker (2009)	Explanatory qualitative using quantitative Data	Descriptive case study • Document analysis • Focus groups • Interviews • Online questionnaires • Onsite visits	88 staff interviews; online questionnaires; 91 districts and 123 schools; onsite visits 6 districts and 15 schools	California: Examination of the technical assistance provided to schools under the SSOS.
Bussey, Welch, & Mohammed (2014)	Qualitative	Retrospective study to develop a theoretical framework	• Education literature • Organizational theory • Consulting and change management literature • Public policy	Documentation of factors to identify effective vs. ineffective outside agents.
Davis, Krasnoff, Moilanen, Sather, & Kushman (2007)	Qualitative	Descriptive study • Document analysis • Interviews	State Department of Education Representative for NCLB Implementation (Alaska, Idaho, Montana, Oregon, and Washington)	Multistate: Examines the network of technical assistance for schools in need of support without assessing impact.
Elias & Leverett (2011)	Qualitative	Descriptive Case Study	1 school division partnering with an external agent to implement a Social-Emotional Learning Curriculum	Examined critical elements for change agents working in school improvement.

Glazer (2009)	Qualitative	Descriptive case study • Interviews • Observations • Document Analysis	Purposive Sampling of staff at America's Choice	Focused on the transformation of education professionals as agents of change.
Hergert, Gleason, Urbano, & North (2009)	Qualitative	Descriptive case study • Websites, reports • Policy documents • Interviews • Focus groups	State Education Agencies: Connecticut, Maine, Massachusetts, New Hampshire, New York, Puerto Rico, Rhode Island and Vermont	Multistate: Examination of the criteria used by state education agencies to identify the need for supports and services and corresponding supports and services provided.
Kinnamon (2009)	Qualitative	Descriptive Study • Quantified perceptual survey • Self-report of school improvement activities	State and national leaders in school improvement 13 Districts participating in Capacity Builders Project • 2 pilot districts • 17 pilot schools	Idaho: Describe and analyze the design and establishment of the SSOS (Idaho Building Capacity Project).
Lane, Seager, & Frankel (2005)	Explanatory Qualitative using Quantitative data	Descriptive case study • Survey • Focus groups • Document analysis • Observations	115 individuals representing all 5 geographical regions and networks 3-year study	New York State Education Department: Explanation of multiple agencies collaboration for school improvement.
McInerney & Hamilton (2007)	Mixed-methods	• Interviews • Observations • Linking Agent Scale	32 School Districts • Urban, suburban and rural communities • Similar size in population, special education enrollment and free/reduced lunch	Examination of the "insider-outside" approach to delivering technical assistance. Examination of factors which facilitate change.

Nehring & O'Brien (2012)	Qualitative	Descriptive Study • Action plans • Document analysis • Reflective journals	28 practitioners in 14 schools across 10 districts.	An examination of the role of school-based change agents.
Spruill (2017)	Qualitative	Interviews -Purposive Sampling	23 partnership organizers with a minimum of 3 years of experience.	Explored how the building and maintaining relationships is measured and strengthened.
Stein, Therriault, Kistner, Welch, & Clymer (2015)	Mixed-method	Quasi-experimental sequential case study • Interviews over multiple phases Secondary data analysis	Seven school districts participating in AIP initiative • 12 elementary • 4 Middle • 3 High Comparison districts determined through statistical matching.	Massachusetts: Exploration of the Accelerated Improvement Plan Process.
Turnbull, White, Sinclair, Riley, & Pistorino (2011)	Mixed-method	Program Evaluation • Multi-year data collection • Document Analysis • Interviews • Surveys • Expert Panel Review	16 Regional Comprehensive Centers 5 Content-based Centers	Evaluation of technical assistance provided by change agents.
Underwood (2013)	Quantitative	Quasi-experimental study • Regression analysis • Pooled interval time series	Purposeful, stratified sample used for comparative design.	Idaho: Impact study looking at implementation of SSOS and achievement.

Vaganek (2013)	Quantitative	Survey	169 Instructional Consultation Team Members	Explored the perspective of the change agent in facilitating change.

Theoretical Framework

Ludwig von Bertalanffy (1968) proposed the idea of systems theory in the 1940s, which focused on the relationship between "parts" of an organization and the resulting "whole." Von Bertalanffy further expanded upon this theory, suggesting that a system is a complex grouping of elements that both support and affect each other. In addition, von Bertalanffy explained that the parts of a system are in a constant state of evolution and are interacting with each other and their environment (von Bertalanffy, 1968). However, change efforts in education are slow, and often fail since efforts designed to elicit change do not account for the relationships between the disparate parts of the system (Villa & Thousand, 2000).

Given that systems change in education is ongoing, researchers have focused on developing ways to both manage and identify the results of systems change efforts (Hall & Hord, 2015; Villa & Thousand, 2000). Change is complex and dynamic, but clear patterns emerge that can be observed to document the process of change (Hall & Hord, 2015). For example, Hall and Hord (2015) presented twelve principles of change that occur as organizations undergo transformation (see Table 3). Evidence of learning is evidence of change and, therefore, professional learning is the cornerstone to documenting systems change in education (Hall & Hord, 2015).

Table 3 *Twelve Principles of Change*

Principles of Change
1. Change is learning.
2. Change is a process, not an event.
3. The school is the primary organizational unit of change.
4. Organizations adopt change, individuals implement change.
5. Interventions are key to the success of the change process.
6. Appropriate interventions reduce resistance to change.
7. District and school-based leadership is essential to long-term change success.
8. Facilitating change is a team effort.
9. Mandates can work.
10. Both internal and external factors influence implementation success.
11. Adopting, implementing, and sustaining are different phases of the change process.
12. Focus on change is key.

Note. Adapted from *Implementing Change: Patterns, Principles and Potholes* (4th ed.) by G. E. Hall & S. M. Hord, New York: Pearson.

Complex change takes time, and close monitoring is required to effectively and efficiently keep the parts of the system in sync with the whole (West, 2000). Ambrose (1987) introduced a framework for managing complex change (see Figure 3). This model presents five critical components for successful change that can be used to both prepare for and evaluate complex change: (a) vision, (b) skills, (c) incentives, (d) resources, and (e) action plan. An examination of each component can result in clear action steps for managing complex change (Ambrose, 1987).

As indicated in Figure 3, a complex change initiative must have a clear vision, which provides a road map and creates a sense of direction for members of a community. A lack of a clear vision results in frustration for those affected by the complex change. Further, individuals must possess certain skills to participate in complex change and to reach the intended outcome. Individuals navigating complex change without the necessary skills experience anxiety. In

addition, participants who do not feel valued for their efforts will respond with resistance; therefore, individuals must have incentives to persevere a complex change initiative.

VISION	+	SKILLS	+	INCENTIVES	+	RESOURCES	+	ACTION PLAN	=	CHANGE
		SKILLS		INCENTIVES		RESOURCES		ACTION PLAN		CONFUSION
VISION				INCENTIVES		RESOURCES		ACTION PLAN		ANXIETY
VISION		SKILLS				RESOURCES		ACTION PLAN		RESISTANCE
VISION		SKILLS		INCENTIVES				ACTION PLAN		FRUSTRATION
VISION		SKILLS		INCENTIVES		RESOURCES				FALSE STARTS

Figure 3. Model of managing complex change. Adapted from *Managing Complex Change* by D. Ambrose, 1987, Pittsburgh, PA. Enterprise Group.

Moreover, adequate resources are critical for participants to effectively learn the new skill set required for complex change. Without resources, participants will express frustration. A complex change initiative must also include an action plan consisting of manageable tasks which are clearly articulated. Without a clear action plan focused on specific outcomes, participants may not be able to achieve the intended vision (Ambrose, 1987).

In applying systems change to education, researchers can use the managing complex change framework (Ambrose, 1987) and the change principles (Hall & Hord, 2015) to determine the strengths and weaknesses of individual systems change efforts and their impact on instructional practices (see Figure 4). Examining how SEAs use resources, including outside

agents, to meet the needs of students within low-performing schools may shed light on the organization of the SSOS tasked with improving outcomes for students with disabilities.

	Evidence for Principles of Change	Indicators of Poor Implementation
VISION +	• Understanding of change as a process, not an event • Understanding that change occurs in stages	CONFUSION
SKILLS +	• Change occurs as the result of a team effort • Learning is evidence of change	ANXIETY
INCENTIVES +	• Organization adopts a change, individuals implement change • Mandates can have immediate but not lasting impact	RESISTANCE
RESOURCES +	• Knowledge of interventions key to bringing about desired change are critical	FRUSTRATION
ACTION PLAN =	• School is primary unit of change • Leadership from all levels is essential • Internal and External issues addressed simultaneously	FALSE STARTS
CHANGE	• Clear evidence that the focus is on the desired change	

Figure 4. Evidence of complex change in education. Adapted from *Managing Complex Change* by D. Ambrose, 1987, Pittsburgh, PA: Enterprise Group; and *Implementing Change: Patterns, Principles and Potholes* (4th ed.) by G. E. Hall & S. M. Hord, New York: Pearson.

Significance

Literature on the impact of SSOS on performance among students with disabilities is limited (Klute, Cherasaro, & Apthorp, 2016; Massell, 1998; Reeves, 2003). Historically, research on state-level methods of cultivating systems to improve instruction has also been limited (Klute, Welp et al., 2016; Massell, 1998). Research indicates that standards and incentives may not suffice to facilitate change, and that capacity building may facilitate complex change (Massell, 1998; Reeves, 2003). Existing literature on SSOS, however, is largely descriptive and limited to overall school improvement (Klute, Welp et al., 2016). Further, effectiveness of an SSOS is largely based on progress on state assessments; however, given the

complex nature of SSOS, this singular measure may not provide the information needed to adjust mechanisms within the system to increase success. Thus, additional effectiveness measures are needed. Research on the role of outside agents in increasing the capacity for delivering instruction to students with disabilities may include an examination of practices and supports that positively impact academic achievement (Klute, Cherasaro, & Apthorp, 2016; Massell, 1998; Reeves, 2003).

Statewide System of Support for Students with Disabilities

Historically, attempts to reform public education in the United States have been unsuccessful for a variety of reasons (Glazer, 2009; McInerney & Hamilton, 2007). Current research identifies essential elements and potential barriers for successful implementation of the SSOS. These essential elements and barriers are aligned to the following areas of implementation: (a) focus of efforts, (b) methods of service delivery, and (c) evidence of organizational trust (see Figure 5; Airola et al., 2014; Becker, Koger, Sinclair, & Thacker, 2009; Davis, Krasnoff, Moilanen, Sather, & Kushman, 2007; Glazer, 2009; Hergert et al., 2009; Kinnamon, 2009; Lane et al., 2005; McInerney & Hamilton, 2007; Stein et al., 2015).

Framework for an Effective Statewide System of Support

It is important that states develop and implement SSOS using a standardized method (Kinnamon, 2009). Ensuring a balance between state and local priorities, the SEA should clearly delineate the goals of the SSOS and the process for providing support to schools (Airola et al., 2014; Glazer, 2009; Hergert et al., 2009).

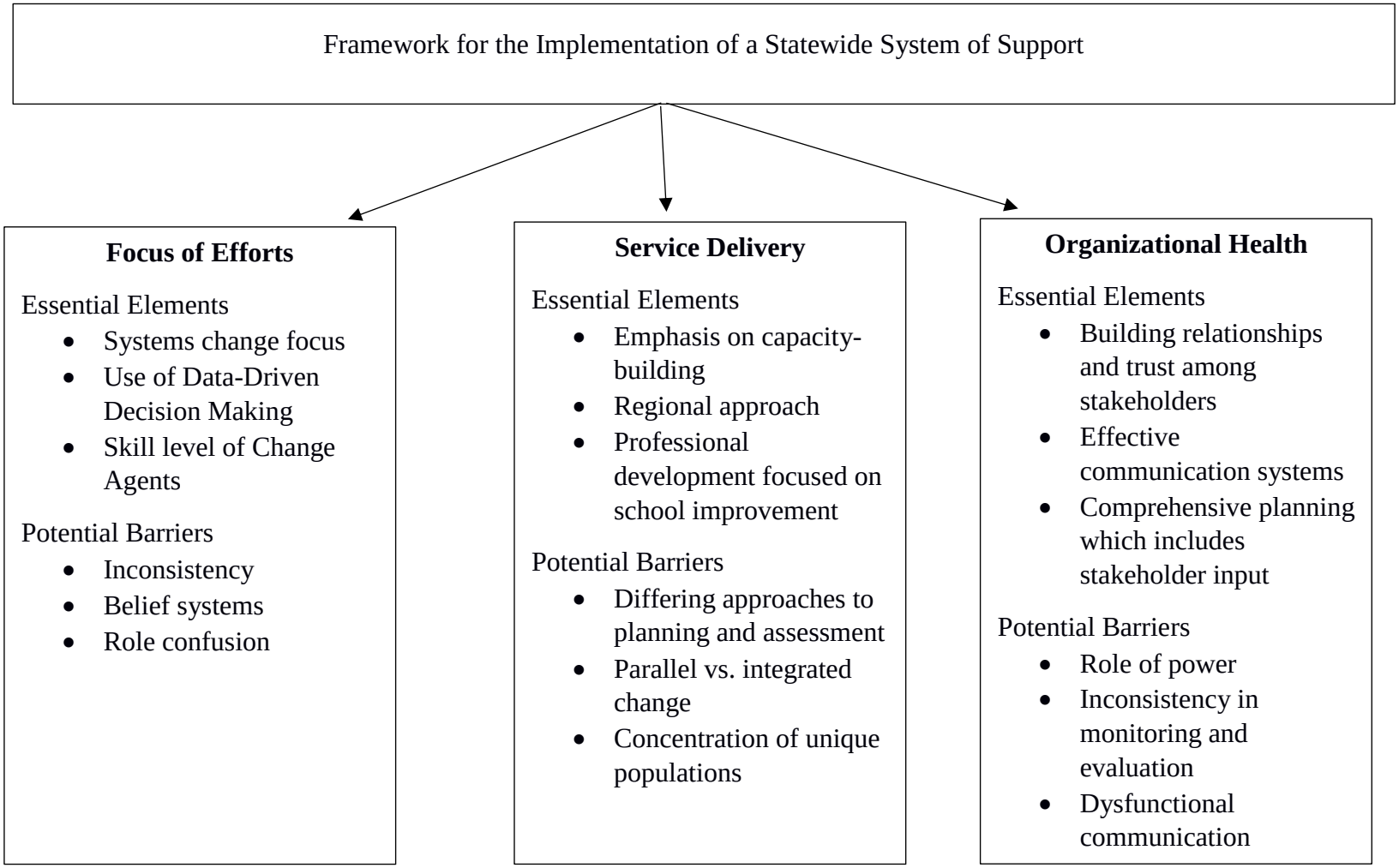

Figure 5. Framework for the implementation of a statewide system of support. Adapted from *Learning into a statewide system of support: New York State's Regional Network Strategy for School Improvement* by B. Lane, A. Seager, & S. Frankel, 2005.

However, designing a flexible system of support to address the needs of low-performing schools remains a challenge for states (Davis et al., 2007). With states assuming greater responsibility for school improvement, it is imperative to identify the components of existing state systems that positively impact academic performance.

Focus. SSOS provide only an infrastructure for implementing change efforts (Turnbull et al., 2011). Recognizing that effective change results from systems change, many aspects of the SSOS will be implemented at the same time across a school or district. Systems change is not a linear process (Airola et al., 2014; Nehring & O'Brien, 2012), and resulting evidence of change may be difficult to assess.

There is no single approach guaranteed to lead to effective change (Kinnamon, 2009). However, a lack of attention to the change process itself will result in failure (McInerney & Hamilton, 2007). System-wide efforts often include addressing the barriers to change: (a) staff turnover, (b) skill deficiencies, and (c) competing priorities between the state and local levels (Airola et al., 2014; Hergert et al., 2009; Stein et al., 2015; Turnbull et al., 2011). An effective systems change approach can be used to address barriers, including system issues, but the overall focus must be on school improvement (Glazer, 2009; Kinnamon, 2009).

Systems change. Systems change is a comprehensive approach that simultaneously addresses multiple needs within an organization, recognizing that organizational growth is not linear (Airola et al., 2014; Nehring & O'Brien, 2012). However, interventions designed and developed by an individual, or select few, often fail to address and incorporate local concerns (Glazer, 2009). Isolated change which focuses on a singular issue may not bring about the desired effect (Airola et al., 2014). Poor leadership and limited understanding of the systems change process will likely have a negative impact on any desired change (McInerney &

Hamilton, 2007; Nehring & O'Brien, 2012). Focusing on schools/districts plagued by internal system issues, such as chronic staff turnover and ineffective leadership, will present a challenge to any systems change effort (Glazer, 2009; Stein et al., 2015). Systems change in education focuses primarily on alignment, rigor, or intervention across a school or district (Airola et al., 2014). A comprehensive approach to change is, therefore, essential in adjusting educational paradigms (Airola et al., 2014; Elias & Leverett, 2011; Lane et al., 2005). Systems change must be focused on something which ultimately can be adjusted.

Use of data. Systems change approaches are effective when based on data-driven decision-making models that involve all stakeholders (i.e., parents, teachers, community members). Collecting and interpreting data relevant to a change effort is key to addressing any challenge (Kinnamon, 2009; Stein et al., 2015). Systems change, therefore, requires collaboration, communication, and problem solving from all participants (Bussey et al., 2014). Ignoring the local context, however, will impact the implementation of any intervention (Bussey et al., 2014; Glazer, 2009). Exploring the data using various problem-solving models focused on guiding teacher practice will increase the effectiveness of change efforts (Bussey et al., 2014; Vaganek, 2013).

Clear roles. Change efforts are not possible without buy-in from all participants (Stein et al., 2015). A key focus in change initiatives is determining clear roles for participants and how, as individuals, they may impact change efforts (Becker et al., 2009). Clarifying participants' contribution increases leadership among all who contribute to effectively create change (Airola et al., 2014). If individual participants are unclear about their role in the change process, effective change will be limited (Becker et al., 2009; Lane et al., 2005). Further, this confusion can lead to a misuse or misinterpretation of power among participants (Lane et al., 2005).

Service delivery. Effective and efficient service delivery is critical, since the systems change process can be time-consuming. Efforts to address isolated issues will likely result in failure to change the system (Glazer, 2009). A comprehensive systems change approach will include opportunities for professional development, to build the capacity of all participants to implement independent of the regional training and technical assistance system (Airola et al., 2014; Davis et al., 2007; Elias & Leverett, 2011; Hergert et al, 2009; Lane et al., 2005; Underwood, 2013). However, geography and population density can present a challenge to providing intensive professional development designed to build capacity (Becker et al., 2009; Hergert et al., 2009). Service delivery designed using a regional or geographic approach will, therefore, have a greater impact on the local system than a generic, statewide focus (Lane et al., 2005).

***Regional approach to services*.** Many states with existing systems have faced challenges with reorganization (Hergert et al., 2009). For example, Maine, Puerto Rico, and Vermont all include direct assistance to low-performing schools as part of their comprehensive system. Further, Connecticut, Massachusetts, and Rhode Island all provide support to low-performing schools with the greatest needs. New Hampshire and New York provide supports to both low-performing schools and districts (Hergert et al., 2009). Reorganization to adhere to the requirements of SSOSs, and to address the identified needs at the local level, created capacity issues and changes in levels of service for areas such as New York and Puerto Rico (Hergert et al., 2009).

Regional and local systems have a greater impact on systems change than larger, more cumbersome systems, such that resources and internal capacity can be intensively focused on specified needs at the local level (Lane et al., 2005). Without a regional approach, it can be

difficult to provide technical assistance tailored to the needs of specific schools (Becker et al., 2009). Many states implemented systems that initially focused on individual schools; this focus later shifted to the district level, as more schools became eligible for support and services (Hergert et al., 2009). For many states, work is now conducted across regions, and a regional approach is the primary approach of service delivery (Airola et al., 2014; Hergert et al., 2009, Kinnamon, 2009).

Capacity building. SEAs reported a lack of capacity (i.e., staffing and resources) as a barrier to providing technical assistance through SSOS (Hergert et al., 2009; Lane et al., 2005). Technical assistance under the SSOS is focused on building the capacity of stakeholders at the district level, such that additional support is not needed, and such that key participants possess the knowledge to sustain the change effort (Hergert et al., 2009). Regional approaches to service delivery are more likely to build capacity at the local level by integrating new understanding into existing local mandates (Elias & Leverett, 2011; Lane et al., 2005). Building on effective school partnerships, data-driven systems change efforts should be designed to increase the capacity of participants (Bussey et al., 2014; Underwood, 2013). A lack of attention to building capacity can result in ineffective systems change (McInerney & Hamilton, 2007).

Professional development. Professional development is essential to equip key participants with the knowledge and understanding necessary to sustain systems change efforts (Airola et al., 2014; Davis et al., 2007; Elias & Leverett, 2011; Hergert et al, 2009; Lane et al., 2005; Underwood, 2013). Professional development is the foundation for systems change efforts, and change in professional practice is evidence of systems change (Airola et al., 2014; Glazer, 2009; Hall & Hord, 2015). Professional development focuses on curriculum content

(i.e., math and reading), and instructional practice addresses the lack of local capacity while keeping the focus on school improvement (Davis et al., 2007; Glazer, 2009).

Organizational health. The capacity of a school or district to respond to systems change efforts is deeply rooted in organizational health (Kinnamon, 2009). *Organizational health* refers to the presence of effective leadership, positive culture, and trust among staff, students, and the community (Kinnamon, 2009; Lane et al., 2005). Organizational health impacts communication systems within an organization and shapes how relationships among participants develop (Becker et al., 2009; Kinnamon, 2009; Lane et al., 2005).

Building relationships. Implementing any change effort requires a team approach to facilitate buy-in from those expected to change (Kinnamon, 2009; Lane et al., 2005). Effective collaboration within a team promotes internal consistency, which leads to effective change (Lane et al., 2005; Spruill, 2017). The key to successful systems change is, therefore, building relationships among all stakeholders (Glazer, 2009; Vaganek, 2013).

Communication systems. Transparent, documented communication systems prevent confusion, which can easily result from multiple efforts being conducted simultaneously (Hergert et al., 2009). Effective communication focuses on specifying shared goals through collaboration and commitment to change (Spruill, 2017). The focus on improvement must be intentional and comprehensive, which requires organized teamwork (Kinnamon, 2009).

Comprehensive planning. Planning for systems change must involve a clear, unified vision (Airola et al., 2014). First, securing input and commitment from relevant stakeholders is key to success (Stein et al., 2015). In addition, utilizing a problem-solving, data-driven process in planning limits the scope of change efforts, thereby increasing their consistency (Hergert et al., 2009).

Improving Outcomes for Students with Disabilities

A challenge to both the implementation of SSOS and the evaluation of the impact on student achievement is the presence of unique population challenges (Becker et al., 2009; Davis et al., 2007; Stein et al., 2015). Schools eligible for the highest levels of support also have the highest percentages of students with academic risk factors such as poverty and disability status (Airola et al., 2014). High percentages of students with disabilities and students in other vulnerable subgroups (see Table 1) create challenges for schools/districts focusing on school improvement (Davis et al., 2007). The need to align, coordinate, and focus supports to meet the needs of vulnerable populations continues to be a challenge in the process of effective systems change (Becker et al., 2009).

Capacity of the SEA. The capacity of an individual SEA, or school district, to provide technical assistance impacts the services that can be provided locally to support change efforts (Hergert, et al., 2009). Lack of capacity is a significant challenge in densely populated and large geographic regions (Hergert et al., 2009). Limited capacity at state and local levels may require the use of outside agents, or of consultants with specific expertise, to address the needs of a school or district (Hergert et al., 2009; Nehring & O'Brien, 2012). Large-scale systems change efforts across districts will, therefore, not be successful without the use of outside agents (Elias & Leverett, 2011).

Use of outside agents. Within established SSOS, there has been a positive response to the use of outside agents (Kinnamon, 2009). Due to their specific expertise and background knowledge, outside agents are beneficial in advocating for the use of research-based practices and informed decision making (Kinnamon, 2009; Nehring & O'Brien, 2012). An outside agent's success or failure is influenced both by their level of individual expertise and by the relationship

between the outside agent and the system undergoing change (Davis et al., 2007; Kinnamon, 2009; McInerney & Hamilton, 2007; Spruill, 2017). Change occurs when outside support complements district support and when both outside agents and the district are focused on capacity-building efforts (McInerney & Hamilton, 2007).

Research indicates that these relationships have the greatest influence on the success of a systems change effort (see Figure 5; McInerney & Hamilton, 2007; Spruill, 2017; Underwood, 2013). Effective outside agents blend content and process expertise while effectively using interpersonal skills to manage relationships with the district (Bussey et al., 2014). Efforts should be made to clearly articulate the purpose of using outside agents and to reduce any ambiguity regarding their role (Airola et al., 2014). Although the use of outside agents is often highly effective, there is room for continued growth to maximize the effectiveness of systemic change (Kinnamon, 2009; Nehring & O'Brien, 2012).

Evidence of Change. *The National Evaluation of the Comprehensive Technical Assistance Centers: Final Report* (Turnbull et al., 2011) largely focused on the perception of individuals receiving technical assistance but offered a comprehensive look at how twenty-one regional centers provided support. The evaluation report included three measures of outside technical assistance: (a) quality of technical assistance, (b) relevance of technical assistance to the local context, and (c) usefulness of assistance (Turnbull et al., 2011). This longitudinal, large-scale study did not indicate how the support and services of the centers change practices in the field (Turnbull et al., 2011).

Conceptual Framework for Evaluating Change Efforts

The results of this systematic literature review provided a framework that could be used to evaluate the impact of outside agents. The needs of a district, or school, should be addressed

on an individual basis, building on local capacity needs to successfully produce change. The existing literature indicates three areas of focus for evaluating outside agent interventions: (a) focus of efforts, (b) skillset of the outside agent, and (c) the organizational health of the district/school.

Building on the research of Bussey et al. (2014), a system of evaluation for the impact of outside agents can be compiled. For example, outside agents need to have extensive content and process knowledge (Bussey et al., 2014). In addition, outside agents must be able to construct and maintain positive relationships to facilitate the change process. Barriers to implementation of a systems change effort include internal issues of organizational trust and/or a mismatch between the focus and desired outcome of an intervention. The use of outside agents in providing technical assistance to schools is not a clear-cut process, and more research is needed to identify how outside agents impact instructional practices (see Figure 6).

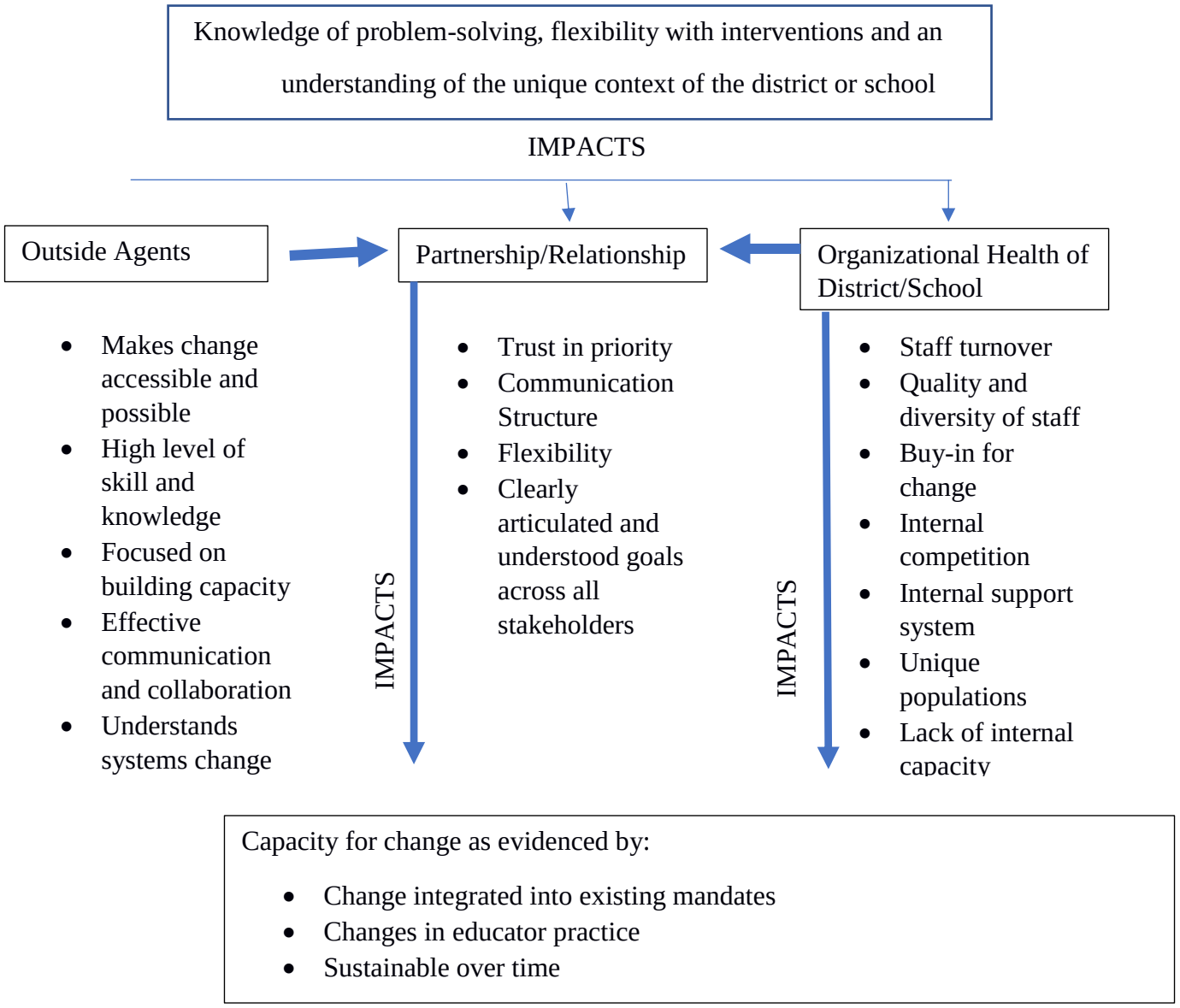

Figure 6. Factors that influence the impact of change agents in education. Adapted from "Effective Consultants: A Conceptual Framework for helping school Systems Achieve Systemic Reform" by L. H. Bussey, J. C. Welch, & M. B. Mohammed, 2014, *School Leadership and Management, 34*, p.

Summary of the Literature

Current research demonstrates a need to develop procedures to evaluate the effectiveness of outside agents on systems change initiatives (Spruill, 2017; Turnbull, et al, 2011). The work of outside agents could be judged by: (a) focus of efforts and quality of service delivery, (b) skill set of the outside agent in matching interventions to identified needs, and (c) the organizational

health of the district/school (Bussey et al., 2014; Turnbull et al., 2011). In addition, the aim of the SSOS is to improve education systems, such that student outcomes are also improved (Turnbull et al., 2011). The use of strong outside agents can produce change in weak systems (Turnbull et al., 2011), but the long-term effect of using outside agents to support change efforts is unclear (Nehring & O'Brien, 2012). Districts and schools identified as needing assistance likely have limits of internal capacity, which impact change efforts (Glazer, 2009). Therefore, change agents directing plans for improvement from outside the organization will not find success unless they align the required change to local priorities (Elias & Leverett, 2011). When outside agents can align with local priorities and build capacity utilizing a systems change approach, change is likely to occur (McInerney & Hamilton, 2007; Spruill, 2017). More research is needed to evaluate and improve the use of outside agents in improving instructional practices (Bussey et al., 2014).

Chapter III

Methodology

A systematic review of the literature surrounding the use of outside agents to improve instructional practices for students with disabilities suggests that using outside agents can result in positive changes in teacher practice. Change can occur when supports from outside agents are collaborative, flexible, and focused on capacity-building (McInerney & Hamilton, 2007). While the research indicates that the use of outside agents can be highly effective (Kinnamon, 2009; Nehring & O'Brien, 2012), developing tools to measure the efficacy of outside agents continues to be a need (Spruill, 2017; Turnbull et al., 2011).

Statement of Purpose

No Child Left Behind (2001) established requirements for the creation of statewide systems of supports (SSOS) aimed at improving academic achievement for specific student subgroups, including students with disabilities (see Table 1 on page 3). This research aims to examine how a mid-sized state's implementation of the federal requirement for establishing the SSOS—which involves incorporating an existing regional training and technical assistance system—has influenced teacher practices. The work of the regional system is complex and involves meeting needs at the classroom, school, and district levels. For this reason, evaluating the influence of the regional system is challenging (Duchnowski, Kutash, & Oliveira, 2004). Identifying specific processes which have resulted in improved instructional practices for students with disabilities is essential to measuring the overall impact of this facet of the SSOS.

Thus, the purpose of this research is to examine changes in teacher practices resulting from the incorporation of an existing regional system providing supports to improve special education service delivery.

Research Questions

In 2012, as part of the requirement of establishing a SSOS, the participating state enlisted an existing regional training and technical assistance system of support to address the needs of students with disabilities within low-performing schools. The following research questions focused on the period following the implementation of the state's reorganization of the SSOS (July 2013–June 2016), but prior to the passage and implementation of the Every Student Succeeds Act of 2015 (ESSA, 2015).

Research Question 1 (Quantitative)

Across the statewide, regionally-based training-and-technical-assistance system,

1a. what types of professionals are requesting services (i.e., teachers, administrators, paraprofessionals);

1b. what types of supports and services have been requested (i.e., consultations, meetings, library services); and

1c. what focus areas for support and services have been requested (i.e., assessment, collaboration, reading)?

Research Question 2 (Quantitative)

As demonstrated by official requests for service,

2a. how did demands for requests for services change over time (2013–2016), when controlling for district size and special education population density; and

2b. which school districts maintained a relationship (as defined by three or more contacts in a calendar year) by requesting and receiving services from their regional technical assistance service provider during the 3-year study period (2013–2016)?

Research Question 3 (Quantitative)

Across the statewide, regionally-based training-and-technical-assistance system, how do educational professionals (i.e., teachers, administrators, paraprofessionals) perceive:

3a. the influence of the skills of regional technical assistance center specialists on the change process; and

3b. the influence of the district's organizational health in implementing changes to instructional practices for students with disabilities; and

3c. the role of regional technical assistance center specialists in building a relationship between the regional training and technical assistance system and personnel in the individual district/school?

Research Question 4 (Qualitative)

Across the statewide, regionally-based training-and-technical-assistance system, how do educational professionals (i.e., teachers, administrators, paraprofessionals) perceive:

4a. the influence of support and services by regional technical assistance center providers on whether changes instructional practices occurred for students with disabilities; and

4b. what specific changes to instructional practices occurred as a result of supports and services provided by their regional center?

Research Question 5 (Mixed Method)

Across the statewide, regionally-based training-and-technical-assistance system, what common elements of support and services do educational professionals (i.e., teachers,

administrators, paraprofessionals) perceive to facilitate positive changes in instructional practices for students with disabilities?

Study Design

Mixed-methods research involves the intentional blending of both quantitative and qualitative data collection and analysis to deepen one's understanding of a phenomenon (Creswell & Plano-Clark, 2011). Mixed-method studies are useful when the collection of quantitative or qualitative data in isolation will not adequately address the proposed research questions (Creswell & Plano-Clark, 2011; McMillan, 2012). The use of mixed-methods design and analysis is particularly beneficial when studying parts of a group which may offer differing outcomes to the proposed research questions (McMillan, 2012). Using mixed-methods analysis allows the researcher to study the outcomes of an outlying group in a meaningful way (McMillan, 2012).

Summary of Phases

This mixed-methods study used an explanatory-sequential design, *quan + quan → Qual = explain results*, with five phases of analysis (Creswell & Plano-Clark, 2011). First, secondary data analysis was used in Phase I to identify a purposive sampling for quantitative and qualitative data collection in Phase II (Creswell & Plano-Clark, 2011). With permission from the State Education Agency (SEA), a secondary data analysis of requests for service collected during the study period (July 2013–June 2016) was completed in Phase I. The secondary data analysis served two outcomes: (a) To compile a descriptive snapshot of (i) the types of professionals who are requesting services, (ii) the types of services are requested, and (iii) the content areas of services requested; and (b) to identify districts that maintained a relationship (evidence of requesting and receiving supports and services) with the regional technical assistance providers

after the SEA directive in 2012, across the regional systems during the study period (July 2013–June 2016).

Phase II focused on the distribution of an online survey to personnel who had had three or more contacts with their assigned regional training and technical assistance center, within districts identified in the purposive sample, during the 2016–2017 school year (AUCD, 2018). Specialists at each regional center were asked to send an e-mail with a link to an online survey, which included basic demographic questions, a rating of personal belief statements, and open-ended survey narrative responses based on the Most Significant Change Technique (see Appendix B; Dart & Davies, 2003). Once collected, third-party independent data anonymizers used demographic responses in Section 1 to eliminate samples collected from outside the purposive sample identified (Appendix B). Subsequently, the remaining data were separated into two distinct collections – quantitative and qualitative. All quantitative data collected was used as a statewide sample. The purposive sample identified in Phase I consisted of three districts in each of the eight regions, for a total of 24 districts. In sampling 24 districts, it was unknown how many complete qualitative samples would be submitted. The goal was to use eight to ten complete narrative samples, or stories, per region in a statewide composite analysis (n = 64 to 80). If the survey provided fewer than 10 qualitative samples in a region, all anonymized, completed samples were used in the analysis, and the partial samples were noted in the limitations. If a region's sample resulted in more than 10 samples, 10 samples were randomly drawn from the surveys collected. Third-party independent data anonymizers redacted any information that may have identified the district or school from the qualitative samples. Specialists at each regional center identified the number of invitations extended, and actual responses, by region, were used to determine response rate by region and state sample.

Phase III consisted of quantitative data analysis. The third section of the survey asked three non-identifying demographic questions and requested a Likert scale response to 10 belief statements. The projected quantitative data collected by the survey were not expected to fall within a normal distribution. Respondents for participation were identified through a purposive sampling technique designed to achieve a concentrated sample of educational professionals who have accessed the regional system, which was not likely to be normally distributed. Hence, the use of non-parametric tests was proposed, and potential tests were explored in the data analysis plan. The quantitative data analysis focused on the associations and relationships between multi-modal, ordinal, and continuous data.

Phase IV consisted of qualitative data analysis using the 8 to 10 stories (n = 64 to 80) submitted by each region in Phase II. Narratives of Change, a qualitative analysis technique, was used to identify the supports and services which may have resulted in changing teacher practices (Bau, 2016). This approach used two layers of analysis by applying provisional and theoretical coding sequentially.

Phase V consisted of a mixed-methods analysis of all quantitative and qualitative data collected, resulting in the identification of characteristics of supports offered by the regional training and technical assistance center personnel that were perceived as resulting in a positive change in teacher practices for students with disabilities (Onwuegbuzie & Johnson, 2006).

Instrumentation

Study Sample

In 2012, as part of the requirement for establishing a SSOS, the participating state enlisted an existing regional system of supports to address the needs of students with disabilities within low-performing schools. The sample for this study included educational professionals

working for districts that received supports and services during the study period (July 2013–June 2016) across all eight geographic regions.

Using a two-level growth model which controls for district size (total population) and concentration of special education (December 1 Child Count), the top three districts receiving supports and services during the study period were identified for each region. Regional system specialists were asked to invite educational professionals who, while working for one of these districts, had requested and received a minimum of three contacts during the 2016–2017 school year (AUCD, 2018).

Secondary Data Analysis

Description of the secondary database. The established regional system was university-based and was tasked with collecting data on the supports and services provided across eight regions. Each regional center uploaded data collected from a request-for-service data collection tool. Each of the eight regional centers contributed to the database in partnership with a third party data management company. A small number of trained individuals in each region was responsible for entering data, and the number of individuals who had access to the entire database was limited. The database could be accessed online via a secure, password-protected platform that was not publicly available.

Measures. Data were reported by specialists at each regional center for entry into the statewide database through the completion of the request for service data collection tool (Appendix A). Three categories of data were used from the official database in this analysis: (a) service provider title, (b) service delivery method, and (c) content area of focus (see Appendix A). Each individual request for service may have resulted in multiple service providers, types of services delivered, and areas of focus.

Service provider type. The service provider type indicated the role of the educational professional receiving supports and services. There was a total of twenty response options, nineteen indicating specific roles and one option of "Other." Service provider types were reported by category as aggregate, not individual, counts.

Service delivery method. The service delivery method indicated the setting and intensity of supports and services being provided. There was a total of 15 response options, with no option of "Other." Service delivery methods were reported by both category and total number of requests in both count and aggregate form. District totals for total services delivered for each school year (July 2013–June 2016) were used to determine which districts had maintained a relationship with the regional system during the study period.

Content area of focus. The content area of focus indicated the nature of the educational supports and services being requested. There was a total of 30 response options, 29 indicating specific roles, and one option of "Other." Content areas of focus were reported by category as aggregate, not individual, counts.

Survey Instrument

A survey instrument was developed and administered in Phase II. It was essential to this research that responses be collected from consumers who were working in districts where they individually received supports and services, during the study period, from the regional training and technical assistance provider. Educational professionals invited to participate had a current, sustained relationship with those consumers, as demonstrated by three or more contacts during the 2016–2017 school year (AUCD, 2018). Allowing participants to respond anonymously using an online survey link increased both the validity and reliability of the data responses (Fowler, 2014).

The focus of this survey was: (a) to verify that respondents were individuals who received supports and services within the identified purposive sample population (Patton, 2001; Som, 1996); (b) to summarize the education professionals' (i.e., teachers, administrators, paraprofessionals) perceptions regarding regional service providers' skills and knowledge, the impact of relationships on creating change, especially given the presence of local barriers that may impact change efforts; and (c) to summarize the perception of changes resulting from supports and services delivered by regional training and technical assistance personnel, and why these changes may or may not have occurred.

Survey design. The online survey instrument consisted of a mixture of closed and open-ended responses and was be delivered via an e-mail requesting participation (Andres, 2012). Anonymous responses that were self-administered were best at collecting sensitive data, since the respondent did not have to publicly declare a negative response, as would have been the case in an interview-style survey (Andres, 2012; Fowler, 2014). Prompts requiring responses considered to be sensitive, such as rating a belief statement or responding in narrative form, were best obtained without interviewer interference (Fowler, 2014). To maintain respondent anonymity, all responses were anonymized by independent, third-party anonymizers prior to analysis. Quantitative and qualitative data were analyzed as separate data sets prior to mixed-methods analysis.

Survey instrument. The online survey instrument consisted of five sections: (a) consent to participate, (b) background questions to affirm membership in the purposive sample identified in Phase I, (c) demographic and response to belief statements, (d) open-ended, narrative response, and (e) notification of completion (see Appendix B; Andres, 2012). Consent had to be granted for participants to enter the survey instrument. Participation was voluntary, and

declining participation resulted in notification of completion. Three respondent qualifier questions were used in Section 2 to validate that responses had been collected from the intended purposive sample identified in Phase I (Som, 1996). The third section of the survey instrument consisted of three demographic questions and a belief statement response and used a Likert scale to evaluate the factors influencing the impact of change agents in education, presented in Chapter 2 (Andres, 2012; Som, 1996). The fourth section of the instrument consisted of four open-ended, narrative response questions to evaluate the perception of change as a result of the outside agent (Andres, 2012; Som, 1996).

There was no way to predict which districts and staff would be identified as part of the purposive sample. Thus, to protect the integrity of the study sample, an expert pilot study was conducted, consisting of three layers of review. First, the statewide leadership team for the regional technical assistance system was asked to provide feedback on the proposed study implementation. Second, an established, systems change expert (Hall & Hord, 2003) was asked to review the survey instrument and to provide feedback on both its contents and implementation. Finally, the survey was piloted with individuals who previously worked for the regional system as specialists delivering technical assistance, to generate feedback on the survey instrument (Andres, 2012; Groves, et al., 2004; Som 1996).

Sampling procedure. Purposive sampling allows a researcher to focus on a subset of interest to answer a specific research question while reducing common errors in survey administration (Dillman, Smyth, & Christian, 2014; Fowler, 2014; Patton, 2001). In this study, the subset of interest for analysis included education professionals receiving three or more contacts for supports and services from the regional system provider during the 2016–2017 school year who were working within districts which had maintained a relationship (as

evidenced by requests for supports and services) with the regional system provider during the study period (July 2013–June 2016).

Invitation to participate. Specialists from each regional center who had fulfilled requests for services for consumers within districts identified in the purposive sample (n = 24) were asked to send an e-mail containing a link to the survey (Appendix B) to individuals who had received three or more contacts from supports and services (AUCD, 2018) during the 2016–2017 school year. Since a portion of the survey was open-ended by design, it was important that participants be able to draw upon recent experience when responding (Fowler, 2014; Som 1996). Invitations to participate were sent to education professionals within the purposive sample who had received supports and services during the 2016–2017 school year. Participation by regional specialists was voluntary; specialists who opted out were noted in the Limitations section.

To protect participant anonymity, invitations were delivered directly from specialists providing supports and services to education professionals; no identifying information was shared by specialists with the researcher. As noted, participation was voluntary, a condition that was emphasized in all forms of contact between the researcher, specialists, and invited participants. To determine a response rate, specialists identified the total number of individuals invited to participate by region; no identifying information was collected (Fowler, 2014). Educational professionals who were sent a link to the survey had 21 days to respond. During this twenty-one-day period, they received a total of three e-mails (one per week) requesting participation (Dillman, Christian, & Smyth, 2014). Once they had participated, or if they elected not to participate, they were directed to disregard future e-mails. A draft of an introductory e-mail and reminder e-mails were provided for regional specialists to use when inviting participants.

Data anonymizers. After the data collection period closed, third-party data anonymizers organized the data for analysis. Both third-party anonymizers were retired faculty from a Research 1 institution, as ranked in research activity by Carnegie Classification of Institutions of Higher Education (2016). Such retired faculty are familiar with data integrity measures and program evaluation. Responses on demographic questions in Section 1 of the survey (Appendix B) were used by the third-party anonymizers to eliminate responses from outside the purposive sample. Data anonymizers separated the quantitative and qualitative data in Sections 2 and 3 prior to analysis. The entire quantitative data set was used for a statewide analysis.

Qualitative sample. An estimated 10 qualitative samples were used, per region, resulting in 64 to 80 samples for a statewide composite analysis. If a region submitted fewer than 10 samples, all completed samples were used in the analysis, with significant deficiencies noted in the Limitations section. If, on the other hand, a region submitted more than 10 samples, a blind sample of 10 responses was identified by the process of random selection (Andres, 2012; Som, 1996). Prior to qualitative analysis, references to specific people, schools, and communities, as well as demographic information from the stories were removed by third-party anonymizers.

Response rates. It was not possible to predetermine appropriate response rates, since the number of individuals who fell in the identified subset variety by district. Once regional specialists invited education professionals to participate, the specialists reported the total number of invitations sent. The sample population, compared with actual response rates, determined the evidence of sampling errors (Fowler, 2014). Sampling errors were evidence of variations of responses directly caused by the population sampled (Fowler, 2014; Som, 1996). Actual

statewide response rates, including a breakdown of regional response rates, was determined after data collection ended and was, where necessary, addressed as a limitation (Fowler, 2014).

Data Analysis Plan

Secondary Data Analysis

The secondary data analysis yielded two products. The first product was a descriptive summary of each region's official requests for service, and a statewide composite summary for requests occurring during the study period (July 2013–June 2016). Descriptive summaries included the percentage of requests for services, not aggregate counts, to ensure each regional provider's anonymity. Summaries included the total number of requests for (a) supports and services provided, (b) provider type, (c) service type, and (d) content area focus.

The second product was the identification of three districts per region to be used as a purposive sample. The data collected by the regional system and used for this analysis were representative of services provided over time (2013–2016) within a location (district). The data have been presented as nested, with analysis focused on change in services provided over time (Field, 2013). A two-level generalized growth model with a Poisson link function interpreted the count data nested within each district and controlled for the variation in district size (total student population) and intensity of the special education population (December 1 Child Count). A two-level growth model (Field, 2013) allowed the researcher to determine change over time when data did not meet the assumption of homogeneity, or when portions of the data were incomplete (Field, 2013). In a two-level model, intercepts and slopes can be random or fixed; in this study, random intercepts and slopes were used, allowing for the variability which exists across the regional centers (Field, 2013). This model allowed for the identification of the top three districts per region likely to continue in requesting supports and services for the 2016-2017 school year.

Raudenbush and Bryk's (2002) two-level growth model used is represented as:

$$\gamma_{ti} = \beta_{0i} + \beta_{1i}(TIME) + e_{ti}$$

$$+\delta_{02}(DENSITY) + \mu_{0i}$$
$$\beta_{0i} = \delta_{00} + \delta_{01}$$

$$+\delta_{21}(DENSITY) + \mu_{1i}$$
$$\beta_{1i} = \delta_{10} + \delta_{11}$$

$$ti$$
$$[DENSITY] + e$$
$$\delta_{10} + \delta_{11}(+\delta_{21}(DENSITY) + \mu_{1i}][TIME]$$
$$+\delta_{02}(DENSITY) + \mu_{0i} + CombinedModel: \delta_{00} + \delta_{01}$$

$$i = individualdivision; t = point \in time$$

Using the results of the two-level growth model, marginal predications (Raudenbush & Bryk, 2002) were used to identify the top three districts in each region that maintained a relationship with their regional provider during the study period (2013–2016). The top three districts across the eight regions (n = 24) were used as the purposive sample in Phase II.

Quantitative Analysis

The quantitative portion of the survey explored the factors that impacted the framework on the influence of outside agents, adapted from Bussey and colleagues (2014). Participants were asked to respond to three demographic questions and to respond to ten belief statements regarding their interactions with personnel from their assigned regional center. Potential participants from 24 districts, representing a purposive sample of statewide recipients of training and technical assistance, were invited to participate by specialists in regional centers from whom they had received supports.

Due to the structure of the survey instrument and identification of the study sample, the data collected were not expected to follow a normal distribution. As such, non-parametric tests

were used in this analysis (Field, 2013). Two different non-parametric analyses have been applied to the data sample:

1. Chi square test of independence: Used to determine the relationship between the purposive sample and the actual sample collected.
2. Wilcox two sample test: Used to compare Likert responses for all continuous survey variables.

Qualitative Analysis

In applying the adapted framework for managing complex change (Ambrose, 1987; Hall & Hord, 2003), participant responses were analyzed to determine the perception of change having occurred, and to understand how the change process facilitates alterations in teacher practice. The results of this qualitative analysis determined the consumers' perceptions of the impact of supports and services provided by the regional training and technical assistance system, and whether the supports and services resulted in perceived changes in teacher practice.

The stories of change collected by the survey were analyzed using two layers of qualitative analysis, provisional coding and theoretical coding (Saldana, 2016). *Provisional coding* involved the utilization of a predetermined set of codes, established prior to data collection, which were expected to be present during analysis (Saldana, 2016). *A Priori* codes—identified from the conceptual frameworks for change agents, high-leverage practices in special education, and systems change theory—were applied to identify each specialist's skills and focus (see Table 4 page 59) (Bussey, Welch, & Mohammed, 2014; Hall & Hord, 2015; McLeskey et al., 2017; Miles, Saxl, & Lieberman, 1991).

Theoretical coding was used as a secondary layer of analysis to address the presence of a specific phenomenon; in this case, evidence of change. In the application of theoretical coding,

the data were evaluated through the lens Hall and Hord's (2015) stages of concern (SoC; see Table 5 page 59). Use of SoC to analyze individual responses allowed for the identification of how the implementation of supports and services impacted teacher practice by determining the category of concern expressed in each response: (a) unconcerned, (b) informational, (c) personal, (d) management, (e) consequence, (f) collaboration, or (g) refocusing (Hall & Hord, 2015). The research base for SoC indicates how to identify change occurring as the result of appropriate interventions (regional center supports and services) with time allowed for processing and implementation. Combined with effective leadership and facilitation of the intervention, implementation has led to advancement through the SoC. Once in the impact stages, (consequence, collaboration and refocusing), there was evidence of a mindset focused on the impact of an intervention on both teacher practice and student outcomes (Hall & Hord, 2015).

Table 4 *A Priori Codes Used for Provisional Coding*

	A Priori codes for provisional coding	Key Skills for Outside Agents (Miles et al.,1991)	Evidence of complex change in education (Ambrose, 1987; Hall & Hord, 2003)	High Leverage Practices (McLeskey et al., 2017)
Outside Agents	Focus of Professional Development	✓	✓	✓
	Demonstrated Professional Experience	✓		✓
	Demonstrated Professional Knowledge	✓		✓
	Organized	✓		✓
	Knowledge of Interventions	✓	✓	✓
	Knowledge of Change Process		✓	
	Clear, Organized Communication		✓	✓
Relationships	Ability to Relate to Others	✓		
	Understanding of Group Dynamics	✓	✓	
	Initiates Relationship	✓		
	Supportive	✓		
	Conflict Management/Mediation Skills	✓		
	Works Collaboratively	✓	✓	
Organizational Trust	Knowledgeable about Resources	✓		
	Collaborative Approach to Change		✓	✓
	Evidence of Leadership		✓	
	Clear, focused goals		✓	✓

	Comprehensive Approach to Change	✓

Note. Adapted from *Managing Complex Change* by D. Ambrose, 1987, Pittsburgh, PA: Enterprise Group; *Implementing Change: Patterns, Principles and Potholes* (4th ed.) by G. E. Hall, & S. M. Hord, 2015, New York, NY: Pearson; *High-Leverage Practices in Special Education* by J. McLeskey, M. Barringer, B. Billingsley, M. Brownell, D. Jackson, M. Kennedy, . . . D. Ziegler, 2017, Arlington, VA: Council for Exceptional Children and CEEDAR Center; and "What Skills Do Educational 'Change Agents' Need? An Empirical View" by Miles et al., 1991, *Curriculum Inquiry, 18*, 157–193.

Table 5

Determining Evidence of Change

Stage	Score	Stage of Concern	Evidence of Concern in Narrative Response
Impact	6	Refocusing	"I have some ideas about something that would work even better."
	5	Collaboration	"I am concerned about relating what I am doing with what my co-workers are doing."
	4	Consequence	"How is my use affecting clients?"
Task	3	Management	"I seem to be spending all of my time getting materials ready."
Self	2	Personal	"How will using it affect me?"
	1	Informational	"I would like to know more about it."
Unrelated	0	Unconcerned	"I am concerned about other things."

Note. Adapted from *Implementing change: Patterns, principles and potholes* (4th ed.) by G. E. Hall & S. M. Hord, 2015, New York, NY: Pearson.

Mixed-Methods Analysis

In this study, a secondary data analysis was conducted using a survey instrument to determine the parameters for data collection. A survey instrument was employed to collect both quantitative and qualitative data to be analyzed independently. In Phase V of this study, qualitative and quantitative data collected via the survey instrument were used as part of an integrated analysis. The focus of this analysis was to identify how the quantitative results explained the qualitative results, and vice versa (Creswell & Plano-Clark, 2011). The goal of this integrated analysis was to identify the common elements of supports and services that educational professionals perceived as facilitating positive changes in instructional practices for students with disabilities.

Reliability and Validity

Secondary data analysis. Data were generated by specialists working in the field to fulfill requests for supports and services. Individuals submitting data were subject to inexperience, error, and turnover, all of which affected the quality of data collection. Actual entry of data to this database was tasked to a small number of trained individuals who ensured the accuracy and completeness of each entry. With some categories of data in the database (disability category), database managers had expressed concern regarding the interpretation of these data. As a result, some categories were not used in the analysis. These concerns were addressed as limitations to this study.

Survey instrument. In identifying a purposive sample, resulting data were collected from individuals working in districts that had received sustained supports during the study period (July 2013–June 2016) and had received three or more requested services during the 2016–2017 school year (AUCD, 2018). Ensuring that participants had the requisite knowledge and

experience to respond to the survey instrument increased the reliability and validity of data collection (Andres, 2012; Som, 1996). Since this survey was distributed via an e-mail invitation which could be shared outside the purposive sample, the first section of the survey was used as a final check to ensure that respondents were from the targeted sample group (Som, 1996).

Trustworthiness

As a participant observer, the researcher had to take steps to guard the anonymity of the participants—both the regional center staff and the educational professionals. If data responses should have been required of educational professionals with whom the researcher provided supports and services, a suitable proxy was used. Third-party anonymizers de-identified all data prior to the analysis of submitted responses.

Participant responses for this research were screened using a three-step process: (a) they were working in a district identified in Phase I, (b) they were invited to participate by regional specialists with a history of providing three or more contacts of service during the last full school year (2016–2017), and (c) they had successfully completed Section 2 of the survey, which screened for inclusion criteria. This approach was designed to increase the validity and reliability of data collection (Andres, 2012; Som, 1996). In addition to screening participant responses, participation in the survey was voluntary, and consent could be withdrawn at any time during the survey. Only complete qualitative responses were used in the analysis.

Role of the Researcher

With SEA permission to use confidential, statewide data, the researcher was responsible for maintaining the anonymity of both the regional training and technical assistance center personnel and the survey participants. In reporting data collected by the statewide training and technical assistance system, only averages publicly reported as aggregate counts could be used to

identify individual centers or personnel. All data collected were anonymized by two, third-party researchers prior to analysis.

Participation in the survey was requested by specialists having provided three or more supports and services during the 2016–2017 school year. To maintain anonymity, the researcher did not collect identifying information from respondents or regional system personnel. Third-party anonymizers used information from Section 1 to exclude responses from outside the study sample. Demographic data were separated from data used for analysis and held in a secure, password-protected file. The researcher was responsible for maintaining the anonymity of both the regional system personnel and the survey participants.

Potential Ethical Issues

As a participant observer, the researcher was uniquely armed with the contextual knowledge of the organization under study (Guest, Nancy, & Mitchell, 2013). This position may have also introduced bias into any analysis or results drawn from this study. Thus, to reduce the threat of bias, a proxy was used with colleagues when introducing the study and requesting participation. Two independent researchers reviewed quantitative and qualitative results to ensure a thorough analysis. Third-party anonymizers, trained in data collection for program evaluation, were used to anonymize all data prior to analysis. Participation in the study was voluntary for both the personnel of the regional training and technical assistance system and the district participants.

Timeline for Completing Study

Upon approval from both the Institutional Review Board at Virginia Commonwealth University and the State Education Agency, the timeline for this study was presented in Table 3.

Table 6

Proposed Timeline for Study

Research Activity	Anticipated Timeframe	Evidence of Completion	Impact on Outside Personnel
Institutional Review Board; VCU	March–April 2018	Permission to conduct research	No Impact
Institutional Review Board; SEA	March–April	Permission to conduct research	No Impact
Secondary data analysis	April–May 2018	Identification of purposive sample	Regional directors – provide administrative contact for each district identified in the purposive sample, for a total of 3 districts per region.
Institutional Review Board; individual districts	May–June 2018	Permission to conduct research	No impact
Invitation to participate in survey	August–September 2018	• Invitation(s) of consumer by regional personnel	Identified specialists – 30 min (four e-mails over four weeks, drafts provided)
Initial analysis of survey data	September 2018	Anonymizers will: • Eliminate cases based on parameters set by purposive sample • Separate quantitative from qualitative data • De-Identify qualitative samples prior to analysis • Assist with drawing blind samples by region, if needed	Anonymizers – 4–5 hours, additional time may be necessary to draw blind samples
Quantitative analysis	October 2018	Non-parametric tests results reported	No impact
Qualitative analysis	October 2018	Completed analysis of evidence of change	No impact
Mixed-methods analysis	October 2018	Completed analysis combining qualitative and quantitative data	No impact

Institutional Review Board

Approval for this research through the Institutional Review Board at Virginia Commonwealth University and the State Education Agency was sought prior to conducting this plan as outlined. The process for conducting research set forth by individual districts was also addressed, as needed, prior to data collection.

Summary of Methodology

Phase I had two outcomes: (a) A summary of requests for services by region and state during the study period, and (b) a purposive sample identified for use in survey distribution in Phase II. Phase II consisted of specialists at each regional center sending an e-mail invitation to an online survey instrument to education professionals who had received three or more contacts from regional system personnel during the 2016–2017 school year, and who also worked within a district identified through the purposive sampling in Phase I. Phase III consisted of a quantitative analysis employing non-parametric analysis to determine the relationships and associations. Phase IV consisted of the application of Narratives of Change, a qualitative analysis tool used to document change in analyzing narrative responses. In Phase V, both quantitative and qualitative results were combined to identify common elements of supports perceived to have influenced instructional delivery for students with disabilities.

Chapter IV

Statewide Regional Technical Assistance System

When measuring academic progress by state assessments, a wide performance gap exists between students with disabilities and their nondisabled peers. Challenges to establishing statewide systems of support (SSOS) to improve special education services include staffing shortages and capacity limits. Therefore, SSOS increase their reliance on outside agents to implement support systems aimed at school improvement and, specifically, at improved support for students with disabilities (Hergert, Gleason, Urbano, & North, 2009; Massell, Goertz, & Barnes, 2012). It is critical to understand the impact of using outside agents on teacher practices, and to monitor the academic performance among students with disabilities (Massell et al., 2012).

The target state's training and technical assistance system provides intensive supports to 132 school districts within eight geographical regions. The target state's existing training and technical assistance system is an essential component to providing support and interventions to improve instruction for students with disabilities under the SSOS requirement (IDEA, 2004; NCLB, 2001). The target state's training and technical assistance system has established centers within Schools of Education at seven universities across the state. These seven centers provide supports and services directly to the 132 school districts within eight geographical regions. In some instances, two centers share the delivery of services across two regions. In other instances, a single center covers two regions independently. Each center is tasked with responding to requests for services unique to the local context of its geographical region. For some statewide

initiatives, these seven centers work collaboratively to provide support at the state, regional, and local levels.

NCLB (2001) included provisions, under P.L. 107-110, Sec. 1117 (a)(1), to develop capacity-building technical assistance for schools in need of (a) improvement, (b) corrective action, or (c) restructuring. States were directed to create SSOS in collaboration with existing agencies to deliver targeted assistance to both local education agencies and individual schools identified as being in need of support (NCLB, 2001). NCLB also established requirements for these systems to improve academic achievement for specific subgroups of students, including students with disabilities (see Table 1). The purpose of this research was to examine how a mid-sized state's implementation of the SSOS, by incorporating an existing regional training and technical assistance system, aimed to improve special education, as well as the impact on instructional delivery for students with disabilities.

Secondary Data Analysis

Description of the Data

The established regional system is university-based and is tasked with collecting data on the supports and services provided across eight regions. Each regional center uploads data collected from a request-for-service data collection tool. Each of the eight regional centers contributes to the database in partnership with an outside data management company. A small number of trained individuals in each region is responsible for entering data, and the number of individuals who have access to the entire database is limited. The database can be accessed online via a secure, password-protected platform that is not publicly available.

Data are reported by specialists at each regional center for entry into the statewide database through the completion of the request for service data collection tool (see Appendix A).

Requests for service can represent multiple individuals or groups. Three categories of data were used from the official database in this analysis: (a) service provider title, (b) service delivery method, and (c) content area of focus. Each individual request for service may result in multiple service providers, types of services delivered, and areas of focus.

A secondary data analysis was conducted using requests for service data collected by the statewide technical assistance system during the 2013–2016 school years and publicly available enrollment data reported by the state for the 2016–2017 school year. All data are reported as percentages within each region, not as total counts, to demonstrate the unique context and focus for each regional center and to limit comparisons of overall contacts within each region. All data reported represent either statewide or geographical region data. To protect confidential information, data on individual districts were not included in this analysis.

Statewide Population Analysis

The target state is divided into 132 school districts within eight geographic regions (see Table 7). The average statewide student enrollment for a district in 2016–2017 was 9,757 students. The average number of students identified in need of special education services by district was 1,276, resulting in an average special education service delivery rate of 14% for the statewide sample.

Among the regions, average enrollment ranged from 2,433 (Black region) to 17,441 (Brown region). The average number of students identified in need of special education services ranged from 329 (Black region) to 3,204 (Violet region). The resulting average percentage of special education service delivery ranged from 12.6% (Violet region) to 15.5% (Orange region).

Table 7

Statewide Versus Purposive Sample Population Analysis

Period	State	Red region	Brown region	Yellow region	Violet region	Blue region	Green region	Orange region	Black region
Average 2016–2017 enrollment	9,757	12,621	17,441	4,930	24,872	5,079	5,791	3,312	2,433
Purposive sample enrollment 2016–2017	9,391	8,388	26,603	3,357	9,184	7,450	6,596	4,740	1,697
Average 2016 December 1 count	1,276	1,693	2,265	585	3,204	608	829	512	329
Purposive sample 2016 December 1 count	1,197	1,122	3,259	447	1,129	979	854	727	203
Average December 1 count percentage	14.0%	13.95%	12.7%	13.1%	12.6%	13.2%	15%	15.5%	12.9%
Purposive sample December 1 count percentage	13.47%	13.67%	13.18%	14%	12.27%	13.43%	13.8%	15.47%	11.97%

Service Delivery Analysis

The request-for-service data collection tool provides fifteen different types of services for each contact, broken down by category and subtype, and allows for the reporting of multiple services per contact (see Table 8). When these types are condensed by category, the top three categories for request for services are (a) information services, (b) consult, and (c) facilitate/attend meetings. Information services combines the categories of information services (11.31%) and information service: e-mail (9.91%), resulting in 21.22% of all requests for service. Consult combines three subcategories: distance (1.09%), offsite (1.71%) and onsite (12.35%), resulting in 15.15% of all requests for service. Facilitate/attend meetings accounted for 9.93% of all requests for service. The least reported service requests were for consult (0.18%) and referral (0.18%).

Data are collected on providers requesting services, and each reported service request may impact multiple service providers at the same time (see Table 9). Teachers accounted for 61.62% of all service requests: 36.93% were general educators and 24.69% were special educators. Administrators accounted for 27.56% of all service requests: 18.45% were general education administrators and 9.11% were special education administrators. For data collected during the 2015–2016 school year, there were no reported interactions with behavior specialists, mental health specialists, or social workers across all regions. For data reported, multiple providers may have been reported, resulting in combined percentage totals equaling more than 100%.

Data on the topic area for each request for service are also collected, with multiple topics identified per service request. There are 28 topic areas, plus an option for "other," on the data collection tool (see Table 10). Six topic areas (curriculum/instruction, inclusive practices, math,

reading, strategic instruction model strategies, and writing) can be condensed into the single category of academics. For request for service reported, multiple topics may have been reported, resulting in combined percentage totals equaling more than 100%.

Table 8

Statewide Analysis of Service Delivery

Service	State	Red region	Brown region	Yellow region	Violet region	Blue region	Green region	Orange region	Black region
Consult: distance	1.09	1.53	3.2	1.24	0.26	0.10	1.60	1	0.17
Consult: offsite	1.71	5.8	1.67	0.53	0.32	1.75	1.27	0.16	3.5
Consult: onsite	12.35	44.93	17.53	4.76	5.47	5.5	9.8	4.26	14.25
Facilitate/attend team meeting	9.93	28.67	8.73	0.88	21.58	2.8	4.33	3.53	11.42
Information services	11.31	42.13	15.2	3.82	11.32	1.85	8.4	4.21	9.17
Information services: e-mail	9.91	24.73	11.67	3.82	12.53	2.55	10.8	6.84	9.67
Library	8.11	5.6	27.13	10	6.11	8.35	4.4	2.68	0.75
Link: consult	0.18	0.67	0.40	0.24	0.53	0	0	0	0.25
Link: information	2.65	1	2.6	0.12	11.63	0.5	1.87	1.37	0.75
Link: phone	0.45	0.33	0.67	0.41	0.58	0.15	0.93	0.11	0.58
Link: PD event	1.27	0.27	0.13	0	7.63	0	0.53	0.42	0.08
Long-term technical assistance	0.33	0	0.47	0	1.89	0	0	0	0
Presentation	2	7.07	1.2	0.42	3.63	1.2	1.27	0.26	1.25
Professional development	2.51	1.47	6.67	1.18	3.63	1.65	2.8	1.42	1.58
Referral	0.18	0.27	0.13	0	0.11	0.10	0.60	0.21	0.08

Note: Reported percentages for each service delivery method identified; more than one could be identified for each individual request for service.

Table 9

Statewide Analysis Service Provider Roles

Provider	State	Red region	Brown region	Yellow region	Violet region	Blue region	Green region	Orange region	Black region
Administrator, general education	18.45	49.17	6.6	3.34	34	8	10	10	1.4
Administrator, special education	9.11	4	13.17	7.29	16.71	2	11	4.25	6.2
Teacher, general education	36.93	85.67	33.67	9.83	25.78	155	58.5	17.2	26.57
Teacher, special education	24.69	26.71	40.8	14	20.57	14	58	24.25	20.38
Behavior specialist	0	0	0	0	0	0	0	0	0
College student	3	1	0.8	0	12.5	0	0	0.33	1.25
School counselor	3.88	8	4.8	0.17	3	0	17.5	1.75	1.00
Human services agency	0.56	0	0	0	1.3	0	0	0	0
Mental health specialist	0	0	0	0	0	0	0	0	0
Occupational therapist	1.42	1.4	2.5	0.14	0.43	0	3	5	0.75
Paraprofessional	10.94	2	6.3	2	9.5	51	5	3	19.75
Parent/family	7.49	1.83	1.5	0.17	27.71	3	6.67	5.33	2
Physical therapist	0.53	0.6	0	0	0.29	2	2	2.33	0
Pre-K–12 student	3.59	5.17	1.8	0	2.14	5	0	0.5	12.2
Social worker	0	0	0	0	0	0	0	0	0
Speech pathologist	4.84	10.14	4.71	1	0.67	8	12	10	1.5
Transition coordinator	0.42	0	0.25	0	1.29	1	0.5	0.33	0
University faculty	1.93	0.2	0	0	7	0	4	1.25	0
Vocational teacher/admin	0.39	0	0.33	0	0.14	3	0	1.4	0

Note: Reported percentages for each service delivery method identified; more than one could be identified for each individual request for service.

Table 10

Statewide Analysis of Topic Areas for Service Requests

Service	State	Red region	Brown region	Yellow region	Violet region	Blue region	Green region	Orange region	Black region
Assessment	13	11.25	13.4	3	23.33	2	2	5.75	11
Behavior	12.68	10.83	9	1	27.83	0	3.5	1	5.8
Child find	2	0	1	0	3	0	0	0	0
Classroom management	11.86	16.16	7	1	27.67	0	3	0	5.6
Collaboration/team building	11.5	8.75	4	1.33	27.83	5	8	3.5	11
Communication/language	14.57	3.5	28	8.6	29.5	10.5	15	6.5	13.5
Community-based instruction	2	1	4	0	1	3	0	0	0
Curriculum/instructional methods	16.74	13	5.5	16.2	29.14	1.5	6.3	7.75	33.25
Disability characteristics	3.88	3	9.5	1	1.5	4.5	3	0	6
Feeding oral/motor	2	0	0	0	2	2	0	0	0
Instructional consultation team	0	0	0	0	0	0	0	0	0
IEP/IFSP/504	4.95	5.17	9.33	4	1.5	2.5	1	0	7
Inclusive practices	16.56	21.67	11	5.4	35.6	2	5.5	9	21
Math	11.71	0	2.67	7.67	31.25	0	3	1.67	0
Medical	1	1	0	0	1	1	0	0	0
Motor	2	1	0	1	2	0	4	2	0
Parent/family	12.27	1	13	0	30.6	1.5	1	3	4
Reading	13.17	4.67	5.5	14	30.4	1	1	5.75	14.75
School safety	20.88	1	0	0	28.6	2	0	0	0
Self-determination	12.85	1.5	1.5	0	29.4	0	0	0	3.5
Sensory	2.47	1	3	0	1	1	2	1	5.3
SIM strategies	7	0	0	0	0	0	0	0	0
Social skills	9.54	3.2	4	4.83	29.2	0	4	4	9.67
Technology	12.91	2.25	21.2	6.25	35.25	3	6	2	1.67
Transition – preschool	2.86	1	7.5	0	1	0	0	0	0
Transition – miscellaneous	17.63	6	1	0	30	2	0	0	0

Vocational/employment	13.25	1	1	1	27.6	0	1	0	0
Writing	11.32	9	7	5	31.75	10	2	4.33	6

Note. IEP = individualized education plan; IFSP = Individualized Family Service Plan; SIM = Strategic Instruction Model.
Note: Reported percentages for each service delivery method identified; more than one could be identified for each individual request for service.

When combined, the topic of academics represents 76.5% of all service delivery requests. Five topic areas (behavior, classroom management, communication/language, self-determination, and social skills) can be condensed into the single category of behavior. Service delivery for these topic areas focus on improving student response by improving teacher practice. When combined, the topic of behavior was requested for 61.5% of all service delivery requests. Five topic areas (child find, community-based instruction, feeding, medical, and motor) can be condensed into a single category of low-incidence requests. When combined, these five areas account for only 9% of all service delivery requests.

Regional Population Analysis

In the Red region, the top three types of services requested were information services (66.86%), consults (52.26%), and facilitate/attend team meetings (28.67%); 112.38% of all service requests were provided to teachers both general and special education: 85.67% identified as general educators and 26.71% identified as special educators. More than half (53.17%) of all service requests were provided to administrators: 49.17% identified as general education and 4% identified as special education. Compared to the statewide results, the topic focus for requests for services across the three major categories was as follows: behavior (35.19%), academics (48.34%), and low-incident requests (3%).

In Brown region, the top three types of services requested were information services (26.87%), consults (22.42%), and facilitate/attend team meetings (8.73%). Three fourths of all service requests (74.47%) were provided to teachers: 33.67% identified as general educators and 40.8% identified as special educators. On fifth of all service requests (19.77%) were provided to administrators: 6.6% identified as general education and 13.17% identified as special education. Compared to the statewide results, the topic focus for requests for services across the three major

categories was as follows: behavior (49.5%), academics (31.67%), and low-incident requests (5%).

In Yellow region, the top three types of services requested were information services (7.64%), consults (6.53%), and facilitate/attend team meetings (0.88%). About one quarter of all service requests (23.83%) were provided to teachers: 9.83% identified as general educators and 14% identified as special educators. Of all service requests, 10.72% were provided to administrators: 3.43% identified as general education and 7.29% identified as special education. Compared to the statewide results, the topic focus for requests for services across the three major categories was as follows: behavior (15.43%), academics (48.27%), and low-incident requests (1%).

In Violet region, the top three types of services requested were information services (23.85%), consults (6.05%), and facilitate/attend team meetings (21.58%). Nearly half of all service requests (46.35%) were provided to teachers: 25.78% identified as general educators and 20.57% identified as special educators. Of all service requests, 50.71% were provided to administrators: 34% identified as general education and 16.71% identified as special education. Compared to the statewide results, the topic focus for requests for services across the three major categories was as follows: behavior (143.6%), academics (158.14%), and low-incident requests (9%).

In Blue region, the top three types of services requested were information services (4.4%), consults (7.35%), and facilitate/attend team meetings (2.8%). Of all service requests, 169% were provided to teachers: 155% identified as general educators and 14% identified as special educators. Of all service requests, 7% were provided to administrators: 5% identified as general education and 2% identified as special education. Compared to the statewide results, the

topic focus for requests for services across the three major categories was as follows: behavior (10.5%), academics (14.5%), and low-incident requests (6%).

In Green region, the top three types of services requested were information services (19.2%), consults (12.67%), and facilitate/attend team meetings (4.33%). Of all service requests, 116.5% were provided to teachers: 58.5% identified as general educators and 58% identified as special educators. Of all service requests, 21% were provided to administrators: 10% identified as general education and 11% identified as special education. Compared to the statewide results, the topic focus for requests for services across the three major categories was as follows: behavior (25.5%), academics (17.8%), and low-incident requests (4%).

In Orange region, the top three types of services requested were information services (11.05%), consults (5.42%), and facilitate/attend team meetings (3.53%). Of all service requests, 41.25% were provided to teachers: 17.2% identified as general educators and 24.25% identified as special educators. Of all service requests, 14.25% were provided to administrators: 10% identified as general education and 4.25% identified as special education. Compared to the statewide results, the topic focus for requests for services across the three major categories was as follows: behavior (11.5%), academics (28.5%), and low-incident requests (2%).

In Black region, the top three types of services requested were information services (18.84%), consults (17.92%), and facilitate/attend team meetings (11.42%). Nearly half of all service requests (46.95%) were provided to teachers: 26.57% identified as general educators and 20.38% identified as special educators. One fifth of all service requests (20.49%) were provided to administrators: 14.29% identified as general education and 6.2% identified as special education. Compared to the statewide results, the topic focus for requests for services across the

three major categories was as follows: behavior (38.07%), academics (75%), and low-incident requests (0%).

Identification of a Purposive Sample

In 2012, as part of the requirement for establishing a SSOS, the participating state enlisted an existing regional system of supports to address the needs of students with disabilities within low-performing schools. The sample for this study included educational professionals working for districts that received supports and services during the study period (July 2013–June 2016), across all eight geographic regions.

Using a two-level growth model controlling for district size (total population) and concentration of special education (December 1 child count), the top three districts receiving supports and services during the study period were identified for each region. These three districts per region were most likely to receive services during the 2016-2017 school year. Regional system specialists were asked to invite educational professionals who, while working for one of these districts, requested and received a minimum of three contacts during the 2016–2017 school year (AUCD, 2018).

Multi-Level Model

A multi-level model with a Poisson Link regression model was used to model "count" variables when the number of events in a sample occur within a given interval and the collection of count data is constant (NCSS, 2018). The occurrence of each event is independent, and the probability of one event does not affect another. When displayed as a histogram, the probability distribution demonstrates no significant outliers in a binomial distribution (Figure 7). The data collected for service delivery requests from 2013 to 2016 met the assumptions of a Poisson sample.

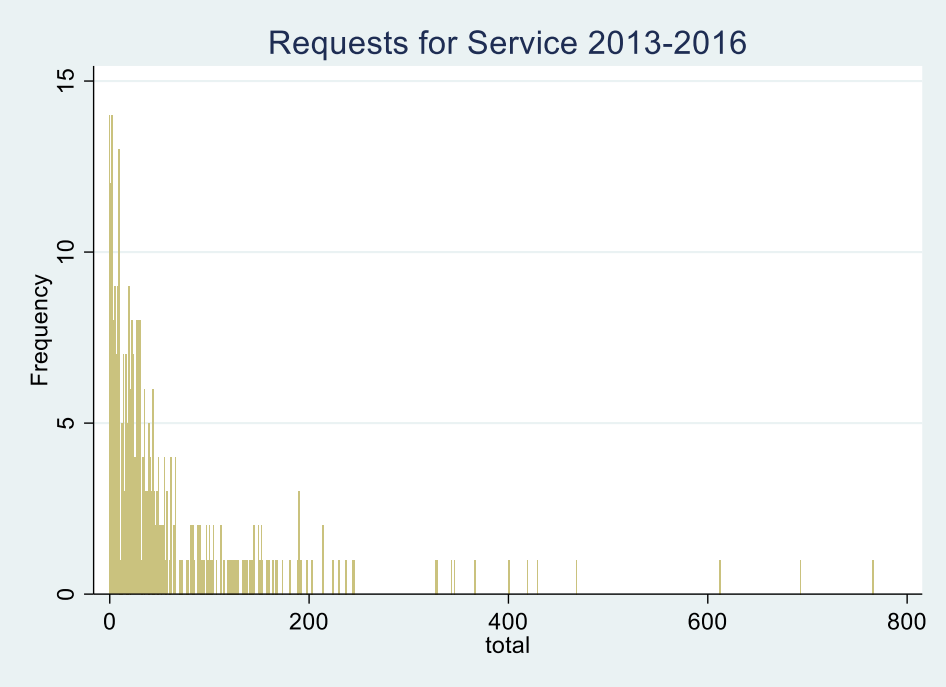

Figure 7. Requests for service (2013–2016).

Results of Poisson Analysis

A multi-level, mixed-effects Poisson regression model was run to predict the number of anticipated requests for service by school districts during the 2016–2017 school year. The model did not converge; it only modeled whether predictors influenced the intercept, not the slope. This results in no estimate for random effects; it only estimates for a fixed slope coefficient for time. A fixed slope coefficient for time assumes all districts have the same slope for the coefficient of time. This model was computed using 396 total observations with 132 groups represented. Each group had three observations counted in this analysis.

According to this model, each year, requests are predicted to increase annually based on the variables under control (e.g., Total population, December 1 count). Overall growth is predicted to be 10% per year when predictor variables are controlled for. Initial requests for service increased by about .0002 for each student in a division. For every 10,000 additional students enrolled in a district, 2 additional service requests (95% CI [.078, .109]) would be

expected. This difference was statistically significant ($p < .001$). The multi-level model adjusted for both student population and proportion of special education population.

Results of Poisson Regression

After the Poisson regression model was applied (see Table 11), the statistical software Stata was used to apply marginal predictions. Marginal predictions, when applied to the results of the growth model, indicated which districts should have submitted the highest numbers of requests for service during the 2016–2017 school year.

Table 11

Poisson Regression Visual Summary

Total requests	Coefficient	SE	*p*
Year	.0939	.008	.000
Enrollment	.00002	4.81	.000
Concentration	-6.0809	4.32	.159
_cons	-185.1743	16.18	.000
Log likelihood		-4455.9157	
Chi square		23763.41	
Chi square probability		0.0000	

Note. Observations ($n = 396$); groups ($n = 132$).

This process was used to reduce the bias of having centers choose which districts to invite for participation. The Poisson regression with marginal predictions resulted in the identification of three school districts for each of the eight geographical regions ($n = 24$). To protect confidential information, specific data related to the identified districts will not be reported.

The process for districts submitting requests for services is voluntary and fluctuates with local priorities. In two instances, districts identified using the Poisson regression had not requested services during the 2016–2017 school year as predicted. In these two cases, the district with the next highest prediction was substituted for data collection.

Purposive Sample Analysis

This purposive sample consisted of three school districts per geographical region (n = 24). The average statewide student enrollment for a district in 2016–2017 was 9,391 students. The average number of students identified in need of special education services was 1,197, resulting in an average special education service delivery rate of 13.47% for the statewide sample.

Regional Demographics

Among the regions, the average enrollment ranged from 1,697 (Black region) to 26,603 (Brown region). The average number of students identified in need of special education services ranged from 203 (Black region) to 3,259 (Brown region). The resulting average percentage of special education service delivery ranged from 11.97% (Black region) to 15.47% (Orange region).

Data were collected on providers requesting services; each reported service request may impact multiple service providers at the same time (see Table 12). Teachers accounted for 30.92% of all service requests: 11.17% were general educators and 19.75% were special educators. Administrators accounted for 18.5% of all service requests: 7.5% were general education administrators and 11% were special education administrators. For data collected during the 2015–2016 school year, there were no reported interactions with behavior specialists, mental health specialists, or social workers across all regions.

Table 12

Purposive Sample Analysis of Service Delivery

Service	State	Purposive sample
Consult: distance	1.09	1.75
Consult: offsite	1.71	0.83
Consult: onsite	12.35	6.38
Facilitate/attend team meeting	9.93	7.5
Information services	11.31	7.79
Information services: e-mail	9.91	10.75
Library	8.11	10.58
Link: consult	0.18	0.17
Link: information	2.65	1.21
Link: phone	0.45	0.33
Link: PD event	1.27	0.29
Long-term technical assistance	0.33	0.46
Presentation	2	1.29
Professional development	2.51	3.25
Referral	0.18	0.13

Note: Reported as percentages of services requested.

Service Delivery

The request for service data collection tool includes fifteen different types of services for each contact, broken down by category and sub-type, and allows for reporting of multiple services per contact (see Table 13). There three broad categories of service on the request for service data collection tool which have subcategories. When these subcategories are condensed by category, the top three categories for request for services were information services, consult, and facilitate/attend meetings. Information services combines the categories of information services (18.67%) and information service: e-mail (14.33%), resulting in 18.05% of all requests for service. Consult combines three subcategories—distance (1.30%), offsite (0.65%), and onsite (6.35%)—resulting in 8.3% of all requests for service.

Table 13

Purposive Sample Analysis of Service Providers

Provider	State	Purposive sample
Administrator, general education	18.45	7
Administrator, special education	9.11	10.2
Teacher, general education	36.93	10.86
Teacher, special education	24.69	21.89
Behavior specialist	0	0
College student	3	0.5
School counselor	3.88	6.75
Human services agency	0.56	3
Mental health specialist	0	0
Occupational therapist	1.42	3.6
Paraprofessional	10.94	39
Parent/family	7.49	3.8
Physical therapist	0.53	0
Pre-K–12 student	3.59	2.6
Social worker	0	0
Speech pathologist	4.84	7.25
Transition coordinator	0.42	0.67
University faculty	1.93	1.5
Vocational teacher/admin	0.39	0.34

Note: Reported percentages for each service delivery method identified; more than one could be identified for each individual request for service.

Library services accounted for 10.43% and facilitate/attend meeting accounted for 7.09% of all requests of service. The least reported service requested was referral (0.13%).

Topic area data for each request for service was also collected, with multiple topics identified per service request. There were 28 topic areas, plus an option for "other," on the data collection tool (see Table 14).

Table 14

Statewide Versus Purposive Sample Analysis of Topic Areas for Service Requests

Service	State	Purposive Sample
Assessment	13	33.3
Behavior	12.68	37.5
Child find	2	0
Classroom management	11.86	33.3
Collaboration/team building	11.5	54.2
Communication/language	14.57	—
Community-based instruction	2	2.1
Curriculum/instructional methods	16.74	54.2
Disability characteristics	3.88	4.2
Feeding oral/motor	2	0
Instructional consultation team	0	2.1
IEP/IFSP/504	4.95	6.3
Inclusive practices	16.56	25.0
Math	11.71	10.4
Medical	1	0
Motor	2	—
Parent/family	12.27	6.3
Reading	13.17	35.4
School safety	20.88	0
Self-determination	12.85	12.5
Sensory	2.47	0
SIM strategies	7	22.9
Social skills	9.54	8.3
Technology	12.91	6.3
Transition – preschool	2.86	4.2
Transition – miscellaneous	17.63	8.3
Vocational/employment	13.25	6.3
Writing	11.32	10.4

Note. IEP = individualized education plan; IFSP = Individualized Family Service Plan; SIM = Strategic Instructional Model. *Note:* Reported percentages for each service delivery method identified; more than one could be identified for each individual request for service.

Six topic areas (curriculum/instruction, inclusive practices, math, reading, strategic instruction model strategies, and writing) can be condensed into the single category of academics. The intended outcome for supports and services in these six areas is to improve instruction and student academic outcomes. When combined, the topic of academics represented 45.75% of all service delivery requests. Five topic areas (behavior, classroom management, communication/language, self-determination and social skills) can be condensed into the single category of behavior. The intended outcome for supports and services in these five areas is to improve student response by improving instruction. When combined, the topic of behavior comprised 24.8% of all service delivery requests. Five topic areas (child find, community-based instruction, feeding, medical, and motor) can be condensed into a single category of low-incidence requests. When combined, these five areas accounted for only 4% of all service delivery requests.

A chi-square test of independence was conducted between the population demographics (district size, special education population) of the statewide sample and the purposive sample. There is no statistically significant difference between the statewide sample and the purposive sample, $\chi^2(2) = .3558$, $p = .84$.

A chi-square test of independence was conducted between the requests for service and service provider data of the statewide sample and the purposive sample. There is no statistically significant difference between the statewide sample and the purposive sample, $\chi^2(10) = 12.80$, $p = .24$.

Survey Instrument

The online survey instrument consisted of a mixture of closed and open-ended responses and was delivered via an e-mail requesting participation (Andres, 2012). Anonymous responses

are best for collecting sensitive data, since the respondent does not have to publicly declare a negative response, as would be the case in an interview-style survey (Andres, 2012; Fowler, 2014). Prompts requiring responses considered to be sensitive, such as rating a belief statement or responding in narrative form, are best obtained without interviewer interference (Fowler, 2014). Some respondents included identifying information within their open-ended responses. To maintain respondent anonymity, all responses were anonymized by an independent, third-party prior to analysis. Quantitative and qualitative data were analyzed as separate data sets prior to the mixed-methods analysis.

The online survey instrument consists of five sections: (a) consent to participate; (b) background questions to affirm membership in the purposive sample, as identified in Phase I; (c) demographic and response to belief statements; (d) open-ended, narrative response; and (e) notification of completion (see Appendix B; Andres, 2012). Participants had to provide consent in order to enter the survey. Participation was voluntary, and declining participation did not result in a notification of completion.

There was no way to predict which districts and staff would be identified as part of the purposive sample. Thus, to protect the integrity of the study sample, an expert pilot study was conducted consisting of three layers of review. First, the statewide leadership team for the regional technical assistance system was asked to provide feedback on the proposed study implementation. Second, an established, systems change expert (Hall & Hord, 2003) was asked to review the survey instrument and to provide feedback on both its contents and implementation. Finally, the survey was piloted with individuals who previously worked for the regional system as specialists delivering technical assistance to generate feedback on the survey instrument (Andres, 2012; Groves et al., 2004; Som 1996).

Response Rate Analysis

Specialists from each regional center who fulfilled requests for services for consumers within districts identified in the purposive sample (n = 24) were asked to send an e-mail containing a link to the survey (see Appendix B) to individuals who had received three or more contacts for supports or services (AUCD, 2018) during the 2016–2017 school year. Invitations to participate were sent to education professionals within the purposive sample who had received supports or services during the 2016–2017 school year. Following these instructions, 123 survey requests were delivered by e-mail. Each request was delivered once a week for three weeks or was discontinued if requested. This sampling method resulted in sixty-five responses to complete the survey and fifty-two completed surveys used for the analysis (Nulty, 2008).

Individual region and center response rates were calculated in addition to an overall study response rate (see Table 15). Individual region response rates ranged from 5% (Black region) to 100% (Green region).

Table 15

Response Rate Analysis by State and Region

	Invitations	Reponses	Response rate
State	123	52	42.3%
Red region	9	4	44.4%
Brown region	12	8	66.7%
Yellow region	38	14	36.8%
Violet region	25	7	28.0%
Blue region	3	2	66.7%
Green region	9	9	100.0%
Orange region	9	7	77.7%
Black region	18	1	5.0%

The overall response rate for this anonymous, online survey was calculated at 42.28%. The center response rate, which considered how coverage across regions was shared by some centers,

ranged from 18.5% to 88.88%. As a result, only statewide analysis of the data will be reported (Nulty, 2008).

Participants

Respondents self-identified their role, their program affiliation, and the content area for which they requested support. Teachers accounted for the largest portion of respondents (57.14%), administrators accounted for 34.7% of respondents, and all other identified roles represented 8.16%. Included in "other" roles were speech and language, transition coordinator, and mental health specialist. One respondent did not identify a role. Over half of respondents (54.2%) identified special education as their program affiliation, while 45.8% identified general education. Two respondents did not identify a program affiliation.

Respondents identified the various content areas for which they had previously requested services; multiple responses for each survey were collected. Using the condensed categories from the statewide analysis, academics accounted for 158.3% of all service requests. The category of academics included curriculum and instruction, inclusive practices, math, reading, strategic instruction methods, and writing. Behavior accounted for 91.6% of all service requests. The category of behavior included behavior, classroom management, communication and language, self-determination and social skills. Low-incidence areas of request accounted for 2.1% and included child find, community-based instruction, feeding, medical and motor.

A chi-square test of independence was conducted between the demographics of the statewide sample and the actual collected sample. There are statistically significant differences in the distribution of the collected data compared to the statewide data reported by the outside agent, $\chi^2(4) = 21.95$, $p < .001$. When comparing the reported statewide data to the data collected from the actual sample, they are different, and this finding is statistically significant. Because

survey invitations were extended via third party to protect anonymity, it is not possible to determine the similarity of the overall population invited to participate. The actual collected sample represented more services provided to address academic and behavior concerns than expected from projections based on the actual statewide data. Respondents to the survey who identified with a special education affiliation responded with greater frequency than expected, and those identifying as general education affiliation responded with lesser frequency than expected.

Quantitative Data Analysis

Using a 5-point Likert scale, participants were asked to respond to seven belief statements regarding interaction with personnel from the regional technical assistance system, and to three belief statements regarding policies and practices within their district/school. Participants could elect to not respond to any of the individual belief statements. Response rates for belief statements ranged from forty-six to forty-eight responses. The frequency of responses by individual response and percentage of response is summarized by question in Table 16.

Visual analysis of the frequency data indicates a largely positive response to all ten belief statements, with no significant negative responses. Within the seven belief statements regarding regional system personnel, participant scores were highest for effective communication, demonstrating flexibility, and personnel having high levels of skills and knowledge. An overall neutral response was noted when considering if regional personnel focused on capacity building and systems change. Within the three belief statements regarding policies and procedures of the local district/school, respondents scored these items lower than all previous belief statements regarding personnel of the technical assistance system. While respondents agreed that their

district/school valued the contributions of regional personnel, responses regarding high staff turnover and established internal systems of improvement were neutral.

The data collected on Likert responses reflected educational professionals' beliefs and yielded categorical and continuous data. To analyze this combined data set, a series of nonparametric Wilcoxon two-sample tests were used to test the null hypothesis. The data represent independent samples and equal variance. A visual inspection of the distributions was conducted. All assumptions were met to apply this model.

Table 16

Visual Summary of Likert Responses

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		Summary	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Supports and services impacted instructional practices for students with disabilities.	2	4.3	0	0	9	19.1	20	42.6	16	34.0	47	4.07
Supports and services focused on capacity building and systems change.	2	4.3	1	2.2	11	23.9	19	41.3	13	28.3	46	3.87
Personnel worked collaboratively to make changes accessible and possible given the needs of the school.	2	4.3	0	0	5	10.6	25	53.2	15	31.9	47	4.09
Personnel demonstrated high levels of skills and knowledge regarding interventions.	2	4.3	0	0	2	4.3	22	46.8	21	44.7	47	4.28
Personnel clearly articulated outcomes and understood the goals identified by the district/school.	2	4.3	0	0	4	8.5	21	44.7	20	42.6	47	4.21
Personnel established effective communication channels which built trust.	2	4.3	0	0	1	2.1	17	36.2	27	57.4	47	4.43
Personnel demonstrated flexibility while working collaboratively to meet unique needs of district/school.	2	4.3	1	2.1	1	2.1	17	36.2	26	55.3	47	4.36
My district/school has an established internal system for improving instructional practices.	3	6.3	5	10.4	7	14.6	22	45.8	11	22.9	48	3.69
My district values the contributions of regional personnel in improving instructional practices for students with disabilities.	2	4.3	2	4.3	9	19.1	15	31.9	19	40.4	47	4.0
My district/school has experienced high rates of staff turnover in recent years.	5	10.4	4	8.3	7	14.6	13	27.1	19	39.6	48	3.77

The null hypothesis stated that responses for each role and affiliation would be independent of each other. A total of forty-seven individuals responded to the Likert scale items; some items were left blank. A visual assessment indicated that there were differences in the distributions for the independent variables (role and affiliation). The categorical variable of role represents three options: administrator (n = 16), teacher (n = 27), and other (n = 4). Because the data represented fewer than five responses, the category of "other" was not used in this analysis. The categorical variable of affiliation represents two options: special education (n = 26) and general education (n = 20).

Administrators consistently scored higher across all items compared to teachers. A Wilcoxon two-sample test was used to compare administrator responses to teacher responses for all continuous variables of interest. An overall trend was observed, indicating that administrators had a more favorable response pattern. The average impact rating for administrators (4.31) was higher than the average impact rating for teachers (3.81; Wilcoxon S = 405.5; z = 1.42, p = .08). Although this failed to reach conventional levels of statistical significance, given the modest sample size, this finding is suggestive of a true difference. Furthermore, post hoc testing of the achieved power indicated that with seventeen administrators and twenty-eight teachers, using the effect size rendered from the impact variable (Cohen's d =.5), the actual power was .47. For capacity building, the average impact rating for administrators (4.13) was higher than the average impact rating for teachers (3.81; Wilcoxon S = 379.5; z = 1.57, p = .08). Although this failed to reach conventional levels of statistical significance, given the modest sample size, this finding is suggestive of a true difference. For collaboration, the average impact rating for administrators (4.40) was higher than the average impact rating for teachers (3.89; Wilcoxon S = 408.5; z = 1.54, p = .08). Although this failed to reach conventional levels of statistical

significance, given the modest sample size, this finding is suggestive of a true difference. For internal supports, the average impact rating for administrators (4.06) was higher than the average impact rating for teachers (3.46; Wilcoxon S = 416; $z = 1.43$, $p = .08$). Although this failed to reach conventional levels of statistical significance, given the modest sample size, this finding is suggestive of a true difference.

In six out of 10 responses, education professionals who identified as general educators responded with higher scores than special educators. A Wilcoxon two-sample test was used to compare the special educator responses to the general education responses for all of the continuous variables of interest. No statistically significant differences were found (see Table 17).

Summary of Quantitative Results

The secondary data analysis identified a purposive sample with characteristics that were statistically different from those of the actual collected sample (see Table 18). Educators' self-identified professional affiliation (general vs. special education) did not have an impact on the Likert responses collected. The role of the professional (administrator vs. teacher), however, was reflected in the Likert responses. The differences found between administrators and teachers is approaching statistical significance. Overall, responses to the belief statements indicated a positive level of satisfaction with the existing statewide technical assistance system's delivery of services.

Table 17

Visual Summary Wilcoxon Two-Sample Test

	Responses by role					Responses by affiliation				
Item stem	Admin	*n*	Teacher	*n*	*p*	Spec. Ed.	*n*	Gen. Ed.	*n*	*p*
Impact on services	4.33	16	3.81	27	.077	4.07	26	3.95	20	.348
Capacity building	4.13	15	3.59	27	.058	3.81	26	3.95	20	.227
Collaborative	4.40	15	3.89	27	.061	4.08	26	4.10	20	.366
Skills and knowledge	4.27	15	4.22	27	.322	4.27	26	4.30	20	.361
Clear outcomes	4.33	15	4.07	27	.320	4.12	26	4.35	20	.102
Communication	4.53	15	4.26	27	.290	4.50	26	4.30	20	.195
Flexibility	4.53	15	4.19	27	.172	4.38	26	4.30	20	.500
Internal system	4.06	15	3.46	28	.077	3.65	26	3.71	21	.415
District value	4.33	15	3.77	27	.090	3.96	26	4.05	20	.365
High turnover	3.73	15	3.85	26	.221	3.84	26	3.76	21	.500

Table 18

Purposive Sample Versus Actual Response Rate

	Purposive	Actual
Teacher	30.92	57.1
Administrator	18.50	34.7
General educator	11.92	45.8
Special educator	30.75	54.2

Note: Reported as percentage. Initial data allowed for more than one response per category.

Qualitative Data Analysis

Participants were asked to respond to four open-ended questions regarding interaction with personnel from the regional technical assistance system. Participants could elect to not respond to any of the individual questions. There were 44 completed sets of responses. Two of these response sets were eliminated because the answers indicated a non-response. These data were analyzed separately from the demographic and quantitative data; no individual identifiers regarding role or region are reported. While these data represented a statewide purposive sample reflecting the characteristics outlined previously in this chapter, disproportionate regional responses were a noted limitation.

Reliability and Credibility

Data were generated by requesting individuals working for the regional technical assistance system to invite educational professionals meeting the characteristics of the identified purposive sample to participate in the study. The extension of invitations to participate were subject to error, because there were possible entry errors in the original database. By using a two-level growth model to identify districts for invitations, the reliability of the overall sample increased, but errors in the original database were still likely. Participation for both regional

personnel requested to invite participants and participants invited to complete the survey was completely voluntary. Statistical tests to determine if sampling bias was present were conducted and reported previously in this chapter. While these data were considered representative of the statewide population, no analysis at the regional level was conducted due to disproportionate regional response rates (see Table 15 on page 86).

Out of a total 52 completed surveys collected, 42 complete qualitative responses were culled for this analysis. Survey participants could choose not to participate in the entire survey. Respondents were invited by regional personnel three or more times during the 2016–2017 school year. In analyzing the qualitative data, it is important to note that some participants did not perceive themselves as having been in receipt of services. Rather than eliminate those responses, this confusion was addressed during the qualitative coding process and incorporated within the identified themes. It will also be discussed as a limitation.

Two independent researchers from VCU assisted in the anonymization of all qualitative data. References to specific schools, personnel, or students were removed prior to analysis. Two additional independent researchers from VCU assisted in coding the qualitative data. The initial coding agreement between the primary researcher and second rater for the first-cycle provisional coding was calculated at 75.8% and between the primary researcher and the third rater for the second-cycle theoretical coding at 87.2%. Seventy percent agreement is an acceptable level for analysis of a qualitative sample (Krippendorf, 2004).

Overall Themes

Qualitative analysis applied two-cycle coding methods to identify evidence of systems change. Provisional coding was used as a first-cycle coding method. In provisional coding, a predetermined list of codes is identified through a review of the research and modified as

analysis is conducted (see Table 4 on page 59). In the application of theoretical coding as a second-cycle analysis, the stages of concern framework (Hall & Hord, 2015) was used to determine both evidence of change and a stage of concern for each respondent. The theoretical framework previously discussed in Chapter 2 was also used to guide analysis.

First-Cycle Analysis

Provisional coding (Saldana, 2016) was used as a first-cycle coding method. The application of previously identified provisional codes resulted in the identification of four overall themes related to the supports and services provided by the regional technical assistance system (see Figure 7).

Professional Skills of Outside Agent

The skill set of the outside agent was documented within every qualitative response used in this analysis. In all but four entries, the skill set of the outside agent was referenced as having a positive impact on changing service delivery for students with disabilities. Below are examples of text coded under this theme:

- "The knowledge of [center] employees has been such a great help to solve problems. They are willing to help, and they can think 'outside the box' to create solutions." (Record 13)
- "Helped better structure independent activities, helped with behavior management." (Record 49)
- "We would not be where we are without their direct coaching support." (Record 14)
- "They came to observe with no feedback." (Record 15)

- "[She] met with my co-teacher and myself and helped us organize our small groups and plan rotation activities and come up with strategies to allow for us to reach all levels of our learners." (Record 53)

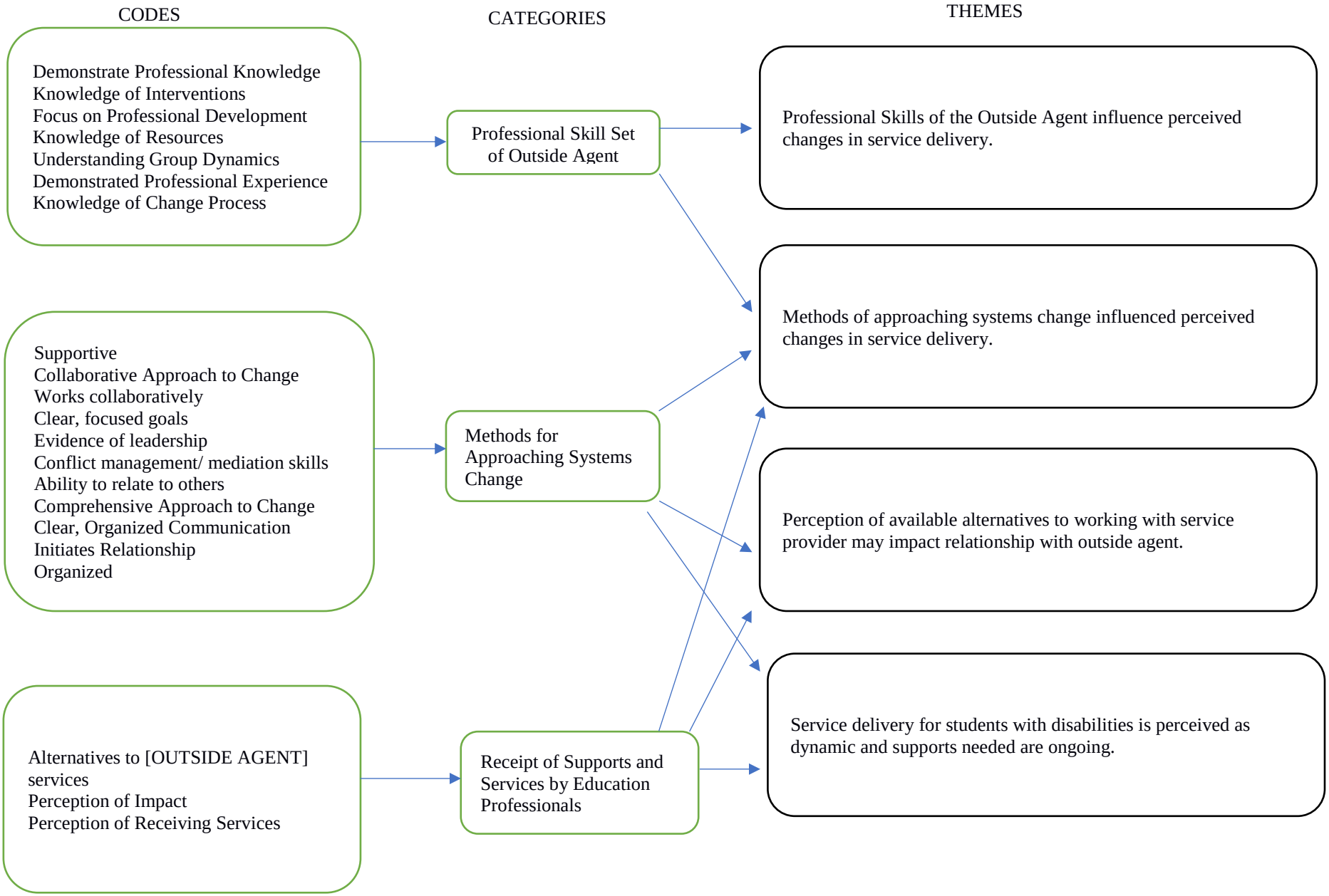

Figure 8. Overall themes related to the supports and services.

Methods of Approaching Systems Change

The methods used by the outside agents to facilitate systems change were documented in relation to achieving a change in service delivery for students with disabilities. Respondents referenced that working collaboratively, in a supportive manner, resulting in perceived changes. Below are examples of text coded under this theme:

- "When you have XXX involved, they set high expectations and collaboratively encourage systems change based on current research and the goals set for the district." (Record 17)
- "The support for [MTSS] has been a little confusing. However, I feel this is due to the nature of [MTSS] and not [outside agent]." (Record 45)
- "Co-teaching professional development modeling in the classroom . . . led to stronger inclusive practices." (Record 59)

Perception of Available Alternatives

Respondents indicated that the lack of alternatives would likely have led to them continuing with the same approach, or, depending on district-level supports, to make changes in service delivery. Searching for support online was cited numerous times as an alternative to direct services. Multiple entries referenced lack of funding to secure outside assistance from independent contractors. Below are examples of text coded under this theme:

- "I would have used similar methods . . . but not in a structured manner or with an understanding of the total approach, its reasoning, and long-term planning had I not participated in [PD]." (Record 10)
- "The great stress with teaching students with disabilities is the lack of time, money, and resources." (Record 13)

- "Due to lack of funding for PD, we would not have provided PD in coteaching without [Outside agent]." (Record 17)
- "I would have continued to try a 'whack a mole' approach, trying something, not seeing great results trying new strategy and so forth." (Record 61)

Service Delivery for Students with Disabilities

Respondents indicated that the need for supports and services to be readily available in special education is ongoing. Special education service delivery was described as an area in which education professionals will always need support due to the individual differences presented by students. It is interesting to note, not all respondents felt as though they had received supports or services based on the terminology in the survey. Below are examples of text coded under this theme:

- "We always need help in instructing students with disabilities." (Record 19)
- "Time is always a factor that poses significant problems for complete integration of any program." (Record 32)
- "While lots of work has been done, there is still a lack of understanding from the majority of the staff that behavior (for all students) is communication. It will be a long road before this mindset is changed." (Record 42)
- "Some teachers taught the new strategy. . . . I cannot speak personally to the improvements as I was not one of those teachers." (Record 22)
- "[Outside agent] support roles switched to school board office personnel being responsible for implementation." (Record 60)

Second-Cycle Analysis

In the application of theoretical coding as a second-cycle analysis, the stages of concern framework (Hall & Hord, 2015) was used to determine both evidence of change and a stage of concern for each respondent. The theoretical framework previously discussed in Chapter 2 was also used to guide analysis (Ambrose,1987; Hall & Hord, 2015).

Evidence of change. The first review of the qualitative data looked for references to change occurring in order to determine if the response was positive (i.e., change occurred) or negative (i.e., change had not occurred). Of all of qualitative submissions, 87.5% included language that suggested that a change in instruction or services for students with disabilities had occurred. After this determination, the theoretical framework discussed in Chapter 2 was used to determine where in the change process each response likely fell. For each response, it was possible to identify multiple dimensions of change. For example, a response might indicate frustration and resistance.

When applying the theoretical framework (Ambrose, 1987; Hall & Hord, 2015), the frequency of responses within each domain indicates a lack of systems change occurring, with less than 1% of all responses reflecting evidence of a systems change having occurred (.09). There was evidence to suggest that confusion resulting from a lack of vision (23.9) and anxiety over a perceived lack of skills (23.9) influenced educational professionals' responses. Second to these influences, resistance due to lack of incentives (19.57) and frustration regarding resources (19.57) may have also negatively impacted the evidence for systems change in practices for students with disabilities. In only one instance did a response reflect a false start due to a perceived lack of an action plan. In two cases, the individual responses were unique, and both

raters agreed that they demonstrated evidence of "pre-change," or that the raters were not in a position to determine if change had occurred.

Table 19

Sample Passages for Evidence of Change

Indicators of poor implementation	Responses (%)	Sample passage
Confusion	23.9	"It did not create change per se but it required that my teachers think more deeply about what they were doing. We would have continued to research and apply research-based practices in order to improve our program." (Record 64)
Anxiety	23.9	"Each student's disability is so unique as is the solution for a better life and learning experience. The knowledge of the XXXX employees has been such a great help to solve problems." (Record 13)
Resistance	19.57	"Mainly collaborative practices and ideas to try within the classroom. Too many special students in one class is not as effective and those that only have a few special education students." (Record 51)
Frustration	19.57	"I have many concerns. I asked for help with specific strategies to use when teaching geometry and never received any." (Record 15)
False starts	0.05	"I had a group of students who I couldn't seem to make the match with in reading. They had bits and pieces but didn't seem to be able to make the connections and make much progress." (Record 61)
Change	0.09	"[Services] resulted in ongoing review of instructional practices and building co-teaching techniques." (Record 17)
Pre-change	0.09	"We received support in 2015–2016 from XXXX personnel directly. We had support putting systems and practices in place for addressing the academic and behavioral needs of all students. [I] am not aware of [change occurring]." (Record 60)

Determining stages of concern. In applying the stages of concern framework (Hall & Hord, 2015), only one stage was determined per qualitative sample. Each reviewer evaluated the

qualitative response across all four open-ended questions to determine a stage of concern (see Table 20). There were significant differences in stage assignment in two instances, possibly resulting from the previous experiences of the reviewers. Inter-rater agreement for this analysis was 87.2%.

Table 20

Sample Passages for Identifying Stages of Concern

Stage	Stage of concern	Responses (%)	Sample passage
Impact	Refocusing	7.6	"There is an expectation that the [state project] tools and principles will be taught/incorporated at all levels throughout the county." (Record 35)
	Collaboration	5	"It helped to enhance teacher knowledge." (Record 41)
	Consequence	30.76	"Information and professional development surrounding inclusive practices co-teaching, effective classroom management, and the strategic instruction model. [It] improved inclusive practices." (Record 5)
Task	Management	28.2	"Planning between special education staff and general education staff improved." (Record 8)
Self	Personal	8	"I was able to use the Orton-Gillingham method to improve reading and writing skills." (Record 26)
	Informational	15	"We followed the SIM procedures and implemented the [strategies] taught to us." (Record 19)
Unrelated	Unconcerned	5	"Some of our teachers taught the new strategy. . . . I cannot speak personally to improvements as I was not one of those teachers." (Record 22)

Stages aligning with evidence of no change. Three stages—unrelated, self, and task—related to Hall and Hord's (2015) framework provided evidence of little to no change and are identified by four stages of concern. Over half of all responses (56.4%) fell within this range: unconcerned stage (5%), informational stage (15%), personal stage (8%), and management stage (28.2%). A key aspect of identifying a stage of concern under these four stages is the lack of

information offered regarding the application and improvement of the innovation being implemented (Hall & Hord, 2015). Concerns identified within these stages demonstrate evidence of the impact primarily on the self, with little evidence of integration into practice.

The fourth stage, impact, encompasses three substages: consequence, collaboration, and refocusing. In the consequence substage, responses should contain reflection, including one's own application of the innovation. About one third of all responses (30.76%) were identified as in this stage. In the collaboration stage, responses should contain indication of working alongside colleagues to maximize the impact of an innovation. Only 5% of all responses were identified as in this stage. In the refocusing stage, responses should contain evidence of improving the implementation for the purpose of improving the impact of the innovation. Only 7.6% of all responses were identified as in this stage.

Summary of Qualitative Results

An initial review of participants responses suggested a change in instruction or services for students with disabilities, including change language in 87.5% of all responses. First-cycle provisional coding revealed four major themes, which indicated that establishing the nature of change is directly related to the skill set of the outside agent and the relationship between those involved. Second-cycle theoretical coding using the stages of concern framework indicated that lasting change was evident in 12.6% of all responses. In applying the theoretical framework of system change theory, evidence suggests that the lack of lasting change was linked to a lack of vision and/or specific skill sets needed to create lasting change.

Mixed-Methods Analysis

In examining both the quantitative and qualitative data, participants were at times confused about whether they had received supports or services. The quantitative data indicated

no reports of supports or services to individuals who were behavioral specialists or in a mental-health support role. State data also suggested extremely limited support for professionals working with the strategic instruction model. The collected responses included individuals who identified as behavioral specialists or were in a mental-health role, as well as those who received support for the strategic instruction model within a region.

Perceptions of Service Delivery

There were no statistical differences in the responses for special educators compared to general educators on the Likert items. Likert responses were overall positive and suggestive of change having occurred. When analyzed in comparison to the analysis of the theoretical framework, the educators reported confusion and anxiety about the changes they were tasked with implementing.

Systems Change

In looking at the Likert response data, it was evident that consumers initially believed a change had occurred and were satisfied. However, when analyzed in comparison with the stages of concern, it was evident that the difference between initial change and systems change may not have been clearly understood. In the responses, it was clear that the change process was ongoing, but there was no clear understanding of its trajectory upon completion.

Common Elements of Service Delivery

Administrators favored the impact of outside agents more than teachers did, according to the Likert analysis; however, the overall themes identified in the qualitative analysis suggested that the skills of the outside agent in combination with how systems change is approached impact whether lasting change occurs.

Summary of Mixed-Methods Results

Initial analysis indicated that changes to the service delivery for students with disabilities had occurred, and that, for the most part, this change was perceived as positive. Participants provided examples of change in their responses (quantitative and qualitative), indicating whether they perceived it to be complete and/or ongoing.

Summary

Interestingly, all of the individuals who requested to participate in the survey were specialists in the field and, in theory, were also represented in the statewide data used for this analysis. Some respondents indicated that they had not received services by the specific statewide technical assistance system. Each regional center reports services using a data collection tool that identifies a recipient's role and professional area. The statewide data indicated that no supports were provided to certain education professionals, though these individuals were represented in the responses received group.

Looking at the initial data, changes to the service delivery for students with disabilities were indicated in both the Likert responses and in 87.5% of all of the narrative responses. However, when analyzed using two-cycle coding, provisional then theoretical, it became less clear whether change had occurred. Both special and general educators reported confusion and anxiety over the changes they were tasked with in service delivery. Using the stages of concern framework, most responses indicated that change could have occurred but was not necessarily occurring at the time of this study. This is indicative of initial changes but not necessarily of systems change. Administrators responded more favorably to the supports of the outside agent, and this finding was approaching statistical significance suggesting further study is needed.

Chapter V

Discussion

Implementation of The No Child Left Behind Act (NCLB) of 2001 called for states to develop statewide systems of support (SSOS) to intervene in schools identified as low-performing. The purpose of establishing SSOS was to provide capacity-building technical assistance under P.L. 107-110, Sec. 1117 (a)(1). When reauthorized in 2015, The Every Student Succeeds Act (ESSA) requires implementation of technical assistance structures designed to improve student outcomes for all students, including students with disabilities (Hess & Eden, 2017). The Supreme Court's decision in *Endrew et al v. Douglas County School District* questioned the adequacy of current special education support structures for students with disabilities (*Endrew et al. v. Douglas County School District,* 2017). Determining how technical assistance provided by SSOS contributes to improving student outcomes, especially for students with disabilities, is critically important for refining current practice.

The purpose of this mixed-methods study was to examine how a mid-sized state's implementation of the statewide system of support provision, as outlined in NCLB, by incorporating an existing regional training and technical assistance system, focused on improving special education. This chapter includes a discussion of major findings as related to the literature on systems change in special education within the school improvement framework. Further, the perceptions of education professionals who have received services designed to improve special education service delivery via the statewide technical assistance system is evaluated.

In 2012, as part of the requirement for establishing a SSOS, the participating state enlisted an existing regional training and technical assistance system of support to address the

needs of students with disabilities within low-performing schools. A mixed-methods study was designed to collect and analyze data across five phases. Using a mixed-methods approach yielded a more complete analysis of changes in instructional practices resulting from technical assistance provided by the SSOS. The following five research questions were developed to investigate the critical research areas:

(R1): What types of education professionals, supports and service, and areas of focus have been requested?

(R2): As demonstrated by official requests for service, how have demands for requests changed over time and which districts have maintained a relationship with the statewide technical assistance system?

(R3): How do education professionals perceive the influence of the outside agent and organizational health of the district, and the role of the technical assistance provider in building relationships and supporting systems change?

(R4): How do education professionals perceive the influence of supports and services on whether specific changes to the instructional delivery for students with disabilities occurred?

(R5): What common elements of supports and services do education professionals perceive to facilitate positive changes in instructional practices for students with disabilities?

Summary of Findings

In 2012, as part of the requirement of establishing a SSOS, the participating state enlisted an existing regional training and technical assistance system of support to address the needs of students with disabilities within low-performing schools. Each research question for this study was explored using data collected within the period following the implementation of the state's

reorganization of the SSOS (July 2013–June 2016), prior to the passage and implementation of the Every Student Succeeds Act of 2015 (ESSA, 2015).

Requests for Service Analysis

The target state is divided into 132 school districts averaging 9,757 students per district. The average statewide December 1 count for associated districts is 1,276 students, resulting in a 14.0% average of students identified for special education services within each district. The statewide technical assistance system provides supports and services across eight Superintendent's regions via a university-based system. For each request for service submitted, multiple service types, professionals served, and topics could be identified resulting in percentages over 100% for some data.

This statewide system of university-based technical assistance is unique to this state. The structure for supports and services centers on youth with disabilities up to age 21. Supports and services are provided at the state, district, school and classroom level depending on identified needs. Intensity of services provided range from links to other agencies to embedded coaching in a classroom. When compared to models employed by other states, it is difficult to identify a similar structure to use for comparison.

Across the statewide system, education professionals represent the majority of individuals requesting assistance. For individual requests for service, multiple professionals were identified, resulting in cumulative percentages over 100%. Administrators represented 27.56% of the services requested, teachers represented 61.62%, and paraprofessionals represented 10.94%. Data collected on requests for supports and services indicate that the top three types of service requests are (a) information services (21.22%), (b) consult (15.15%), and (c) facilitate/attend meetings (9.93%). The least reported service requests were for link to consult (0.18%) and

referral (0.18%). For data reported on topical areas requested, multiple topics may have been reported, resulting in combined percentage totals equaling more than 100%. The topic of academics represented 76.5% of all service delivery requests. The topic of behavior was requested for 61.5% of all service delivery requests. Low-incidence requests account for only 9% of all service delivery requests.

Anomalies exist in the data which suggest errors in the original data set itself. For example, results from the blue region indicate 155% of all requested supports were for general educators and 51% were for paraprofessionals. In comparison with the remaining provider data reported in the blue region it is indicative of error in the data set. When looking at types of services provided, the red and black regions indicated significant differences in services provided as compared to other districts. Since multiple services could be reported at the same time, this could be indicative or reporting errors in these regions. When looking at topic areas of support provided, the violet region indicated significantly higher numbers of service when compared to other regions. Since multiple areas could be reported at the same time, this could be indicative or reporting error in this region.

Trends in Requests for Service

Using a two-level growth model controlling for district size (total population) and concentration of special education (December 1 child count), the top three districts projected by the Poisson regression to receive supports and services during the study period were identified for each region. Regional system specialists were asked to invite educational professionals who, while working for one of these districts, requested and received a minimum of three contacts during the 2016–2017 school year (AUCD, 2018). Since involvement with the statewide technical assistance system is voluntary, two districts projected by the model to have received

supports had not, and appropriate substitutions of the next highest projection were made by the researcher. The decision-making process of the divisions who chose not to work with the statewide technical assistance system was not a focus of this study. To maintain the confidentiality of local districts, only statewide and regional data was used in this analysis, and invitations to participate in this study were delivered via a third party to ensure anonymity.

Perception of Outside Agent Influence

Across the statewide, regionally based training-and-technical-assistance system, educational professionals perceive the influence of the statewide system as largely positive. Administrators consistently scored higher across all items compared to teachers. An overall trend was observed indicating that administrators had a more favorable response pattern. Administrators responses to items on capacity building, collaboration and the existence of internal supports were all higher than responses collected from teachers. These findings were approaching statistical significance suggesting further study is warranted. In six out of 10 collected Likert responses, education professionals who identified as general educators responded with higher scores than special educators did. There were no statistical differences in the responses for special educators compared to general educators on the Likert items. Likert responses were overall positive and suggestive of change in practice having occurred.

Administrators play a critical role in the school improvement process. They are tasked with improving instruction in individual classrooms while improving the school's overall performance. School administrators primarily receive support from their district leadership or other administrators within the district. It is possible that the favorable responses of administrators to teachers for the outside assistance are correlated with feeling supported in their challenging task of school improvement.

Perception of Outside Agent Skillset

Language regarding the skill set of the outside agent was documented within every qualitative response used in this analysis. In all but four entries, the skill set of the outside agent was referenced as having a positive impact on changing service delivery for students with disabilities. The methods used by the outside agents to facilitate systems change were documented in relation to achieving a change in service delivery for students with disabilities. Respondents referenced working collaboratively and in a supportive manner, resulting in perceived changes. Respondents indicated that the lack of alternatives would likely have led to them continuing with the same approach or, depending on district-level supports, to make changes in service delivery. Searching for support online was cited numerous times as an alternative to reaching out to direct services. Multiple entries referenced lack of funding to secure outside assistance from independent contractors. Respondents indicated the ongoing need for supports and services to be readily available in special education. Special education service delivery was described as an area in which education professionals will always need support due to the individual differences presented by students. It is interesting to note that not all respondents felt as though they had received supports or services based on the terminology in the survey.

In looking at the Likert response data, it was evident that consumers initially believed a change had occurred and were satisfied. However, when analyzed in comparison with the stages of concern, it was evident that the difference between initial change and systems change may not have been clearly understood. Likert responses were overall positive and suggestive of change having occurred. When analyzed in comparison to the theoretical framework, the educators reported confusion and anxiety about the changes they were tasked with implementing. In the

qualitative responses, it was clear that the change process was ongoing, but that there was no clear understanding of its trajectory upon completion. A potential area for further exploration is the understanding of the change process from the perspectives of both the outside agent and professionals requesting supports.

Perception of Changes to Service Delivery

An initial review of participants responses suggested a change in instruction or services for students with disabilities, including change language in 87.5% of all responses. First-cycle provisional coding revealed four major themes, which indicated that establishing the nature of change is directly related to the skill set of the outside agent and the relationship between those involved. Second-cycle theoretical coding using the stages of concern framework indicated that lasting change was evident in 12.6% of all responses. In applying the theoretical framework of system change theory, evidence suggests that the lack of sustainable change was linked to a lack of vision and/or specific skill sets needed to create lasting change.

This study was unable to determine the common elements of support and services perceived the facilitate positive changes in instructional practices for students with disabilities. In analyzing quantitative and qualitative responses confusion exists on whether systems change occurred. Given this finding, additional inquiries are needed to determine the scope of changes resulting from supports and services and common elements associated with positive changes to instructional delivery. It is possible that the perspectives on intended changes between professional requesting support and outside agents is an area in need of alignment.

Interpretation of the Findings

The findings of this study align with both the current and seminal literature on systems change in education (Villa & Thousand, 2000; von Bertalanffy, 1968). Change efforts in

education are slow and often fail because efforts designed to elicit change do not recognize the relationships between parts of the macro and micro system. Within education two distinct entities exist, separated by both policy and practice: General Education and Special Education. Supports and services designed to improve instructional practices for students with disabilities must address the change process within both entities to achieve systems change.

The purposive sample was composed largely of administrators and teachers from both general and special education. While the perception of the statewide system and the incidence of change having occurred are largely positive in the quantitative data, qualitative data reveals perceived changes to be fragile at best. While collaboration was noted in responses as contributing to change, respondents also noted that working with the statewide system was a forced choice, since no alternative was available. A major theme from the qualitative data suggests that specifically establishing the nature of the expected change may be directly related to the skill set of the outside agent and the relationship among all parties.

In applying the framework of systems change (Ambrose, 1987; Hall & Hord, 2015) and the framework for the implementation of a Statewide System of Support (Lane, Seager & Frankel, 2005), three essential elements also serve as potential barriers for successful outcomes: (a) focus of efforts (b) service delivery, and (c) organizational health. A statewide system of support provides a structure through which the supports and services designed to improve practice and student outcomes can be achieved. The application of systems change theory within the framework of a statewide system of support recognizes that change is not a linear process but implemented across multiple entities at the same time (Airola et al., 2014; Nehring & O'Brien, 2012). This makes measuring the occurrence of change difficult.

The findings of this study would confirm that these three essential elements (a) focus of efforts (b) service delivery, and (c) organizational health can create both opportunities to inspire and suppress effective changes in practice. The perceived skill level of the outside agent was documented within every qualitative response used in this study. The methods of the outside agent in focusing the effort to improve services for students with disabilities, while at the same time also facilitating systems change, were linked to perceptions of positive outcomes. While the skills of the outside agent appear linked to positive outcomes, the opportunity to choose preferred methods of service delivery also play a role. Respondents referenced the lack of alternatives to working with the statewide system, and cited funding and availability of outside resources as a source of frustration. An unexpected outcome of these findings was the lack of discussion regarding the role of the organizational health of the district in the change process. Previous research cited dysfunction, such as high turnover rates and a lack of internal resources, as a barrier to change. However, this finding was not confirmed in data collected from this purposive sample.

Organizational health is a predictor of successful systems change (McInerney & Hamilton, 2007; Nehring & O'Brien, 2012). Research suggests that poor leadership and limited understanding of the change process would likely have a negative impact on any intended change (Nehring & O'Brien, 2012). This was not identified in this study as having influenced the perception of change having occurred. It is unclear from this study whether organizational health had any impact on the outside agent's ability to focus on capacity-building versus immediate changes in practice. Previously conducted research has linked a lack of attention to building capacity to ineffective systems change (McInerney & Hamilton, 2007).

The results outlined in *The National Evaluation of the Comprehensive Technical Assistance Centers: Final Report* (Turnbull et al., 2011), also focused on the perception of individuals receiving supports and services. This research used three measures of the perception of outside technical assistance, but did not include measures of change efforts or practices specifically. The results of this research emphasize the importance of exploring the development of measures specifically targeted at the change process and at outcomes of the change process. In 2015, the Every Student Succeeds Act replaced the No Child Left Behind Act of 2001 (ESSA, 2015). While some language and areas of focus changed, language surrounding the purpose of technical assistance remained the same, "to improve instruction" (ESSA, Section 1114(b)(3)(IV)). Evaluations of supports and services which focus primarily or exclusively on demographics and satisfaction are not conclusive in providing evidence of change occurring. Change in education is largely measured by changes in student assessment data, which may not be sensitive enough to measure the influence of outside agents working to change instructional practices for students with disabilities.

Implications

The results of this research are not generalizable to all SSOS, since each state developed their system to meet the unique needs of students; however, the results can be used when reflecting on how SSOS impact student outcomes specifically.

Practice

The passage of the Every Student Succeeds Act (ESSA) of 2015 provides states the opportunity to reflect upon the implementation of statewide systems of support designed to improve instruction. We must evaluate the effectiveness of each system and enhance the implementation of each to achieve a coherent system designed to improve our overall system of

education (Council of Chief State School Officers, nd). Despite changes in education legislation, the need for increased access and systematic implementation of technical assistance remains a priority to ensure the success of students with disabilities within our education system. The focus of this statewide systems of support must shift away from compliance-driven models, which collect data only with respect to adherence to a regulation (CCSSO, nd). To find success under the new provisions in the ESSA, we need to advance our systems designed to improve instruction. To do this, we must focus on documenting changes occurring in instructional practices and on correlating this documentation with school improvement objectives within the technical assistance provided.

In 1999, the University of Kentucky conducted an independent program evaluation to determine the impact of supports and services on student outcomes from this state's existing technical assistance system (Zantal-Weiner, et al., 1999). This program evaluation concluded that the work of the statewide system had limited direct impact on student outcomes. Due to the structure of the technical assistance, an evaluation of long-term effects on at-risk populations would be needed to determine impact (Zantal-Weiner, 1999). Since the publication of this program evaluation in 1999, the data collection tools and processes used by this statewide technical assistance system have remained stable. In light of recent education legislation, a change in the data collection system may be warranted.

Supports and services designed to improve instruction for students with disabilities are an opportunity to discuss and reflect on the identification and implementation of evidence-based interventions (CCSSO, nd). This conversation cannot be dependent upon compliance data alone; nor should it occur outside of the larger context of school improvement. An aligned system of

data collection should focus on evidence of change within the larger statewide systemic improvement process (CCSSO, nd).

Point of service evaluation techniques, used in the fields of medicine and sales, could be explored for application to this statewide technical assistance system. In a point of service evaluation model, consumers are asked to respond to a short survey as the result of services rendered. For example, when a patient goes to the doctor a few days later a short survey to evaluate those services is sent via text or email. Over time, individual responses can be linked to provide on-going evaluation and feedback of the services provided. In evaluating the statewide technical assistance system, point of service evaluation could focus on changes occurring or not occurring as the result of services provided.

Policy

In 2009, the American Institute of Research published its report, *State Support for School Improvement: School-Level Perceptions of Policy,* which summarized data collected from 21 low-performing schools to determine factors which influence the quality of external school improvement efforts (Boyle, LeFloch, Therriault & Holzman, 2009). When collecting data on the quality of interventions, responses often turned either to how supports fit with the overall plan for school improvement or to how responses fit with the original request for assistance (Boyle, et al., 2009). This suggests that the relationship between the service provider and the school/district plays an essential role in whether perceived changes reflect the quality of external supports (Boyle, et al., 2009).

This research summarized several dimensions of supports provided and correlated each to the perceived quality of intervention. Factors such as fit of intervention identified, responsiveness of the outside agent, and coherence of supports impacted the way supports were

perceived. Most of the factors identified are correlated to the relationship which exists between the school/district and the outside agent. The findings of this research support the findings of the research conducted by the American Institutes of Research in 2009. Relationships, and the skills of the outside agents who support a school/district are key factors in the perception on quality of supports (Boyle, et al., 2009). Many respondents indicated the statewide technical assistance system was the only option available that would allow them to comply with mandated changes in practice.

A forced choice in of itself creates a negative perception, which is only further exacerbated if the outside agent fails to build and maintain a positive relationship. This research confirms the importance of a relationship based on trust as a necessary component to facilitating change. A recommendation would be to explore options that would allow districts the opportunity to have a genuine choice of seeking assistance in complying with state mandates to improve instruction. This may not be possible in every case but could certainly prove to be powerful in districts which have struggled to achieve change despite extensive, ongoing assistance from the statewide technical assistance system.

Beginning in 2014, the United States Department of Education shifted evaluations of technical assistance to include both compliance and impact data (Sites.ed.gov, 2018). Specific to technical assistance systems, states are now required to report delivery of "high quality, evidence-based technical assistance" (Sites.ed.gov, 2018). Without collecting on-going feedback on changes resulting from technical assistance delivery it would be difficult to meet this new reporting requirement.

Research

There exists little definitive research linking the existence of large-scale technical assistance efforts by states to improved educational outcomes for students with disabilities. In 2012, a large-scale research effort conducted in California attempted to capture evidence linking technical assistance provided through a statewide system of support and increased student achievement (Strunk, McEachin & Westover, 2012). This research focused on the implementation of District Assistance and Intervention Teams (DAIT)). This longitudinal research used mixed methods to follow districts over a five-year period, some of which were supported by a DAIT (state directed technical assistance) and some of which were not.

This research concluded there is sufficient evidence to demonstrate that districts supported by a DAIT saw increased math achievement (Strunk, McEachin & Westover, 2012). An interesting finding of this research was that some districts supported by a DAIT improved achievement in reading more than others. These differences were linked to local context and culture. California's highly structured DAIT model of providing statewide technical assistance is more effective than other outside technical assistance opportunities in improving student outcomes. While this research is encouraging, students in the lowest-performing tiers did not see as much improvement as did higher performing students. This research concludes that it is problematic to determine the specific effect of the structured DAIT intervention on specific groups of low-achieving students such as students with disabilities (Strunk, McEachin & Westover, 2012). With the current emphasis on successful participation in the general education curriculum for students with disabilities, more research is needed to determine how this type of structured, statewide technical assistance approach can be used to improve instruction for students with disabilities specifically.

The model for delivery of supports and services employed by the target state drives consideration for future study on the impact of supports and services. The target state is unique in providing supports and services targeted at all youth across all categories of disability up to age 21. In addition to focus, supports and services are simultaneously delivered at the state, district, school and classroom levels each with a different method of technical assistance ranging from facilitation to embedded coaching. A comprehensive study across all models of service delivery within the target state's technical assistance delivery system would warrant greater understanding as to developing a comprehensive system of evaluation.

Limitations

This study made the following assumptions: (a) participation among all parties was voluntary; (b) all responses were collected anonymously via third party and no attempts were made to deidentify responses; and (c) all participants had knowledge of the statewide technical assistance system serving as an outside agent within their respective district and/or school during the study period. The data generated by the online survey instrument resulted in meaningful findings collected from a purposive sample population of individuals who received supports and services from the statewide technical assistance system after changes to the focus for that system occurred (July 2013- June 2016). In maintaining the anonymity of respondents, collection of survey responses via a third-party limits follow-up inquiry with the selected population.

The identification of a purposive sample was limited by the comprehensive data collection system currently used by the statewide technical assistance system. Individual outside agents self-report both activity and individual demographics, which get uploaded into a statewide database. While controls exist within the system for data integrity, the results of this research indicate that discrepancies within this database may exist. The process of identifying a purposive

sample creates a natural delimitation, because a very select population was targeted for participation (Creswell, 2006). Individuals outside of districts, such as parents, were not included in this study. There are individuals who received supports and services from the statewide technical assistance system during the study period who were not invited to participate as they were not members of the identified purposive sample. This research provides a state-level view of how education professionals perceive the supports and services of the statewide technical assistance system. This research does not represent a comprehensive review of supports and services at the statewide, regional or district level.

When comparing the actual statewide data to the data collected from the purposive sample, they are different, and this finding was statistically significant. Because survey invitations were extended via third party to protect anonymity, it is not possible to determine the similarity of the overall population invited to participate. The actual collected sample represented more services provided to address academic and behavioral concerns than expected from baseline statewide data. Respondents to the survey who identified with a special education affiliation responded with greater frequency than expected. Those identifying as general education affiliation responded with lesser frequency than expected.

This study was unable to secure a finding for the second half of the fifth research question: common elements of support perceived to facilitate positive changes in instructional practices. It is possible this was the result of confusion as to what constituted a change in instruction.

Conclusion

The purpose of this research was to examine how a mid-sized state's implementation of the statewide system of support provision, as outline in The No Child Left Behind Act of 2001,

by incorporating an existing regional training and technical assistance system, focused on improving special education, and whether it impacted instructional delivery for students with disabilities. Educational professionals are requesting supports and services from the statewide technical assistance system for various areas of focus. When applying a growth model to predict a purposive sample, the model used accurately predicted twenty-two out of twenty-four districts chosen for the purposive sample. Interestingly, not all individuals invited to participate via third party considered themselves to have received services from the statewide technical assistance system. This is either a flaw in the current methods of collecting demographic information on consumers who access services, or confusion among consumers with regard to which state-sponsored organization is directing their supports and services.

In 2012, this state's technical assistance system shifted focus to schools identified as in need of services to improve instruction under school improvement guidelines. Administrators consistently scored higher than teachers across all ten Likert items. This finding suggests further study is warranted for items probing on capacity-building efforts, collaboration and existence of internal supports. The results may be reflective of the focus of supports and services on school improvement efforts leading to increased interaction with administrators regarding school improvement needs.

Research conducted by Hall and Hord (2015) concluded that evidence of learning can be used as evidence of change. This research finds documentation of professional learning to be critical in authenticating evidence of systems change in education (Hall & Hord, 2015). The current research supports this finding. A chief recommendation resulting from this study is the creation of an evaluation mechanism which would capture evidence of learning as evidence of a change in practice. In analyzing simple quantitative responses, this research suggests that change

occurs and is largely positive most of the time. However, in analyzing qualitative responses by applying the systems change frameworks of Ambrose (1987) and Hall and Hord (2015), we learn that while there is a perception of change having occurred, respondents do not have a clear understanding of what constitutes a change. When combining qualitative and quantitative responses, it is clear that delivery of instruction may be different, and that those differences are largely perceived as positive, but no evidence emerged to suggest that large-scale systems change occurred.

This research was localized to identified districts that received supports and services within a specific time of study. Districts receiving these supports and services would have received supports through the contextual lens of school improvement. It is possible that the umbrella of school improvement obscured the participant's ability to identify specific changes relative to students with disabilities. In evaluating the current system of collecting program evaluation data for this mid-sized state's technical assistance system, one recommendation would be that more attention be given to identifying ways in which specific data can be collected on whether instructional practices change as a result of services.

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Appendix A: Data Collection Tool

Request for Service/Training and Technical Assistance

Region: _____
Date Request Received: _____ Date of Service: _____ Date Entered: _____
Date DTAT Received: _____ Date of Initial Contact: _____
Staff Lead: _____

Who is Providing the Service?

☐ Region 1 ☐ Region 2 ☐ Region 3 ☐ Region 4 ☐ Region 5 ☐ Region 6 ☐ Region 7 ☐ Region 8

Who is Receiving the Service?

_____ _____ _____
Name (Service Provider) Title Email

__

_____ _____

_____

School Name/Agency School District/SOP/Multiple OR Other

_____

_____

Address Phone

_____ _____ _____
City State Zip

Title (Service Providers) Please enter number of providers		
__ Administrator, GE	__ Occupational Therapist	__ Teacher, GE
__ Administrator, SE	__ Paraprofessional	__ Teacher, SE
__ Behavior Specialist	__ Parent/Family	__ Transition Coordinator
__ College Student	__ Physical Therapist	__ University Faculty
__ Guidance Counselor	__ Pre-K – 12 Student	__ Voc. Teacher/Admin
__ Human Services Agency Staff	__ Social Worker	__ Other (Please describe) _____
__ Mental Health Specialist	__ Speech Pathologist	

Program Affiliation (Check all that apply)		
☐ Adult Ed./Family Literacy	☐ General (or Regular) Ed.	☐ Preschool Initiative
☐ Community-Based Preschool	☐ Head Start	☐ School Age Spec. Ed.
☐ Early Childhood Spec. Ed.	☐ Homeless	☐ Title 1

☐ Early Intervention	☐ Migrant Education	☐ Other (Please Describe) _____
☐ Even Start	☐ Occupational Child Care	

Service Delivery Methods (Check all that apply)	
☐ Consult: Distance	☐ Link: Consult
☐ Consult: Off Site	☐ Link: Information
☐ Consult: On Site	☐ Link: Phone
☐ Facilitate/Attend Team Meeting	☐ Link: PD Event
☐ Information Services	☐ Referral
☐ Library	

Disability Descriptions (Check all that apply)	
☐ ADD/ADHD	☐ LD
☐ ASD	☐ MD
☐ Blind	☐ OHI
☐ Deaf-Blind	☐ OI
☐ Deaf	☐ SLI
☐Dev. Delay	☐ TBI
☐ ED	☐ VI
☐ HI	☐ **ALL**
☐ID (formerly MR)	

What Services are Being Provided?

Content Areas (Check all that apply)		
☐ Assessment	☐ ICT	☐ Sensory
☐ Behavior	☐ IEP/IFSP/504	☐ SIM Strategies
☐ Child Find	☐ Inclusive Practices	☐ Social Skills
☐ Classroom Management	☐ Math	☐ Technology
☐ Collaboration/Team Building	☐ Medical	☐ Transition – Preschool
☐ Community-Based Instruction	☐ Parent/Family	☐ Transition – Misc
☐ Curriculum/Instructional Methods	☐ Reading	☐ Vocational/Employment
☐ Disability Characteristics	☐ School Safety	☐ Writing
☐ Feeding/Oral Motor	☐ Self-Determination	☐ Other (Please describe) _____

Description/Comments:

_____

_____

_____

_____

Age of Students Targeted

☐ Birth – 3 years
☐ 3 – 5 years
☐ Birth – 5 years
☐ Grades K – 5
☐ Grades 6 – 8
☐ Grades 9 - 12

Through What Mechanisms are Services Being Provided?

☐ State-Directed Project (select from State-Directed Project list below)

☐ None of the above

State-Directed Project List

☐ PBIS

Other Information

_____

TA Provider(s)

_____

Consultant Name(s)

Approaches this session addresses: (Check all that apply)

☐ Using performance-based results for program improvement

☐ Working with partners to improve special education

☐ Improving academic literacy for students with disabilities

☐ Improving collaborative skills for those who work with students with disabilities

☐ Supporting efforts to increaser the supply and diversity of qualitied personnel to serve children and youth
with disabilities

☐ Improving functional performance for students with disabilities

☐ Supporting cultural and linguistic diversity

Appendix B: Draft Survey Protocol with Explanation

Section 1: Overview of Study and Consent Agreement

- Must agree to continue onto survey.
- If declined, participant moves to Section 5.

Section 2: Demographic Information

Used to verify responses for analysis. Separated from data collected in Sections 3 and 4 prior to analysis.

Demographic Questions	Retention Criteria	Response Method
1. Which district employed you during the 2016–2017 school year?	Must identify as having worked in one of the districts identified in the purposive sample identified in Phase I.	Pull down menu of all 132 school districts.
2. Did you receive supports and/or services from a regional Training and Technical Assistance Center during the 2016–2017 school year?	Must answer "Yes" to having received supports and services from a regional technical assistance provider during the 2016–2017 school year.	Pull down menu, forced choice of "Yes" or "No."
3. How many contacts did you have with personnel from the regional technical assistance center during the 2016–2017 school year?	Must choose "3 or more" out of the available list to be eligible for analysis.	Forced Choice of one: 0 – received no contacts for supports or services during the 2016–2017 school year. 1 – received one or two contacts for supports or services during the 2016–2017 school year. 2 - received three or more contacts for supports or services during the 2016–2017 school year.

Section 3: Quantitative Data Collection

Contains three demographic/background questions and Likert scale response to 10 belief statements.

Section 3a: Demographic Questions (Non-Identifying)

1. What is your role as an educational professional? (choose only one)
   - As listed on the official requests for services data collection tool

2. What was the content focus of the supports and services received by [the regional technical assistance provider]? (check all that apply)
    - As listed on the official requests for services data collection tool
3. Approximately how many contacts did you have with [the regional technical assistance provider] during the 2016–2017 school year? Please consider all interactions either in person or electronic (open response)

Section 3b: Belief Statement Responses

[Regional provider] will be replaced with organization's official name on distributed surveys.

Please respond to these belief statements using the following Likert Scale:

1 = Strongly Disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly Agree

1. The supports and services delivered by my [regional technical assistance provider] impacted my instructional practices for students with disabilities.

2. The supports and services delivered by my [regional technical assistance provider] focused on building capacity and facilitating systems change.

3. The [regional technical assistance provider] worked collaboratively to make changes in instructional practice accessible and possible given the needs of my district/school.

4. The [regional technical assistance provider] demonstrated high levels of skills and knowledge regarding interventions to address the needs of my district/school.

5. The [regional technical assistance provider] clearly articulated intended outcomes and understood the goals identified by my district/school.

6. The [regional technical assistance provider] established effective communication channel which built trust.

7. The [regional technical assistance provider] demonstrated flexibility while working collaboratively to meet the unique needs of my district/school/classroom.

8. My district/school has an established, internal system of support for improving instructional practices.

9. My district/school values the contributions of my [regional technical assistance provider] in improving instructional practices for students with disabilities.

10. My district/school has experienced high rates of staff turnover in recent years.

Section 4: Qualitative Data Collection

Open ended, narrative response.

1. Describe in detail the supports and services you received from [regional provider] during the 2016–2017 school year?

2. Did the supports and services from [regional provider] result in changes to instructional practices for students with disabilities? Please describe in detail.

3. Do you have additional concerns regarding instruction for students with disabilities? Please describe in detail.

4. If [regional provider] had not provided the supports and services as described in question 1, how would you have addressed the concern?

Section 5: Completion Indicator and Appreciation for Participation Statement