K-8 SPEECH-LANGUAGE PATHOLOGISTS’ TRAINING AND IMPLEMENTATION OF
RESEARCH-BASED BEHAVIORAL INTERVENTION STRATEGIES

By

Ruth A. Scherschligt

B.A., University of South Dakota, Vermillion, 1998
M.B.A., Texas Tech University, Lubbock, 2004

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Abstract

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Dissertation directed by Dr. Susan Gapp

The purpose of this study was to examine school-based speech-language pathologists' (SLPs') training and implementation of research-based behavioral intervention strategies. The study also sought to determine if there were statistically significant differences in the level of SLP training and implementation based on size of school district and years of experience in the field. Nonexperimental, quantitative, survey research methods were used to gather the data. Responses were downloaded from Qualtrics to SPSS and multiple independent sample 2-tailed t-tests were completed. At the beginning of the data collection period, a researcher-developed survey with 21 response items was distributed via a Qualtrics link to current members of the American Speech-Language & Hearing Association (ASHA). At the conclusion of the data collection period, there were 78 qualified respondents that completed the survey. Results indicated that SLPs in the study had some training in research-based behavioral intervention strategies and that these strategies were implemented sometimes during speech therapy sessions. Further, results indicated that there was no statistically significant difference in SLP level of training or implementation based on years of experience or size of school district. Additional information gathering from the survey provided further insight on the types of behaviors that SLPs encountered during speech therapy sessions and how those behaviors negatively impacted their ability to provide services as well as their overall job satisfaction. The results of this study indicate the SLPs require additional professional development in research-based behavioral intervention strategies.

It should be noted that the students discussed in this research are not necessarily diagnosed with an Emotional Disturbance (ED), but only exhibit disruptive behaviors consistent with an ED. Further, ED is the diagnosis used in educational settings, based on the Individuals with Disabilities Education Act (IDEA) and diagnosed via completion of the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) as well as input from all stakeholders. This research does not explicitly include students diagnosed by a mental health professional in a healthcare setting.

This abstract of approximately 300 words is approved as to form and content. I recommend its publication.

Dr. Susan Gapp, Dissertation Chair
DOCTORAL COMMITTEE

The members of the Committee appointed to examine
the Dissertation of Ruth Scherschligt
find it satisfactory and recommend that it be accepted.

Chairperson

DocuSigned by:
Susan Gapp
FDF2268326774D...

DocuSigned by:
Hylle Brouwer
53c32179c9c8a0a01...

DocuSigned by:
Marly Drew
6200e7be9421443...

iv
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TABLE OF CONTENTS

Abstract.........................................................................................................................iii
Doctoral Committee........................................................................................................iv
Acknowledgements..........................................................................................................v
Table of Contents............................................................................................................vi
List of Tables..................................................................................................................ix
List of Figures................................................................................................................x

CHAPTER 1 ..................................................................................................................... 1

Statement of Problem..................................................................................................... 4
Purpose of the Study......................................................................................................... 5
Significance of Study......................................................................................................... 6
Research Questions.......................................................................................................... 6
Definition of Terms.......................................................................................................... 6
Limitations and Delimitations: ....................................................................................... 8
Assumptions:..................................................................................................................... 8
Organization of the Study................................................................................................. 8

CHAPTER 2 .................................................................................................................. 10

Prevalence of Diagnosed Emotional Disturbance and Speech or Language Impairments ......................................................................................................................... 10
Impact of Behavioral Difficulties and Speech or Language Impairments on Academic Outcomes .................................................................................................................. 13
Disruptive Behaviors Exhibited by Children with Behavioral Difficulties ............ 16

Effective Research-Based Behavioral Intervention Strategies for Improving Long-term Outcomes ................................................................................................................................................ 17

Comorbidity of Emotional Disturbance and Speech or Language Impairment........... 22

Chronology of the Speech-Language Pathologists’ Role in Elementary School Settings in the United States ................................................................................................................................... 23

Conclusion ........................................................................................................................................................................ 24

Organization of the Remainder of the Study ................................................................. 25

CHAPTER 3 .................................................................................................................................................................. 26

Research Questions ......................................................................................................................... 26

Review of Related Literature ............................................................................................................ 27

Population ................................................................................................................................................................. 27

Research Design ....................................................................................................................................................... 28

Instrumentation ......................................................................................................................................................... 30

Data Collection ....................................................................................................................................................... 33

Data Analysis ............................................................................................................................................................ 34

CHAPTER 4 ................................................................................................................................................................ 35

Response Rate .......................................................................................................................................................... 35

Demographic Data .................................................................................................................................................... 35

Findings...................................................................................................................................................................... 38
Summary .............................................................................................................................................. 59

CHAPTER 5 ........................................................................................................................................... 61

Purpose of Study .................................................................................................................................. 61

Research Questions ................................................................................................................................. 61

Summary of Literature Review ............................................................................................................... 62

Research Design .................................................................................................................................... 64

Findings .................................................................................................................................................. 65

Conclusions ............................................................................................................................................ 69

Discussion ............................................................................................................................................. 70

Recommendations for Practice ................................................................................................................ 71

Recommendations for Further Study ...................................................................................................... 71

References ............................................................................................................................................. 73

Appendices ............................................................................................................................................ 85

Appendix A Speech-Language Pathologist Training and Implementation Questionnaire
........................................................................................................................................................................ 86

Appendix B Survey Research Matrix ...................................................................................................... 98

Appendix C Survey Pre-Notification Post ............................................................................................... 105

Appendix D Survey Invitation to Participate Post ................................................................................... 107

Appendix E Survey Follow-Up Post ...................................................................................................... 109
LIST OF TABLES

1. Number of Respondents by State ................................................................. 37
2. SLPs’ Level of Training in Research-Based Behavioral Intervention Strategies ................................................................. 40
3. SLPs’ Level of Training in Each Individual Research-Based Behavioral Intervention Strategy .................................................. 40
4. SLP Implementation of Research-Based Behavioral Intervention Strategies ................................................................. 42
5. SLP Implementation of Each Individual Research-Based Behavioral Intervention Strategy .................................................. 43
6. Independent Samples 2-Tailed T-Test for SLP Level of Training in Behavioral Intervention Strategies (Novice vs. Experienced) ................................................................. 44
7. Independent Samples 2-Tailed T-Test for SLP Level of Implementation of Behavioral Intervention Strategies (Novice vs. Experienced) ................................................................. 45
8. Independent Samples 2-Tailed T-Test for SLP Level of Training in Behavioral Intervention Strategies (Small vs. Large School District) ................................................................. 47
9. Independent Samples 2-Tailed T-Test for SLP Level of Implementation of Behavioral Intervention Strategies (Small vs. Large School District) ................................................................. 48
10. Disruptive Behaviors SLP has Encountered in the Last 3 Years ................................................................. 50
11. Where SLP Respondents Received Previous Behavioral Intervention Strategies Training ................................................................. 52
12. Specific Behavioral-Related Topic of Professional Development Previously Offered by SLP’s School District ................................................................. 53
LIST OF FIGURES

1. Number of Students in SLP’s Caseload.........................................................49

2. Level of Impact of Student Behavioral Issues on SLPs’ Ability to Provide
   Speech Services..........................................................................................55

3. Percentage of Time SLP Spends Addressing Student Behavior
   Issues Each Week.......................................................................................56
CHAPTER 1

Introduction

More so than ever, there are a substantial number of children exhibiting disruptive behaviors in schools. These include children with a diagnosed Emotional Disturbance (ED) and those without (Niesyn, 2009). According to the Center for Disease Control (CDC), 13-20% of US children suffer from a mental illness which often manifests in behavioral difficulties. The National Survey of Children’s Health reflects parent-reported data indicating that 4.6% of children ages 3-17 had a history of disruptive behaviors.

Behavioral difficulties have a negative impact on students’ academic, social and emotional outcomes. These students have lower proficiency in math and reading, which does not improve over time (State, Simonsen, Hrn, & Wills, 2019). The achievement gap faced by students with behavioral difficulties results in a significantly higher risk of school dropout (Harrison, McLeod, Berthelsen, & Walker, 2009). But, the negative impacts are not limited to school settings. Students with behavioral difficulties often have poorer transition outcomes after leaving school and their employment rates are significantly lower than their peers (Nochajski & Schweitzer, 2014). Further, of students with behavioral difficulties who do obtain a job, the retention rate is low with a majority leaving their job within 12 months (Kang-Yi & Adams, 2017).

The research is clear that children with behavioral difficulties need more explicit, research-based, cross-disciplinary interventions during the elementary school years in order to improve overall long-term social, emotional, and academic outcomes (State et al., 2019; Lieberman, 2018). Strategies for children with behavioral difficulties need to be consistently
applied across all school settings (classroom, speech, resource, etc.) and focus on research-based behavioral interventions. “Isolated efforts of individuals, including individual disciplines, cannot solve all problems or significantly improve the outcomes of children in a disciplinary vacuum. Rather, a holistic, interprofessional approach is required - this involves a major paradigm shift beyond the current system of silos” (Lennox, Garvis, & Westerveld, 2017, p. 18). It is critical that all education professionals who interact with children are not only trained in, but also actively implementing, research-based behavioral intervention strategies in support of their students with behavioral difficulties (State et al., 2019).

But, many education professionals in school settings struggle to effectively work with students who have behavioral difficulties. In a study completed by Sutherland, Conroy, Algina, & Kunemund (2018), 185 early childhood education teachers were questioned about their confidence in implementing behavior intervention strategies. Results showed that there were a statistically significant number of teachers who did not feel confident. In another recent study, the findings were similar, with a majority of teachers surveyed responding that they did not have sufficient behavioral intervention training (State et al., 2019). These, and other studies, indicate that many educational professionals are not adequately trained in behavioral intervention strategies. This issue should be addressed as “it is important to offer professional development for target staff to develop greater expertise to meet the specific needs of a school” (Stormont et al., 2011, p. 145).

There are many effective research-based behavioral intervention strategies in existence that have been shown to improve outcomes for students with behavioral difficulties. The most universally accepted strategies by educational professionals in the field come from the What Works Clearinghouse (https://ies.ed.gov/ncee/wwc/) and include:
● Setting well-defined limits, rules and task expectations (Lieberman, 2018; Lukowiak, 2010; Mitchell, Kern, & Conroy, 2019).

● Establishing consistent routines for students in all school settings (Bak & Asaro-Saddler, 2013; Lukowiak, 2010).

● Setting easily attainable daily goals (Bak & Asaro-Saddler, 2013).

● Using nonverbal signals for appropriate behaviors (Mitchell et al., 2018; Niesyn, 2009).

● Frequent verbal reinforcement for appropriate behavior (Lukowiak, 2010; Lieberman, 2018; Mitchell et al., 2018).

● Planned ignoring of minor inappropriate behavior (Hester, Hendrickson, & Gable, 2009; Karusa, Sert, Demirtas, Atbasi, & Aykut, 2019).

● Verbal reminders of classroom rules as needed (Lieberman, 2018; Lukowiak, 2010).

● Earned activities and privileges (Lukowiak, 2010; Mitchell et al., 2018).

● Work completion contracts (Bak & Asaro-Saddler, 2013; Lukowiak, 2010).

● Documented self-monitoring of behaviors (Lieberman, 2018; Lukowiak, 2010; Mitchell et al., 2018).

● Points system/token economy (Bak & Asaro-Saddler, 2013; Lukowiak, 2010; Karasu et al., 2019).

● Home-school reward system (Lukowiak, 2010).

These, and other research-based strategies, have been shown to improve social, emotional and academic outcomes for students with behavioral difficulties.

In addition to an increased number of students with diagnosed ED, there has also been a significant rise of comorbidity in elementary-age children who also have a diagnosed speech or language impairment (SLI) with some researchers finding comorbidity of ED and SLI as high at
50% (Lieberman, 2018; McKeen, Reilly, Bavin, Bretherton, Cini, Conway, Cook, Eadie, Prior, Wake, & Mensah, 2017). Many children with an SLI already have significant challenges at school. For example, children diagnosed with SLI in early childhood have poorer literacy outcomes over many years, even into middle school (Lewis, Freebairn, Tag, Ciesla, Iyengar, Stein, & Taylor, 2015). And young children with SLI are frequently rated by their teachers as being less prepared for school both socially and behaviorally (Pentimonti, 2016). Additionally, research shows that 28%-50% of children under the age of 12 with an SLI are victims of physical or verbal bullying compared to 12%-22% of their non-disabled peers (van den Bedem, Dockrell, van Alphen, Kalicharan, & Rieffe, 2018).

Historically, interventions for students with SLI, regardless of a comorbid diagnosis of ED, have been limited in scope to speech pathology (Brumbaugh & Smit, 2013). But a growing body of evidence shows that this narrow focus is not enough to improve outcomes for these students (Giangreco, Prelock & Turnbull, 2010). An interview study in England completed by Parow (2009) asked for Speech-Language Pathologists’ (SLPs’) views on serving students with ED. The responses revealed that 25% felt they did not have adequate training to effectively work with this group of students. Further, 11% of the respondents said that behavioral difficulties regularly interfered with their ability to provide therapy and assessment (Parow, 2009). It is possible that school-based SLPs in the United States face similar challenges.

**Statement of Problem**

There are an increasing number of children in US schools with behavioral difficulties both those with a diagnosed ED and those without. A significant number of these children suffer from comorbid ED and SLI (Lieberman, 2018). This trend has been a challenging issue for schools on many levels. Although there is limited data available on the specific strategies
schools have attempted in order to address this challenge, it is documented that school spending on FTE (full-time) behavioral support staff continues to grow. According to The City Council of the City of New York Fiscal 2020 Preliminary Plan, spending on Special Education Instructional Support (which focuses on behavioral support of students with autism, cognitive impairment, and severe emotional challenges) for full-time, salaried, non-pedagogical, personal services staff is projected to be $130 million. This is a $1.4 million increase from the FY19 preliminary plan (Report of the Finance Division on the Fiscal 2020 Preliminary Plan Department of Education, 2019, p. 26). Albeit additional staffing is helpful, behavior interventions can not be successfully implemented by a relatively small group of behavioral support staff. There needs to be a school-wide effort of all educational professionals who interact with students in order to affect real change in student behavior (State et al., 2019).

Currently, SLPs in the education field may have gaps in their training as it relates to research-based behavioral intervention strategies for supporting and working with students with behavioral difficulties (State et al., 2019). Students’ comorbid SLI and ED, either diagnosed or undiagnosed, negatively impacts their school outcomes (Pentimonti, 2016; Mroz, 2015). Thus, it is important to develop an understanding of the level of current training and implementation by SLPs as it relates to behavioral intervention strategies.

**Purpose of the Study**

The purpose of this study was bipartite: 1) to examine school-based Speech-Language Pathologists’ training and implementation of research-based behavioral intervention strategies at the national level, and, 2) to determine if differences exist in school-based Speech-Language Pathologists' training and implementation of research-based behavioral intervention strategies based on years of experience or size of the school district.
Significance of Study

The results of the study provide information on the current state of training and implementation of research-based behavioral intervention strategies for SLPs. Collecting and analyzing this data allow school administrators to be better informed in providing relevant professional development for their SLPs, ultimately improving long-term outcomes for K-8 children with comorbid SLI/ED and all children with behavioral difficulties.

Research Questions

The research conducted in this study focused on the following questions:

1) To what extent are K-8 speech-language pathologists:
   a) trained in research-based behavioral intervention strategies?
   b) implementing research-based behavioral intervention strategies into students’ speech pathology sessions?

2) What differences are there in K-8 SLPs’ training and implementation of research-based behavioral intervention strategies based on:
   a) years of experience in the field (novice vs. experienced)?
   b) size of the school district where they are employed (defined by the number of students enrolled)?

Definition of Terms

In order to ensure consistency in the interpretation of the information presented in this research, the following definitions were used in this study:
Speech or Language Impairment (SLI): Includes any child who currently receives speech-language therapy as part of their IEP or IFSP services.

Speech-Language Pathologist (SLP): A person who has graduated from a Masters-level program through an accredited Speech-Language Pathology program and has received clinical certification in Speech-Language Pathology from the American Speech-Language-Hearing Association (ASHA).

Emotional Disturbance (ED): Includes any child with a diagnosed emotional disturbance listed on his/her IEP or IFSP (including Oppositional Defiant Disorder, Anxiety Disorder, and Conduct Disorders).

Behavioral Difficulties: Specific behaviors manifested by children which negatively impact their ability to be successful in school. For this study, the definition of behavioral difficulty is based on the DSM-5 (Diagnostic and Statistical Manual of Mental Disorders, 5th Edition) and includes interrupting, physical aggression, defiance/arguing, use of profanity, and threats.

Behavioral Intervention Strategies (research-based): Strategies that have been systematically researched and shown to make a positive difference in improving student behaviors (Association for Children’s Mental Health).

Novice: Five or fewer years of experience in the field.

Experienced: More than five years of experience in the field.

Title I School: A school that receives supplemental federal funds to assist with high concentrations of poverty as determined by the number of students who participate in the free or reduced lunch program. The cut off to qualifying as a Title 1 school is 40% of students living in poverty.
Limitations and Delimitations:

The following factors should be considered when interpreting and generalizing the results of this study:

1. This study was constrained by the number of SLPs that actually took the survey.
2. The survey utilized in this study was developed based on multiple sources since there was not a survey available that mirrored the goal of this research.
3. The study was confined to members of ASHA’s SIG-01 and SIG-16 group and to members of SDSHA and cannot be generalized beyond that population.

Assumptions:

The following assumptions were made throughout the study:

1. All respondents precisely understood the questions and instructions in the survey.
2. All respondents were forthright in their answers to all survey items.

Organization of the Study

Chapter 1 of this study discussed the introduction, statement of the problem, specific research questions addressed, significance of the study, a definition of key terms and the organization of the dissertation. Chapter 2 consists of a detailed review of the literature and research related to prevalence of ED and SLI in elementary-aged children, academic impact of behavioral difficulties and SLI, specific disruptive behaviors exhibited by children with behavioral difficulties, effective research-based behavioral intervention strategies, comorbidity of ED and SLI, and chronology of SLPs’ role in elementary school settings. The methodology and procedures that were utilized to obtain research data for the study are detailed in Chapter 3.
Next, Chapter 4 presents the findings and results of the data analysis. Chapter 5, the final chapter, includes a summary of the data collected during the study, interpretation of the data, conclusions, discussion, and recommendations for implementation and further study.
CHAPTER 2

Review of Related Literature

Chapter 2 provides a review of the related literature on Speech-Language Pathologists’ (SLP) training and implementation of research-based behavioral intervention strategies. This chapter is organized into the following sections: (a) prevalence of diagnosed ED and SLI in elementary-aged children; (b) impact of behavioral difficulties and SLI on academic outcomes; (c) disruptive behaviors exhibited by children with behavioral difficulties; (d) effective behavioral intervention strategies for improving long-term outcomes of students; (e) comorbidity of diagnosed ED and SLI; (f) chronology of SLPs’ role in elementary school settings in the United States.

Prevalence of Diagnosed Emotional Disturbance and Speech or Language Impairments

There are increasing numbers of school aged children being diagnosed with ED as well increasing numbers being diagnosed with SLI (Brauner & Stephens, 2006). Many researchers in the field of education forecast that these trends will continue into the foreseeable future (Raghavan et al., 2018). This forecast is due, in part, to the increasing number of children living below the poverty level.

Prevalence of Diagnosed Emotional Disturbance. The Individuals with Disabilities Education Act (IDEA, 20 U.S.C. § 1400, 2004) defines ED as “...a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child’s educational performance”. These characteristics include:

- An inability to learn that cannot be explained by intellectual, sensory or health factors.
• An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.
• Inappropriate types of behaviors or feelings under normal circumstances.
• A general pervasive mood of unhappiness or depression.
• A tendency to develop physical symptoms or fears associated with personal or school problems.

IDEA (2004) further clarifies the following mental disorders fall under the ED umbrella:

● Anxiety Disorder
● Bipolar Disorder
● Conduct Disorder
● Eating Disorder
● Obsessive-Compulsive Disorder
● Psychotic Disorders

Although each state has their own specific criteria for a diagnosis of ED in a school setting, there are some general commonalities throughout the US. In every state, the IEP team reviews multiple sources of information including teacher observations, parent observations, school psychologist observations and various behavioral assessments. The IEP team then comes to a consensus as to whether the student’s behavior adversely affects his/her educational performance (Title 5 California Code of Regulations 3030 ED Eligibility Criteria, n.d.).

According to a federal data analysis completed by Mitchell & Conroy (2019), as of 2014, of the 5,944,241 students on IEPs in the US, 350,710 receive services under the primary disability category of ED. These students account for 0.5% of the total school-aged population. But the 0.5% value is believed to be a significant underestimate of the actual number of students
in need of services due to ED (Freeman et al., 2018; Niesyn, 2009). Siperstein et al. (2011) notes that children identified in the ED category of special education are only a small fraction of those with emotional or behavioral disorders who actually need school intervention. This gap in diagnosis is due, in part, to many of these children being served under ‘developmental delay’ as teachers wait to see if the child outgrows the behaviors. According to Niesyn (2009), only 17% of children with ED are identified by 9 years of age.

In a comprehensive review of data, the estimated prevalence of a diagnosed behavioral disorder via IEP and medical diagnosis in a clinical setting, in children aged 0-5 is in the range of 9.5%-14.2% of this total population (Brauner & Stephens, 2006). In a study completed by the Center for Disease Control (CDC), it estimated that 13%-20% of US children suffer from a behavioral disorder. Further, the National Survey of Children’s Health (2016-2017) reflects parent-reported data indicating that 8.7% of children ages 3-17 had a history of behavioral issues.

**Prevalence of Speech or Language Impairment.** IDEA (2004) defines SLI as a communication disorder such as stuttering, impaired articulation, a language impairment, or voice impairment that adversely affects a child’s educational performance. According to the National Institute of Health (2017), common symptoms of SLI in elementary-aged children include:

- Frequent grammatical errors when speaking
- Poor articulation
- Stuttering
- Difficulty finding the right words
- Disorganized storytelling and writing
- Frequent spelling errors when writing
An SLI is diagnosed by direct observation of the child, interviews or questionnaires completed by parents/teachers, assessment of the child’s learning ability, and standardized tests of current language performance.

Although the exact number of children with SLI in the US is difficult to attain with certainty, the National Institute of Health (Pfeiffer, D.L. et al., 2019) estimates the percentage to be somewhere between 3% and 16% of the total population from early childhood through high school. According to the website of The American Speech-Language Hearing Association (ASHA) it estimates that 8% of US children have an SLI with the largest group being ages 3 to 6 (2019). And the Center for Disease Control (CDC) concurs with ASHA, finding the total number of children under the age of 18 in the US who have an SLI (as of 2015 data) is approximately 8% of that population.

A meta-analysis by the National Academies Press (Rosenbaum, S. & Simon, P., 2016) shows that the prevalence of SLI is increasing. The data analyzed includes information from the National Health Interview Survey (NHIS), the National Survey of Children with Special Health Care Needs (NSCSHCN), and the IDEA child count data. A synthesis of the findings showed that from 2005 to 2010, the number of children with SLI increased from 3.2% to 5.0% of the total school-age population, respectively. This is a 56% increase over a five-year span.

Impact of Behavioral Difficulties and Speech or Language Impairments on Academic Outcomes

The impact of having behavioral difficulties carries over into the academic experience for many children (Brinton & Fujiki, 2006; Mroz, 2015; Pentimonti, 2016). Students with behavioral difficulties are at a significantly higher risk of school dropout (Harrison et al., 2009). The root cause of this complex relationship and its impact on high school graduation is beyond
the scope of this study, but it is clearly an influential factor. In a one-student case study completed by Brinton & Fujiki, (2006) the issue of behavioral difficulties’ impact on literacy outcomes is summed up “language, social and emotional challenges intertwined to limit his [the student] full participation in peer interactions and classroom contexts. This, in turn, affected his literacy learning, as well as his ability to establish and maintain relationships” (p. 185).

**Impact of Behavioral Difficulties on Academic Outcomes.** Concern is growing in the field of education over the limited academic progress in special education students with behavioral difficulties (Mattison, R. & Blader, J., 2013). This thought is confirmed by other researchers as documented in various longitudinal studies (Siperstein, G., Wiley, A., & Forness, S., 2011). The negative academic impact from having behavioral difficulties is on many levels, including negative student self-concept, poor student-teacher relationships, and lack of instruction due to suspension.

Having behavioral difficulties can negatively impact students’ self-concept, which in turn, negatively affects academic achievement in a self-fulfilling prophecy (Lindsey & Dockrell, 2012). “There is now substantial evidence that academic self-concept has both direct and indirect effects on subsequent achievement” (Lindsey & Dockrell, 2012, p. 456).

When looking at social interactions as a tool for learning, Vygotsky-theorists (supporters of the Social Development Theory) essentially believe that all cognitive learning happens as a result of social interactions. Thus, if a child is limited in social interaction as a result of behavioral difficulties, then learning will be negatively impacted. It is a general consensus that “language is a very powerful tool for the expression and the manipulation of emotion...we reveal our emotions through language” (Gasparatou, 2016, p. 321). Thus emotions and language are
very inter-related with many students developing frustration about the inability to effectively share their thoughts and emotions and then, as a result, escalating into negative behaviors.

In a study by Siperstein et al. (2011) in which the researchers followed the academic progress of 86 children diagnosed with an ED over a two year period, they found that all but one student made no significant gains in reading and math achievement. In a study of middle schoolers with ED (Garwood, J., Ciullo, S., & Brunsting, N., 2017) these students had the slowest growth in reading achievement compared to other students with learning disabilities and, by the time they enter high school, were reading several grade levels below their actual grade.

**Impact of Speech or Language Impairment on Academic Outcomes.** Further, there is a substantial amount of research documenting the long-term negative academic outcomes of students with SLI (Harrison, McLeod, Berthelsen & Walker, 2009). SLI can have a negative impact on a child who is learning to read and write (Gasparatou, 2016; Pinborough-Zimmerman et al., 2007; van den Bedem et al., 2018). In a 2015 study by White-Canales & McElroy-Bratcher, the researchers looked to determine if there was a difference in reading achievement scores of children with SLI compared to their non-disabled peers. The results of the study showed that there was a statistically significant gap in achievement. This reading gap carries over to all academic areas as students are increasingly required to ‘read to learn’ academic content rather than ‘learn to read’ (Lewis, B., Freebairn, L., Tag, J., Ciesia, A., Iyengar, S., Stein, C., Taylor, H., 2015).

Research published in 2017 by McKean, Reilly, Bavin, Bretherton, Cini, Conway, Cook, Eadie, Prior, Wake & Mensah found that children who “experience low language in the preschool and early school years are at heightened risk of difficulties with literacy, academic attainments, and social-emotional and behavioral adjustment” (p. 139). As the child progresses
through the educational years, the detrimental impact on literacy for children with SLI does not generally resolve in middle school. In a study of adolescent outcomes for young children diagnosed with SLI in early childhood, it revealed that this group also had poorer literacy outcomes in middle school (Lewis et al., 2015). The study concluded, “these research findings suggest that early childhood SSD [speech sound disorders] may have long-term academic consequences for some individuals” (p. 152). A similar study by Lewis et al. (2015), found that adolescents with early childhood histories of SLI continued to have severe deficits in all language and literacy measures throughout their entire educational experience.

**Disruptive Behaviors Exhibited by Children with Behavioral Difficulties**

Most children exhibit a small level of disruptive behavior, either intentionally or unintentionally, at some point during their childhood. These isolated incidents do not necessarily constitute the presence of an ED. According to the *Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5)*, there are specific behaviors and frequency of occurrences that justify a diagnosis of ED (“APA board approves,” 2013). Under the umbrella of ED, the *DSM-5* (2013) breaks down the diagnosis into more refined categories which are Oppositional Defiant Disorder (ODD), Conduct Disorder (CD), Intermittent Explosive Disorder (IED) and Disruptive Behavior Disorder, Not Otherwise Specified (DBDNOS).

As stated in the *DSM-5* (“APA board approves,” 2013), ODD behaviors required for a diagnosis include: frequent arguing with adults, refusing to comply with an adult’s request, deliberately annoying others, and being spiteful. For a diagnosis of CD, student behaviors include: bullying, threats, aggression toward people or animals, frequent initiation of physical fights, physical cruelty to other children or animals, deliberate destruction of the property of others, frequent lies to avoid obligations and truancy from school. For a diagnosis of IED, the
following behaviors are observed: verbal aggression, argumentative, and physical aggression toward people, animals or property. Many of these negative behaviors overlap for a specific diagnosis, but all fall under the umbrella of ED characteristics.

Based on various studies, it appears that many education professionals in school settings struggle to work with students who have an ED. In a study completed by Sutherland, Conroy, Algina, & Kunemund (2018), 185 early childhood education teachers were asked to complete the Teachers’ Sense of Efficacy Scale—Long Form (TSES) in order to determine their level of confidence in implementing behavior intervention programs. Results showed that there was a statistically significant number of teachers who did not feel confident ($z=1.043$). In another recent study, the findings were similar in that a majority of teachers in the study felt they did not have adequate ED training to effectively support their students (State et al., 2019). A primary cause of inadequacy identified in this study was the lack of meaningful professional development/training. These findings reflect that educational professionals are not adequately trained in behavioral intervention strategies and, as a result, feel they are ineffective in supporting students. “It is important to offer professional development for target staff to develop greater expertise to meet the specific needs of a school” (Stormont et al., 2011, p. 145).

**Effective Research-Based Behavioral Intervention Strategies for Improving Long-term Outcomes**

Extensive research has been done over the past decade on effective behavior intervention strategies that improve long-term outcomes for students who exhibit behavioral difficulties. Recommended research-based behavioral intervention strategies include setting well-defined limits, rules, and task expectations; establishing consistent routines; setting easily attainable goals; using non-verbal signals for appropriate behavior; frequent verbal reinforcement for
appropriate behavior; planned ignoring; verbal reminders of classroom rules; earned activities and privileges; work completion contracts; self-monitoring; token economy; and home-school reward system (Bak & Asaro-Saddler, 2013; Hester et al., 2009; Karasu et al., 2019; Lieberman, 2018; Lukowiak, 2010; Mitchell et al., 2018, Niesyn, 2009).

In a study by Michael, George, & Splett (2016) data was collected on behavior intervention effectiveness using the *Behavioral and Emotional Screening System 2nd Edition* (*BASC-2*). They found that the outcomes of implementing research-based behavioral intervention strategies with fidelity, across all school settings, resulted in a statistically significant improvement in emotional, behavioral and adaptive functioning of students. The main intervention strategies utilized in the study included consistent schedules, self-monitoring procedures, and communication training.

The first strategy that appeared consistently in the research is the value of setting well-defined limits, rules, and task expectations (Lieberman, 2018; Lukowiak, 2010). It is a general consensus that all children benefit from clear boundaries and expectations, but it is especially important for students with behavioral difficulties. These rules need to be explicit as to what behaviors are not acceptable, such as physical aggression and they need to promote positive behaviors, such as being respectful (Mitchell et al., 2018; Watkins et al., 2017). In setting these limits, it is important to clarify what the consequences will be if a rule is broken and to review the rules with students periodically (Niesyn, 2009).

Another effective behavioral intervention strategy is to establish consistent routines (Bak & Asaro-Saddler, 2013; Lukowiak, 2010). This helps students know what to expect and lessens anxiety in anticipating what the day will bring, thus lessening the likelihood of a behavioral
issue. To ensure students know what to expect, it is recommended to post the daily class schedule for student visual reference (Niesyn, 2009).

A third strategy is to set easily attainable daily goals (Bak & Asaro-Saddler, 2013; Niesyn, 2009). This also includes giving easily attainable directives with which students are likely to comply (Niesyn, 2009). Allowing students to experience success in achieving a goal can improve their outlook and reduce frustration. If the bar is set too high, students with behavioral difficulties often get discouraged and begin exhibiting negative behaviors. An example of an easily attainable goal is the goal of a student only blurting out 4 times during a group discussion, as zero times is not yet attainable for the student.

A fourth recommended behavioral intervention strategy is using nonverbal signals for appropriate behavior (Stichter et al., 2012). Nonverbal signals include physical proximity, eye-contact with facial expressions, gestures, and body posture (Watkins et al., 2017). For gestures, it is generally helpful to discuss the meaning of the gesture with students before implementation. For example, a teacher might discuss with students that when she points at her ear, that is a gesture that students should be listening.

A fifth recommended behavioral intervention strategy is frequent verbal reinforcement for appropriate behavior (Bak & Asaro-Saddler, 2013, Lukowiak, 2010, Lieberman, 2018, Mitchell et al., 2018, Niesyn, 2009; Watkins et al., 2017). This encompasses praise and positive comments about a student’s appropriate behavior or task completion. It is essential that praise be immediate and specific in order to be effective (Niesyn, 2009). Most educational researchers would agree that the ratio of praise to reprimand should be 1 negative: 5 positive (Beaman & Wheldall, 2000).
A sixth strategy is planned ignoring in which the teacher intentionally chooses not to respond to minor inappropriate behaviors (Hester et al., 2009). Often, the goal of students who engage in these behaviors is to gain attention. By not providing the desired attention, it is likely that the student will discontinue the behavior (Watkins et al., 2017; Karasu et al., 2019).

A seventh behavioral intervention strategy is verbal reminders of classroom rules (Lieberman, 2018, Lukowiak, 2010, Watkins et al., 2017). When a student is violating a classroom rule, the teacher should remind the student of that rule. Ideally, the classroom rules would be posted for reference and discussed periodically to keep them at the forefront of students’ minds (Karasu et al., 2019). An example would be when a teacher reminds a student, “we don’t interrupt other students when they are speaking”.

An eighth strategy is earned activities and privileges (Lukowiak, 2010, Mitchell et al., 2018). This consists of providing a student with a reward once the student has completed a requested task. This is similar to a token economy, but the ‘reward’ is not material. Also, the task is more precise and there is timely, generally the same day, gratification. For example, if a teacher provides a student who is refusing to write that day with a goal of writing one paragraph during morning writing time and offers a reward for completing this goal, such as eating lunch with the teacher in the classroom that same day, that is an earned privilege.

A ninth behavioral intervention strategy is work completion contracts (Bak & Asaro-Saddler, 2013, Lukowiak, 2010). A contract is a written agreement between the student and the teacher. These contracts list certain behaviors or tasks that the student will perform. They are very specific with details of how much, by when and who is responsible for what (teacher and/or student). The contract is developed collaboratively between the student and the teacher. An
example of a work completion contract item is “stay focused for five minutes until the timer goes off”.

A tenth effective strategy is documented self-monitoring of behaviors (Lieberman, 2018; Mitchell et al., 2018). A student works with the teacher to compile a chart of 3-5 negative or positive behaviors to focus on. The student then begins to track the frequency of these behaviors (Lukowiak, 2010). This is done by having the student place a checkmark next to a predetermined behavior listed on a clipboard, such as throwing a chair, each time that behavior is self-observed. During the process, the student learns to evaluate and regulate his/her own behavior (Watkins et al., 2017). Research has shown this strategy improves self-regulation skills, which results in improved behavior and academic performance (Bak & Asaro-Saddler, 2013).

An eleventh strategy is a points system or token economy (Bak & Asaro-Saddler, 2013, Lukowiak, 2010; Karasu et al., 2019). In this strategy, students earn points or tokens for good behavior. Once they have accumulated a predetermined amount of tokens, students can ‘buy’ items they want from the classroom or school ‘store’. Prior to starting a token economy, it is necessary to clarify what constitutes ‘good behavior’ and what the options will be for ‘cashing in’ tokens. It should be noted that token economies are a short-term intervention strategy. In the long term, the goal is always to discontinue the token economy and transition to self-monitoring and/or simple teacher praise (Lukowiak, 2010).

A twelfth effective behavioral intervention strategy is a home-school reward system (Lukowiak, 2010). In this strategy, the parent/guardian provides rewards at home, based on reports from the teacher of positive behaviors at school. As with the points system, it is imperative that everyone involved understands the behaviors expected and the rewards provided
for exhibiting those behaviors. Timely home-school communication is also essential for this strategy to work effectively.

**Comorbidity of Emotional Disturbance and Speech or Language Impairment**

In a 2018 longitudinal study of early elementary-aged children, it was observed that children with more advanced language skills also had better emotional regulation skills (Na, Wilkinson & Liang, 2018). In contrast, the same study found that kindergarteners with delayed language development had poorer self-regulation skills than their peers. Other studies reflect similar findings, concluding that “children with low language were 2 to 3 times more likely than their peers to have SEB [social emotional behavioral] difficulties” (McKean et al., 2018, p. 7).

In an unrelated research project, it was concluded that the primary predictors of comorbid ED and SLI were the child having witnessed violence, a history of parent mental illness, living in poverty, and parent educational attainment; noting that all of these indicators are on the rise in the US (Hughes, Sciberras, & Goldfeld, 2016). A portion of Hughes et al. research utilized a parent survey (N=53256) and found that 20.4% of children began school with either an SLI or ED and that 3.1% (n=1670) started school with comorbid ED and SLI. Further, their study revealed that children with an SLI are 2.8 times more likely to also have an ED.

A 2012 study by Lindsay & Dockrell on the long-term behavioral outcomes of students with SLI confirms that “it is well established that children with language impairment are more likely than typically developing children to experience behavior difficulties” (p. 445). This same study also found that two-thirds of students in the school district studied that were expelled had language difficulties.
Chronology of the Speech-Language Pathologists’ Role in Elementary School Settings in the United States

The role of SLP historically has been limited to teaching phonemic awareness; lexical retrieval; auditory memory; articulation; fluency; and voice (Ukrainetz & Fresquez, 2003). In past research there has been little or no mention of SLPs providing behavioral intervention strategies when working with children that have comorbid SLI and ED. In a questionnaire given to a group of SLPs working with children ages 3-6, a majority of those surveyed focused all of their instructional time on speech-related interventions (Brumbaugh & Smit, 2013). The study summarized that “more SLPs indicated that they used traditional intervention [phonics, modified speech sound] than other types of intervention” (p. 306) with minimal mention of behavioral interventions by the SLPs in the study.

But, changes in the role of SLPs in school settings are starting to occur (State et al., 2019). This is due to a number of factors including the implementation of the Common Core State Standards (CCSS). Because of CCSS, school administrators are beginning to recognize the need for SLPs to be provided with increased opportunities for professional development in their evolving role. They are realizing that this is necessary to ensure that SLPs can adequately address the needs of the students in their care (Prelock, 2000).

Further promoting the evolving role of SLPs is clarification on certain provisions of the Individuals with Disabilities Education Act (IDEA). In IDEA (2004), SLP services are listed as a “related service”, leaving it up to each state to decide if they want to designate SLP services as “special education” (Giangreco et al., 2012). Depending on how each state chooses to use the flexibility built into the act, the SLP’s role can look different.
As with most professional roles in educational settings, the demands and definitions are ever changing, based on the needs of the children served. The history of the role of SLPs is no exception. It is anticipated by many educational researchers that in the future the SLP role will continue the movement toward a more collaborative and broader, whole-child focus of services (Giangreco, Prelock & Turnbull, 2010). SLPs are a valuable resource in helping students progress not only in language but also academically and socially (Waller, 2012).

Conclusion

There is currently significant data available on the prevalence of EDs and SLIs in elementary-aged children, and on effective research-based behavioral intervention strategies, as well as an abundance of research on the impact of ED and SLI on academic outcomes. But, there is minimal known research available that is specific to understanding SLPs’ current training and implementation of behavioral intervention strategies in school settings. Data shows that the need for intervention exists and that there is a plethora of research-based strategies available to implement these interventions. What is not clear is whether this information is being taken into consideration by administrators when planning for professional development/training of SLPs. It is also not clear to what degree these behavioral intervention strategies are being implemented by SLPs.

By collecting and analyzing this data, school administrators in both large and small school districts throughout the US will be better informed to make decisions about providing relevant professional development and training in behavioral intervention strategies for their SLPs, ultimately improving long-term outcomes for K-8 children with behavioral difficulties.
Organization of the Remainder of the Study

Chapter 2 provided a review of related literature associated with prevalence of SLI and ED in elementary-aged children, the impact of SLI and behavioral difficulties on academic outcomes, disruptive behaviors exhibited by children with behavioral difficulties, effective behavioral intervention strategies for improving long-term outcomes, comorbidity of SLI and ED, and the chronology of SLPs’ role in elementary school settings in the United States. Chapter 3 contains a discussion of the methodology and procedures that were utilized in data collection.
CHAPTER 3

Methodology

Chapter 3 discusses the methods and procedures that were used in the research. The purpose of this study was bipartite: 1) to examine school-based Speech-Language Pathologists’ (SLP) training and implementation of research-based behavioral intervention strategies, and, 2) to determine if differences exist in school-based SLPs’ training and implementation of research-based behavioral intervention strategies based on years of experience or size of school district.

By collecting and analyzing this data, school administrators in the United States in both large and small school districts will be better informed in providing relevant professional development for their SLPs, ultimately improving long-term outcomes for K-8 children with behavioral difficulties.

For the gathering and analysis of data in this study, quantitative, survey research methods were utilized. To collect the data, elementary and middle school SLPs from school districts throughout the United States were surveyed in January 2020 using a Qualtrics online survey.

Research Questions

The research conducted in this study focused on the following questions:

1) To what extent are K-8 SLPs in the United States:
   a) trained in research-based behavioral intervention strategies?
   b) implementing research-based behavioral intervention strategies into students’ speech pathology sessions?

2) What differences are there in K-8 SLPs’ training and implementation of research-based behavioral intervention strategies based on:
27

a) years of experience in the field (novice versus experienced)?

b) size of the school district where they are employed (based on student enrollment)?

**Review of Related Literature**

The review of related literature and research was completed via digital searches of the following databases: *Educational Resources Information Center (ERIC), EBSCO Host, Psychinfo, Proquest,* and *Google Scholar.* All articles were peer-reviewed and obtained from the ID Weeks Library at the University of South Dakota and the Western Governors University online research library. Key subject matter research focused on SLPs’ role in elementary school settings, prevalence of ED and SLI in elementary-aged children in the US, disruptive behaviors exhibited by children in elementary school settings, effective research-based behavioral intervention strategies, and academic impact of ED and SLI. Professional books were also located and reviewed including *Children with Social, Emotional and Behavioral Difficulties and Communication Problems: There Is Always a Reason* (Cross, 2011) and *Handbook of Language & Literacy: Development and Disorders* (Stone et al., 2014). The *Publication Manual of the American Psychological Association, Sixth Edition* (2010) and *Practical Research Planning and Design, 11th Edition* (Leedy & Ormrod, 2016). These resources continued to be used in writing chapters four and five after data had been collected. This researcher has successfully completed the Collaborative IRB Training Initiative (CITI) for the protection of human subjects.

**Population**

The research population in the study was K-8 licensed speech-language pathologists currently working in a school setting in the United States. The link to the Qualtrics survey was posted on the American Speech-Language-Hearing Association’s (ASHA) Special Interest
Group (SIG) 1 and 16 blog page. SIG-16 is a group of school-based SLP practitioners. There are currently approximately 5,000 members. SIG-1 is a group of SLPs interested in Language and Learning in Education. In addition, a link to the survey was emailed to all members of the South Dakota Speech-Language-Hearing Association (SDSHA).

**Research Design**

For this study non-experimental, quantitative, survey research methods were used. The items in the survey were based on a review of the literature. In order to improve the response rate, the researcher chose to limit the number of questions asked on the survey. Also, in a further effort to improve response rates, the researcher used guidelines from the book *Internet, Phone, Mail and Mixed-mode Surveys: The Tailored Design Method* (Dillman, Smyth & Christian, 2014).

The study determined SLPs' training and implementation of research-based behavioral intervention strategies, as well as if significant differences exist, based on years of experience or size of school district. The definition of novice and experienced utilized in the study were based on generally accepted interpretation among educators. A ‘novice’ SLP is defined as one with five or fewer years of experience in the field and an ‘experienced’ SLP is one with greater than five years of experience. In this study, a ‘small’ school district is defined as one with an enrollment of less than 10,000 students while a ‘large’ school district is defined as one with equal to or greater than 10,000 students. These numbers were chosen based on 2015 school data from the US Department of Education which reflects that approximately half of the school districts in the US enroll less than 10,000 students ([https://nces.ed.gov/programs/digest/d17/tables/dt17_105.20.asp](https://nces.ed.gov/programs/digest/d17/tables/dt17_105.20.asp)).
Descriptive statistics were used to analyze participant response data for question 1 with a separate analysis being completed for each sub-part question 1a and question 1b. This analysis included the frequency distribution of responses. A calculation of the central tendency (SD, mean) was used to determine the level of training and implementation of behavioral intervention strategies by SLPs in the data set.

For question 2, inferential statistics were employed to (a) calculate correlation coefficients using the Pearson R formula and (b) to determine if there is a statistically significant difference among SLPs. This was done utilizing a total of four 2-tailed t-tests. The independent variables were (a) years of experience in the field (novice vs. experienced) and (b) size of the school district where the SLP is employed (small vs. large). The dependent variables in the study consisted of SLPs (a) training in research-based behavioral intervention strategies and (b) implementation of research-based behavioral intervention strategies.

The four 2-tailed t-tests were as follows:

1. Independent Variables: Novice, Experienced -> Dependent Variable: Training in behavioral intervention strategies
2. Independent Variables: Novice, Experienced -> Dependent Variable: Implementation of behavioral intervention strategies
3. Independent Variables: Small school district, Large school district -> Dependent Variable: Training in behavioral intervention strategies
4. Independent Variables: Small school district, Large school district -> Dependent Variable: Implementation of behavioral intervention strategies
Instrumentation

A 21-item survey (see Appendix A) was developed based on previous research in the review of literature (see Appendix B) and in consultation with this researcher’s committee members. The finalized survey was reviewed and critiqued by three SLPs in the US for feedback prior to being posted on the ASHA SIG-16 blog page and distributed via email to SDSA members. These critiquers have formerly worked in a school setting and are not currently members of ASHA SIG-1 or SIG-16.

Survey items one, two, three, four, seven, nine, fifteen, and sixteen are critical to answering the research questions posed in this study. Items one and two address whether or not the respondents meet the criteria for the study. Item one ensures that the respondent currently works as an SLP in an elementary or middle school setting, while item two determines if the respondent also holds a Certificate of Clinical Competence (CCC) in Speech-Language Pathology.

Item three asks in which US state the respondent is currently employed. To further ensure that respondents meet the criteria for the survey, item four inquires in which grade-level(s) the SLP currently (or in the past three years) works.

Item seven asks for the size of the school district in which the respondent is employed. Although this researcher is focusing on ‘large’ versus ‘small’ school districts as defined in this study, the response options are broken down further to allow for addition drilling-down of data, should any interesting trends arise during the analysis phase.

Item 15 of the survey seeks to understand the respondent’s previous training in specific research-based behavioral intervention strategies. A three-point Lickert Scale is utilized (1=No
training, 2=Some training, 3=Considerable training) and a series of 12 specific strategies are listed. These strategies are:

- Set well-defined limits, rules, and task expectations
- Establish consistent routines
- Set easily attainable daily goals
- Nonverbal signals for appropriate behavior
- Frequent verbal reinforcement for appropriate behavior (i.e. praise)
- Planned ignoring of minor inappropriate behavior (i.e. ignoring the disruptive behavior of a student who is trying to gain attention)
- Verbal reminders of classroom rules
- Earned activities and privileges (i.e. rewarding students with special activities or privileges for demonstrating appropriate behaviors)
- Work completion contracts (a written agreement developed by the SLP and student with specific behaviors the student will perform)
- Documented self-monitoring of behaviors (i.e. a student records how frequently he or she performs specific, targeted behaviors)
- Points system/Token Economy (students earn points for demonstrating appropriate behaviors)
- There is also the option of ‘Other’ - with space for the respondent to list or describe the intervention

Item 16 of the survey seeks to understand the respondent’s implementation of specific research-based behavioral intervention strategies. A five-point Lickert Scale is utilized
(1=Never, 2=Rarely, 3=Sometimes, 4=Often, 5=Always) and the same 12 specific strategies listed in Item 11 are employed.

The remaining survey items were added based on discussions with this researcher’s committee members and seek to enhance the depth and breadth of the study. The additional questions are items five, six, eight, ten, eleven, twelve, thirteen, fourteen, seventeen, eighteen, nineteen, twenty, and twenty-one.

Item five asks if the respondent works part-time or full-time. Item six inquires as to whether the respondent works in a Title 1 school, while item eight asks how many students are currently in the SLP’s caseload. Item ten asks if the SLP has provided speech-language services to any child with a diagnosed ED within the last three years. Item 11 further expands on item 10 and asks for an estimated percentage of students that the SLP has worked with during the last three years that have a diagnosed ED.

Item 12 seeks to determine if the SLP has provided speech-language services to children who exhibit specific disruptive behaviors but are not diagnosed with an ED. Item 13 asks about specific behaviors for all students in the SLP’s caseload, not just those with a diagnosed ED. The behaviors listed come from the *Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5)* and are: interrupting, physical aggression, defiance/arguing, use of profanity, and threats. This question is asked to ensure inclusion of children who have exhibited behaviors that are characteristic of students with ED, but may not be formally diagnosed. As discussed in Chapter 2, there are a large number of elementary-aged children with undiagnosed ED. This researcher wants to ensure that these children are included in the study. Item 14 of the survey inquires about what percentage of all students in SLP’s caseload exhibit specific disruptive behaviors that are characteristic of children with ED.
Item 17 seeks to determine how the SLP obtained their training (if any) in the specific behavioral intervention strategies listed in the Lickert Scale. Options for response are: attending professional development offered by the respondent’s school district, degree program, continuing education course, searching the internet, reading an article(s), attending a professional conference, consulting a textbook, and ‘Other’ to allow for any additional sources of learning.

Item 18 is an open-ended question asking what specific topics in behavioral interventions strategies the SLP would like to receive training in at a future professional development in-service. This question will not be analyzed in the data but will provide additional insight for school administrators to consider for future professional development planning.

Item 19 asks “How much has working with students that have behavioral difficulties negatively affected your ability to provide speech services in the past three years”, with response options of minimally, moderately, and significantly. Item 20 asks to what degree behavioral difficulties during speech therapy sessions have impacted the SLP’s ability to provide speech-language services and employs the same answer options as Item 19. The final item on the survey seeks to determine, on average, the weekly amount of time, if any, the SLP spends addressing behavioral difficulties during speech-language therapy sessions. Options for responses are listed as percentage ranges.

**Data Collection**

Prior to beginning data collection, the research proposal was reviewed and approved by the University of South Dakota Institutional Review Board. This was necessary as the data collection involves the gathering of information from human subjects.

In an effort to improve the response rate, the Dillman method was employed. The method consists of providing three separate announcements on the ASHA SIG-1 and SIG-16
blog page and via email to SDSA members. First, a pre-notification letter explaining the purpose of the study (see Appendix C) was sent notifying members of the upcoming survey (Dillman, Smyth, & Christian, 2014). Two days after the initial post, a second letter was distributed inviting members to participate and providing directions for completing the survey with a link to the online survey in Qualtrics (see Appendix D). A third and final letter was sent one week after the original communication, inviting potential respondents who have not yet completed the survey to do so (see Appendix E).

**Data Analysis**

Research question 1 explored the extent of SLPs’ (1a) training and (1b) implementation of research-based behavioral intervention strategies. Descriptive statistics were utilized to determine the frequency distributions of responses. Analysis of the central tendency (mean, SD) was also calculated.

Research question 2 determined the extent of SLPs’ training and implementation of research-based behavioral intervention strategies based on (2a) size of school district and (2b) years of experience. Inferential statistics were used to analyze research question 2 and examined if statistically significant (p=.05) differences exist based on the variables.
CHAPTER 4

Findings

This chapter discusses the findings of the research and includes detailed analysis. Data were analyzed by examining responses to each question on the survey. Additionally, tables were provided as a visual aid. The purpose of this study was to understand Speech-Language Pathologists' (SLPs’) training and implementation of research-based behavioral intervention strategies and to determine if there were statistically significant differences in levels of training and implementation based on years of experience or size of school district. The sections included in this chapter are response rate, demographic data, findings and summary.

Response Rate

The population for this research was SLPs currently working in K-8 educational settings in the United States. The Qualtrics survey link was sent via email to SLPs in South Dakota and also blog posted to American Speech Language Hearing Association (asha) member SLPs. SLPs were given eighteen days to complete the survey. Upon closing of the survey, 87 SLPs had completed it. The inclusion criteria required that the respondent be currently working as an SLP in an elementary or middle school setting and hold ASHA’s Certificate of Clinical Competence (CCC). Of the 87 respondents, 78 met the criteria to participate in the study.

Demographic Data

The demographic data collected within the survey included current occupational setting (non-Title 1 vs. Title 1 school), grade levels with which the SLP currently works, Certificate of
Clinical Competence (CCC) status, years of experience in the field, full-time/part-time employment status, and US state of employment.

The data showed that 71% \((n=55)\) of the respondents worked in a Title 1 school while the remaining 29% \((n=23)\) worked in a non-Title 1 school. Analysis indicated that 94% \((n=73)\) of the SLPs surveyed work with students in K-2\textsuperscript{nd}, 97% \((n=76)\) work with 3\textsuperscript{rd}-5\textsuperscript{th}, and 62% \((n=48)\) work with 6\textsuperscript{th}-8\textsuperscript{th}. It should be noted that respondents were able to choose multiple answers to this survey question as many have students in their caseload spanning from Kindergarten through 8\textsuperscript{th} grade.

There was a significantly larger proportion of ‘Experienced’ (6 or more years working as an SLP) respondents \((n=65, 83.3\%)\) that completed the survey. Thus only 16.7% of respondents \((n=13)\) indicated that they were ‘Novice” with five or less years of experience. A majority of respondents \((89.7\%, n=70)\) were employed full-time (working 30 or more hours per week).

The highest number of respondents currently work in the State of South Dakota \((19.5\%)\) with multiple other states having only one respondent. Respondent breakdown by state of employment is outlined in Table 1 below.

<table>
<thead>
<tr>
<th>US State of Employment</th>
<th>Number of Respondents</th>
<th>Percentage of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>8</td>
<td>10.39%</td>
</tr>
<tr>
<td>California</td>
<td>5</td>
<td>6.49%</td>
</tr>
<tr>
<td>Connecticut</td>
<td>2</td>
<td>2.60%</td>
</tr>
</tbody>
</table>

Table 1

*Number of Respondents by State*
<table>
<thead>
<tr>
<th>State</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>1</td>
<td>1.30%</td>
</tr>
<tr>
<td>Florida</td>
<td>2</td>
<td>2.60%</td>
</tr>
<tr>
<td>Georgia</td>
<td>1</td>
<td>1.30%</td>
</tr>
<tr>
<td>Idaho</td>
<td>1</td>
<td>1.30%</td>
</tr>
<tr>
<td>Illinois</td>
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<td>2.60%</td>
</tr>
<tr>
<td>Indiana</td>
<td>1</td>
<td>1.30%</td>
</tr>
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<td>2.60%</td>
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<td>Puerto Rico</td>
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<tr>
<td>South Carolina</td>
<td>1</td>
<td>1.30%</td>
</tr>
<tr>
<td>South Dakota</td>
<td>15</td>
<td>19.48%</td>
</tr>
<tr>
<td>Texas</td>
<td>5</td>
<td>6.49%</td>
</tr>
</tbody>
</table>
Vermont 1 1.30%
Washington 2 2.60%
Wiconsin 2 2.60%

Findings

This section provides detailed findings of SLPs’ training and implementation of research-based behavioral intervention strategies. The variables studied for this research included two independent variables (years of experience, size of school district) and two dependent variables (training, implementation). The analysis of each research question and sub-questions are presented as follows: training for all respondents, implementation for all respondents, training based on years of experience, implementation based on years of experience, training based on size of school district, implementation based on size of school district and additional information.

Training in Research-Based Behavioral Intervention Strategies for All Respondents.

Research question one sought to determine school-based SLP respondents’ training in 12 specific research-based behavioral intervention strategies: (a) set well-defined limits, rules, and task expectations (discussing rules/expectations, posting them and consistently enforcing them); (b) establish consistent routines (discussing routines, posting them and following them); (c) set easily attainable daily goals to allow for student success (i.e. if a student blurts out 5 times during a speech session, set a goal of 4 times - not zero times); (d) nonverbal signals for appropriate behavior (i.e. hold finger to lips for ‘quiet’; thumbs up/thumbs down); (e) frequent verbal reinforcement for appropriate behavior (i.e. praise that is immediate, specific and sincere); (f) planned ignoring of minor inappropriate behavior (i.e. ignoring the negative behavior of a
student who is trying to gain attention); (g) verbal reminders of therapy session rules (i.e. “We don’t interrupt other students when they are speaking.”); (h) earned activities and privileges (i.e. rewarding students with special activities or privileges, such as lunch with the SLP, for demonstrating appropriate behaviors); (i) work completion contracts (a written agreement developed by the SLP and student together with specific tasks the student will perform such as “stay focused for 5 minutes until the timer goes off”); (j) documented self-monitoring of negative behaviors (i.e. a student records how frequently he or she performs specific, targeted negative behaviors such as ‘the number of times he/she threw a chair today’); (k) points system/token economy (students earn points for demonstrating appropriate behaviors and can use the points to ‘purchase’ items from a school ‘store’); and (l) home-school reward system (parents/guardians reward a child’s positive school behavior at home - this requires frequent, timely communication between school and home). All questions related to training were asked and analyzed on a three-point Lickert scale with response options of Considerable Training, Some Training or No Training.

Data analysis of the responses to training-related questions was completed using the cumulative mean of SLP responses for all 12 items. Results indicated that SLP respondents in this study have Some Training (M=1.91, SD=.32) in behavioral intervention strategies. It should be noted that although the conclusion based on data reflects Some Training, the score does lean slightly toward Considerable Training (see Table 2).
Table 2

**SLP Level of Training in Research-Based Behavioral Intervention Strategies (Cumulative Mean for All 12 Items)**

<table>
<thead>
<tr>
<th>Level of Training</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = Considerable training</td>
<td>1.91</td>
</tr>
<tr>
<td>2 = Some training</td>
<td>1.8</td>
</tr>
<tr>
<td>3 = No training</td>
<td>1.7</td>
</tr>
</tbody>
</table>

Further, the scores for each individual item listed in the Lickert Scale also indicated respondents had at least *Some Training* (see Table 3). This suggests that all respondents have had some training in each of the 12 research-based behavioral intervention strategies listed in the survey.

Table 3

**SLP Training in Each Individual Research-Based Behavioral Intervention Strategy**

<table>
<thead>
<tr>
<th>Question</th>
<th>M (SD)</th>
<th>Level of Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 Set well-defined limits, rules and task expectations</td>
<td>1.6 (.64)</td>
<td>Some Training</td>
</tr>
<tr>
<td>Q2 Establish consistent routines</td>
<td>1.6 (.59)</td>
<td>Some Training</td>
</tr>
<tr>
<td>Q3 Set easily attainable daily goals</td>
<td>1.8 (.76)</td>
<td>Some Training</td>
</tr>
<tr>
<td>Q4 Nonverbal signals for appropriate behavior</td>
<td>1.8 (.74)</td>
<td>Some Training</td>
</tr>
<tr>
<td>Q5 Frequent verbal reinforcement of appropriate behavior</td>
<td>1.6 (.65)</td>
<td>Some Training</td>
</tr>
<tr>
<td>Q6 Planned ignoring of minor behavior</td>
<td>1.7 (.69)</td>
<td>Some Training</td>
</tr>
<tr>
<td>Q7 Verbal reminders of rules</td>
<td>1.7 (.70)</td>
<td>Some Training</td>
</tr>
<tr>
<td>Q8 Earned activities and privileges</td>
<td>1.8 (.67)</td>
<td>Some Training</td>
</tr>
<tr>
<td>Question</td>
<td>Strategy Description</td>
<td>Score</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------</td>
<td>------</td>
</tr>
<tr>
<td>Q9</td>
<td>Work completion contracts</td>
<td>2.3 (.70)</td>
</tr>
<tr>
<td>Q10</td>
<td>Documented self-monitoring</td>
<td>2.4 (.75)</td>
</tr>
<tr>
<td>Q11</td>
<td>Points system/token economy</td>
<td>1.8 (.68)</td>
</tr>
<tr>
<td>Q12</td>
<td>Home-school reward system</td>
<td>2.3 (.73)</td>
</tr>
</tbody>
</table>

**Implementation of Research-Based Behavioral Intervention Strategies for All Respondents.**

Research question one sought to determine school-based SLP respondents’ implementation of 12 specific research-based behavioral intervention strategies: (a) set well-defined limits, rules, and task expectations (discussing rules/expectations, posting them and consistently enforcing them); (b) establish consistent routines (discussing routines, posting them and following them); (c) set easily attainable daily goals to allow for student success (i.e. if a student blurts out 5 times during a speech session, set a goal of 4 times - not zero times); (d) nonverbal signals for appropriate behavior (i.e. hold finger to lips for 'quiet'; thumbs up/thumbs down); (e) frequent verbal reinforcement for appropriate behavior (i.e. praise that is immediate, specific and sincere); (f) planned ignoring of minor inappropriate behavior (i.e. ignoring the negative behavior of a student who is trying to gain attention); (g) verbal reminders of therapy session rules (i.e. “We don’t interrupt other students when they are speaking.”); (h) earned activities and privileges (i.e. rewarding students with special activities or privileges, such as lunch with the SLP, for demonstrating appropriate behaviors); (i) work completion contracts (a written agreement developed by the SLP and student together with specific tasks the student will perform such as “stay focused for 5 minutes until the timer goes off”); (j) documented self-monitoring of negative behaviors (i.e. a student records how frequently he or she performs specific, targeted negative behaviors such as ‘the number of times he/she threw a chair today’);
(k) points system/token economy (students earn points for demonstrating appropriate behaviors and can use the points to ‘purchase’ items from a school ‘store’); and (l) home-school reward system (parents/guardians reward a child’s positive school behavior at home - this requires frequent, timely communication between school and home). All questions related to implementation were asked and analyzed using a five-point scale ranging from Never to Always.

Data analysis of the results indicated that, on average, SLPs’ implement all 12 of the specific research-based behavioral intervention strategies Sometimes (M=3.41, SD=.93). It should be noted that although the overall responses indicated Sometimes, the score leaned heavily toward Often (See Table 4).

Table 4

<p>| SLP Implementation of Research-Based Behavioral Intervention Strategies (cumulative Mean) |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|</p>
<table>
<thead>
<tr>
<th>1=Never</th>
<th>2=Rarely</th>
<th>3=Sometimes</th>
<th>4=Often</th>
<th>5=Always</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>&lt;--------------------------------------------------------------------------------</td>
<td>&lt;--------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.41</td>
<td>&lt;--------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Further, the data showed a range of levels of implementation, depending on the specific research-based behavioral intervention strategy listed (see Table 5). Although a majority of the strategies were used Often or Sometimes, three were used Rarely. These rarely used items consisted of work completion contracts, self-monitoring and home-school reward system.
Table 5

*SLP Implementation of Each Individual Research-Based Behavioral Intervention Strategy*

<table>
<thead>
<tr>
<th>Question</th>
<th>M(SD)</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1  Set well-defined limits, rules and task expectations</td>
<td>4.2 (.73)</td>
<td>Often</td>
</tr>
<tr>
<td>Q2  Establish consistent routines</td>
<td>4.2 (.71)</td>
<td>Often</td>
</tr>
<tr>
<td>Q3  Set easily attainable daily goals</td>
<td>3.8 (.82)</td>
<td>Often</td>
</tr>
<tr>
<td>Q4  Nonverbal signals for appropriate behavior</td>
<td>4.0 (.83)</td>
<td>Often</td>
</tr>
<tr>
<td>Q5  Frequent verbal reinforcement of appropriate behavior</td>
<td>4.4 (.71)</td>
<td>Often</td>
</tr>
<tr>
<td>Q6  Planned ignoring of minor behavior</td>
<td>4.1 (.73)</td>
<td>Often</td>
</tr>
<tr>
<td>Q7  Verbal reminders of rules</td>
<td>4.0 (.82)</td>
<td>Often</td>
</tr>
<tr>
<td>Q8  Earned activities and privileges</td>
<td>3.4 (1.12)</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Q9  Work completion contracts</td>
<td>2.1 (1.07)</td>
<td>Rarely</td>
</tr>
<tr>
<td>Q10 Documented self-monitoring</td>
<td>1.9 (1.10)</td>
<td>Rarely</td>
</tr>
<tr>
<td>Q11 Points system/token economy</td>
<td>3.1 (1.31)</td>
<td>Sometimes</td>
</tr>
<tr>
<td>Q12 Home-school reward system</td>
<td>2.1 (1.14)</td>
<td>Rarely</td>
</tr>
</tbody>
</table>

**Training in Research-Based Behavioral Intervention Strategies Based on Years of Experience.** Research question 2a-1 sought to determine if there were statistically significant differences in SLPs’ level of training in research-based behavioral intervention strategies based on years of experience. The independent variables were *Novice* (5 or less years in the field) and
Experienced (greater than 5 years in the field). The dependent variable was Level of Training and was based on responses to survey question 15. Because question 15 had 12 sub-parts, a mean score for each respondent’s answer was calculated for input in the analysis. An independent samples 2-tailed t-test was done to compare the two groups. Results indicated that there was not a statistically significant difference in the scores for Novice (M=1.87, SD=.55) and Experienced (M=1.86, SD=.53); t(75)=.101, p = .92 (see Table 6).

It should be noted that the calculated p-value was based on 78 (DF=76) respondents who answered question 15. Due to the limited sample size, the power of this conclusion is less than that recommended by generally accepted guidelines for research. Thus, the findings of this research must be discerned with the understanding that it is limited to the participants in this study and cannot be viewed as reflective of the general population.

Table 6

*Independent Samples 2-Tailed T-Test for SLP Level of Training in Behavioral Intervention Strategies (Novice vs. Experienced)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novice</td>
<td>12</td>
<td>1.88</td>
<td>.55</td>
</tr>
<tr>
<td>Experienced</td>
<td>66</td>
<td>1.86</td>
<td>.53</td>
</tr>
</tbody>
</table>

Implementation of Research-Based Behavioral Intervention Strategies Based on Years of Experience. Research question 2a-2 sought to determine if there were statistically significant differences in SLPs’ level of implementation of research-based behavioral
intervention strategies based on years of experience. The independent variables were *Novice* (5 or less years in the field) and *Experienced* (greater than 5 years in the field). The dependent variable was *Level of Implementation* and was based on responses to survey question 16. Because question 16 had 12 sub-parts, a mean score for each respondent’s answer was calculated for input in the analysis. A 2-tailed t-test was calculated to compare the two groups. Results indicated that there was not a statistically significant difference in scores for *Novice* (M=3.28, SD=.57) and *Experienced* (M=3.49, SD=.55); t(76)= -1.15, p = .25 (see Table 7).

It should be noted that the calculated p-value was based on 78 (DF=76) respondents who answered question 16. Due to the limited size of the sample, the *power* of this conclusion is less than that recommended by generally accepted guidelines for research. Thus, the findings of this research must be discerned with the understanding that it is limited to the participants in this study and cannot be viewed as reflective of the general population.

Table 7

*Independent Samples 2-Tailed T-Test for SLP Level of Implementation of Research-Based Behavioral Intervention Strategies (Novice vs. Experienced)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novice</td>
<td>12</td>
<td>3.28</td>
<td>.57</td>
</tr>
<tr>
<td>Experienced</td>
<td>66</td>
<td>3.49</td>
<td>.55</td>
</tr>
</tbody>
</table>
**Training in Research-Based Behavioral Intervention Strategies Based on Size of School District.** Research question 2b-1 sought to determine if there were statistically significant differences in SLPs’ level of training in research-based behavioral intervention strategies based on the size of the school district in which they were employed. The independent variables were *Small School District* (less than 10,000 students) and *Large School District* (10,000 or more students). The dependent variable was *Level of Training* and was based on responses to survey question 15. Because question 15 had 12 sub-parts, a mean score for each respondent’s answer was calculated for input in the analysis. A 2-tailed t-test was done to compare the two groups. Results indicated that there was not a statistically significant difference in the scores for *Small* (M=1.91, SD=.53) and *Large* (M=1.80, SD=.51); t(74)=.88, p = .38 (see Table 8).

It should be noted that the calculated p-value was based on 77 (DF=75) respondents who answered question 15. Due to the limited size of the sample, the *power* of this conclusion is less than that recommended by generally accepted guidelines for research. Thus, this conclusion must be discerned with the understanding that it is limited to the participants in this study and cannot be viewed as reflective of the general population.
Table 8

Independent Samples 2-Tailed T-Test for SLP Level of Training in Behavioral Intervention Strategies (Small vs. Large School District)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>47</td>
<td>1.91</td>
<td>.53</td>
</tr>
<tr>
<td>Large</td>
<td>30</td>
<td>1.81</td>
<td>.51</td>
</tr>
</tbody>
</table>

Implementation of Research-Based Behavioral Intervention Strategies Based on Size of School District. Research question 2b-2 sought to determine if there were statistically significant differences in SLPs’ level of implementation of research-based behavioral intervention strategies based on the size of the school district in which they were employed. The independent variables were Small School District (less than 10,000 students) and Large School District (10,000 or more students). The dependent variable was Level of Implementation and was based on responses to survey question 16. Because question 16 had 12 sub-parts, a mean score for each respondent’s answer was calculated for input in the analysis. A 2-tailed t-test was done to compare the two groups. Results indicated that there was not a statistically significant difference in the scores for Small (M=3.37, SD=.51) and Large (M=3.57, SD=.61); t(75)=-1.51, p = .135 (see Table 9).

It should be noted that the calculated p-value was based on 77 (DF=75) respondents who answered question 16. Due to the limited size of the sample, the power of this conclusion is less than that recommended by generally accepted guidelines for research. Thus, this conclusion
must be discerned with the understanding that the results are limited to the participants in this study and cannot be viewed as reflective of the general population.

Table 9

*Independent Samples 2-Tailed T-Test for SLP Level of Implementation of Research-Based Behavioral Intervention Strategies (Small vs. Large School District)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>47</td>
<td>3.37</td>
<td>.51</td>
</tr>
<tr>
<td>Large</td>
<td>30</td>
<td>3.57</td>
<td>.61</td>
</tr>
</tbody>
</table>

*Additional information gathered.* In addition to the core research questions, the survey asked multiple questions that the researcher felt would provide valuable insight on SLPs’ own experiences in a school setting. Each of these additional survey questions are discussed below.

Question 8 of the survey asked respondents how many students were currently in their caseload. Twenty-three percent answered that they had between 41-50 students, while 19% said they had 51-60 students (See Figure 1). The smallest caseload was 1-10 students with only one respondent having this amount, while the largest caseload was 91+ with two respondents indicating this was the size of their caseload.
Question 10 of the survey asked *Do you currently, or have you in the past 3 years, provided speech therapy for a child(ren) with a diagnosed emotional disturbance (ED) that is listed on their IEP?* Of all respondents, 75.9% answered Yes (n=59), 20.5% answered No (n=16), and 3.8% answered Not Sure (n=3). This data indicates that a significant majority of SLPs in the study work with children with a diagnosed ED.
Of those who answered Yes to question 10 of the survey, Question 11 asked *What percentage of the students in your current caseload have a diagnosed emotional disturbance (ED) that is listed on their IEP?* A significant majority (n=66, 85.7%) indicated that 0-10% of their students had a diagnosed ED on their IEP. A total of 8 respondents (10.4%) answered that 11-20% of their students had a diagnosed ED. While one respondent answered that 41-50% of the students in his/her caseload had a diagnosed ED. Two respondents answered Not Sure.

Question 12 asked *Do you currently, or have you in the past 3 years, provide services to students who exhibit disruptive behaviors (interrupting, physical aggression, defiance/arguing, use of profanity, threats) but do NOT have diagnosed emotional disturbance (ED) that is listed on their IEP?* Seventy respondents (90.9%) indicated they had students who exhibited disruptive behaviors. Six respondents (7.8%) indicated they did not have students who exhibited disruptive behaviors and one respondent was not sure.

Question 13 asked *For ALL students in your caseload (including those without an ED diagnosis), which disruptive behaviors have you encountered in the last 3 years (check all that apply)?* Options for responses were interrupting, physical aggression, defiance/arguing, use of profanity and threats. All respondents (100%) said that they have encountered defiance and arguing with their students within the last three years, while 99% have encountered interrupting, 74% physical aggression, 69% use of profanity, and 30% have been threatened (see Table 10).
Table 10

*Disruptive Behaviors SLP has Encountered in the Last 3 Years*

<table>
<thead>
<tr>
<th>Behavior</th>
<th>N</th>
<th>Percent of Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interrupting</td>
<td>77</td>
<td>98.7%</td>
</tr>
<tr>
<td>Physical aggression</td>
<td>58</td>
<td>74.4%</td>
</tr>
<tr>
<td>Defiance/Arguing</td>
<td>78</td>
<td>100%</td>
</tr>
<tr>
<td>Use of profanity</td>
<td>54</td>
<td>69.2%</td>
</tr>
<tr>
<td>Threats</td>
<td>23</td>
<td>29.5%</td>
</tr>
</tbody>
</table>

Question 14 asked *For ALL students in your caseload (including those without an ED diagnosis), what percentage have exhibited disruptive behaviors (interrupting, physical aggression, defiance/arguing, use of profanity, or threats) at least once during a speech therapy session in the last 3 years?* A majority of respondents (n=59, 76.6%) indicated that 0-20 percent of the students in their caseload have exhibited disruptive behaviors. Fifteen respondents (19.9%) indicated that 21-40 percent of their students have exhibited disruptive behaviors, while two (2.6%) answered 41-60 percent and one (1.3%) answered 61-80 percent. No respondents chose 81-100 percent.

Question 17 asked *If you have been trained in any of the behavioral intervention strategies listed above, where did you obtain your training? (check all that apply).* Options for responses were Attended PD [professional development] offered by my school district, Degree Program, Continuing education course, Searched the internet, Read professional journal, Attended professional conference, Consulted a textbook and Other. Respondents were able to
choose more than one answer as professionals generally receive ongoing training from multiple sources throughout their career. A majority (61.5%) attended Professional Development offered by their school district while 20.6% received training from a continuing education course. Only 3.3% consulted a textbook (see Table 11).

Table 11

*Where SLP Respondents Received Previous Behavioral Intervention Strategies Training*

<table>
<thead>
<tr>
<th>Where</th>
<th>N</th>
<th>Percentage of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attended PD offered by my School District*</td>
<td>48</td>
<td>61.5%</td>
</tr>
<tr>
<td>Degree Program</td>
<td>20</td>
<td>8.2%</td>
</tr>
<tr>
<td>Continuing Education Course</td>
<td>50</td>
<td>20.6%</td>
</tr>
<tr>
<td>Searched the Internet</td>
<td>22</td>
<td>9.1%</td>
</tr>
<tr>
<td>Read a Professional Journal</td>
<td>34</td>
<td>14.0%</td>
</tr>
<tr>
<td>Attended a Professional Conference</td>
<td>42</td>
<td>19.8%</td>
</tr>
<tr>
<td>Consulted a Textbook</td>
<td>8</td>
<td>3.3%</td>
</tr>
<tr>
<td>Other**</td>
<td>19</td>
<td>7.8%</td>
</tr>
</tbody>
</table>

*For respondents that checked ‘Attended PD offered by my school district’, the survey then asked ‘What was the specific topic?’ and allowed respondents to type in an answer. Each topic and the number of respondents who wrote the topic are listed in Table 12.*
Table 12

Specific Topic of Behavioral-Related Professional Development Previously Offered by Respondent’s School District

<table>
<thead>
<tr>
<th>Specific Topic of Previous Professional Development</th>
<th>Number of Respondents That Wrote that Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zones of Regulation</td>
<td>1</td>
</tr>
<tr>
<td>Trust Based Relational Intervention</td>
<td>1</td>
</tr>
<tr>
<td>Trauma Sensitivity</td>
<td>1</td>
</tr>
<tr>
<td>Board Certified Behavior Analyst</td>
<td>1</td>
</tr>
<tr>
<td>Managing Behaviors</td>
<td>7</td>
</tr>
<tr>
<td>Teaching Self-Regulation</td>
<td>1</td>
</tr>
<tr>
<td>Safety Care</td>
<td>1</td>
</tr>
<tr>
<td>Pro-Act</td>
<td>1</td>
</tr>
<tr>
<td>Crisis Prevention Institute (CPI)</td>
<td>5</td>
</tr>
<tr>
<td>Boys Town</td>
<td>2</td>
</tr>
<tr>
<td>Positive Reinforcement</td>
<td>2</td>
</tr>
<tr>
<td>Positive Behavior Interventions and Support (PBIS)</td>
<td>5</td>
</tr>
<tr>
<td>Nonviolent Crisis Intervention (NCI)</td>
<td>1</td>
</tr>
<tr>
<td>Responsive Classroom</td>
<td>1</td>
</tr>
<tr>
<td>Conscious Discipline</td>
<td>1</td>
</tr>
<tr>
<td>Champs</td>
<td>1</td>
</tr>
</tbody>
</table>
**Respondents who checked *Other* on question 17 were given the option to specify. The individual responses were as follows:**

- “Student specific training”
- “Structured Teaching (routine based, visual supports, etc.)”
- “Post grad course”
- “Observed classroom teachers”
- “Monthly behavior bulletins from our behavior specialist”
- “Mentorship/frequent observation of experienced SWs/psychologists at psychiatric hospital where I used to work; participated in grand rounds”
- “Learned from working with team members”
- “I received a great deal of training in a previous job”
- “Experience and sharing with colleagues”
- “During my time as a classroom teacher”
- “Crisis Prevention Intervention (CPI); provided off-campus”
- “Consulted with school behavior team and contracted BCBAs”
- “Consulted experts in my school district”
- “Common sense in the trenches observation”
- “Colleague collaboration”
- “A variety of autism focused trainings through the district focus on behavior”
- “Coursework and PD for my previous profession (early childhood educator)”
Question 19 asked respondents *How much has working with students that have behavior difficulties negatively affected your job satisfaction in the past 3 years?* Options for responses were *Minimally, Moderately* and *Significantly*. A majority (60.3%) of respondents indicated the behavioral issues had a Minimal impact on their job satisfaction. Thirty two percent said their job satisfaction was Moderately impacted by behaviors. And 7.7% said it had a Significant impact.

Question 20 asked respondents *How much has working with students that have behavior issues negatively affected your ability to provide speech services in the past 3 years?* Fifty-six percent answered Minimally, 38% said Moderately and 0.5% responded Significantly (see Figure 2).

**Figure 2**

*Level of Impact of Student Behavioral Issues on SLPs’ Ability to Provide Speech Services*

![Bar chart showing the level of impact of student behavioral issues on SLPs’ ability to provide speech services.](image)

Question 21 asked *In a typical week, what percentage of time during therapy sessions do you spend addressing student behavioral issues?* A majority (49.4%) responded 0-10% of their time working with students was used to address behavioral issues. Only one respondent said that they spent 51-60% of their time (See Figure 3).
Question 18 asked *If your school district were to offer behavioral-related Professional Development in the future, what specific topic(s) would be helpful to you?* Respondents were provided a blank text box in which to type their answers. Verbatim answers were as follows:

- “Setting up’ my sessions to prevent behaviors from occurring, determining the function of the behavior”
- “Addressing physical aggression”
• “Advanced responsive classroom; Emotional regulation”
• “Anything”
• “Anything would be helpful, zero trainings at new district”
• “At this point no. I was in a district that required multiple training sessions for students with ASD [Autism Spectrum Disorder], so I’ve had extensive training in this area”
• “Autism related interventions”
• “Behavioral intervention”
• “Boys Town! We have it but I am not trained even though I have asked many times”
• “Classroom management techniques for difficult/disruptive behaviors to provide instructive approach with carryover strategies that support teachers so they don’t rely on paraprofessional to work with students”
• “Clear guidelines on how to approach aggressive behaviors prior to getting out of hand”
• “Conferencing with parents, counseling parents, ideas for home follow up”
• “Conscious Discipline”
• “Crisis Management - biggest difficulty in school are students that refuse or elope that pull staff members from assigned duties to monitor”
• “Defiance in early childhood”
• “For non-verbal students”
• “Functional communication training”
• “Goals related to behavior management self regulation and how to determine accuracy/collect data”
• “Good, evidence ways to deal with our students who seem out of control of their own behavior”
• “How to ensure consistency across staff/settings”

• “How to handle inappropriate behaviors on the spot. Sometimes it is hard to think quickly”

• “I feel that teachers and SLP's have the skills to deal with behaviors. Large class size and caseloads make it difficult to implement strategies. 4-5 children with autism is always going to be a tough group. If there is training on how to implement strategies with limited time and resources I would like that training”

• “Incorporating appropriate elements of ABA [Applied Behavior Analysis] into speech-language therapy; how to determine for whom these techniques are appropriate and which techniques for which behaviors”

• “Information to staff so that all teachers implement the same guidelines for behavior”

• “Love and Logic”

• “Managing off-task behaviors, working with students with behavior issues related to ASD [Autism Spectrum Disorder”

• “Mental health issues resulting from childhood trauma’

• “Positive Discipline”

• “Reduced physical aggression”

• “Safety care, managing student refusal to attend therapy/work”

• “Self-defense for kids with physical aggression (eg, appropriate ways to react when bitten, scratched, punched, etc)”

• “Session management”

• “Social emotional learning”

• “Student documentation of behaviors”
• “Systems across district”
• “Teaching students how to self-monitor”
• “Tips for keeping demand up when behaviors persist”
• “Training for general education teachers”
• “Training specific to SLP, not teachers”
• “Universal supports for behavior”
• “Verbal behavior”
• “What to do when they talk about self harm (besides the referral to a threat assessment)”
• “Working with students who chronically refuse to participate when you cannot have a natural consequence (like missed recess to make up work)”
• “Working with students who have ED [Emotional Disturbance] or meet ED criteria; specifically what to do when they refuse/argue with staff”

Summary

This chapter analyzed the results of the SLP training and implementation survey that was electronically distributed to SLPs in the US who work in elementary school settings. Descriptive and inferential statistics were used to analyze respondents’ training and implementation of research-based behavioral intervention strategies.

Descriptive statistics were used to analyze participant response data for research question 1 with a separate analysis being completed for each sub-part question 1a and question 1b. A calculation of the central tendency (SD, mean) was used to determine the level of training and implementation of behavioral intervention strategies by SLPs in the data set.

For research question 2, inferential statistics were employed to determine if there was a statistically significant difference among SLPs based on years of experience and size of school
district. This was done by running a total of four independent samples 2-tailed t-tests. The independent variables were (a) years of experience in the field (novice vs. experienced) and (b) size of the school district where the SLP is employed (small vs. large). The dependent variables in the study consisted of SLPs (a) training in research-based behavioral intervention strategies and (b) implementation of research-based behavioral intervention strategies.

Chapter 4 presented data analysis for responses provided by US SLPs on the training and implementation survey. Chapter 5 will provide summary, conclusion, discussion and recommendation for future research.
CHAPTER 5

Summary, Conclusions, Discussion and Recommendations

This chapter summarizes the study on SLPs’ training and implementation of research-based behavioral intervention strategies. The chapter begins with a summary of the literature review, research design, and findings. Next, there is an overview of the conclusions drawn from the data. Lastly, there is discussion and recommendations for practice and further study.

Purpose of Study

The purpose of this study was bipartite: 1) to examine school-based Speech-Language Pathologists’ training and implementation of research-based behavioral intervention strategies at the national level, and, 2) to determine if differences exist in school-based Speech-Language Pathologists' training and implementation of research-based behavioral intervention strategies based on years of experience and size of the school district.

Research Questions

The research conducted in this study focused on the following questions:

1. To what extent are K-8 speech-language pathologists:
   a. trained in research-based behavioral intervention strategies?
   b. implementing research-based behavioral intervention strategies into students’ speech pathology sessions?

2. What differences are there in K-8 SLPs’ training and implementation of research-based behavioral intervention strategies based on:
   a. years of experience in the field (novice vs. experienced)?
   b. size of the school district where they are employed (small vs. large)?
Summary of Literature Review

The review of related literature began with research on the prevalence of Emotional Disturbance (ED) and Speech-Language Impairment (SLI) in elementary-aged children. It went on to discuss the impact of behavioral difficulties and SLI on academic outcomes. Further, research was reviewed related to co-morbidity of ED and SLI. Next was a discussion of research-based behavioral intervention strategies. The review concluded with research on the history of SLPs’ role in elementary school settings in the United States.

Behavioral difficulties have a negative impact on students’ academic, social and emotional outcomes. These students have lower proficiency in math and reading, which does not improve over time (State, Simonsen, Hirn, & Wills, 2019). The achievement gap faced by students with behavioral difficulties results in a significantly higher risk of school dropout (Harrison, McLeod, Berthelsen, & Walker, 2009). But, the negative impacts are not limited to school settings. Students with behavioral difficulties often have poorer transition outcomes after leaving school and their employment rates are significantly lower than their peers (Nochajski & Schweitzer, 2014). Further, of students with behavioral difficulties who do obtain a job, the retention rate is low with a majority leaving their job within 12 months (Kang-Yi & Adams, 2017).

The research is clear that children with behavioral difficulties need more explicit, research-based, cross-disciplinary interventions during the elementary school years in order to improve overall long-term social, emotional, and academic outcomes (State et al., 2019; Lieberman, 2018). Strategies for children with behavioral difficulties need to be consistently applied across all school settings (classroom, speech, resource, etc.) and focus on research-based behavioral interventions. “Isolated efforts of individuals, including individual disciplines, cannot
solve all problems or significantly improve the outcomes of children in a disciplinary vacuum. Rather, a holistic, interprofessional approach is required - this involves a major paradigm shift beyond the current system of silos” (Lennox, Garvis, & Westerveld, 2017, p. 18). It is critical that all education professionals who interact with children are not only trained but also actively implementing, research-based behavioral intervention strategies for students with behavioral difficulties (State et al., 2019).

But, many education professionals in school settings struggle to effectively work with students who have behavioral difficulties. In a study completed by Sutherland, Conroy, Algina, & Kunemund (2018), 185 early childhood education teachers were questioned about their confidence in implementing behavior intervention strategies. Results showed that there were a statistically significant number of teachers who did not feel confident. In another recent study, the findings were similar, with a majority of teachers surveyed responding that they did not have sufficient behavioral intervention training (State et al, 2019). These, and other studies, indicate that many educational professionals are not adequately trained in behavioral intervention strategies. This issue should be addressed as “it is important to offer professional development for target staff to develop greater expertise to meet the specific needs of a school” (Stormont et al., 2011, p. 145).

In addition to an increased number of students with diagnosed ED, there has also been a significant rise of comorbidity in elementary-age children who also have a diagnosed speech or language impairment (SLI) with some researchers finding comorbidity of ED and SLI as high at 50% (Lieberman, 2018; McKeen, Reilly, Bavin, Bretherton, Cini, Conway, Cook, Eadie, Prior, Wake, & Mensah, 2017). Many children with an SLI already have significant challenges at school. For example, children diagnosed with SLI in early childhood have poorer literacy
outcomes over many years, even into middle school (Lewis, Freebairn, Tag, Ciesla, Iyengar, Stein, & Taylor, 2015). And young children with SLI are frequently rated by their teachers as being less prepared for school both socially and behaviorally (Pentimonti, 2016). Additionally, research shows that 28%-50% of children under the age of 12 with an SLI are victims of physical or verbal bullying compared to 12%-22% of their non-disabled peers (van den Bedem, Dockrell, van Alphen, Kalicharan, & Rieffe, 2018).

Historically, interventions for students with SLI, regardless of a comorbid diagnosis of ED, have been limited in scope to speech pathology (Brumbaugh & Smit, 2013). But a growing body of evidence shows that this narrow focus is not enough to improve outcomes for these students (Giangreco, Prelock & Turnbull, 2010). An interview study in England completed by Parow (2009) asked for Speech-Language Pathologists’ (SLPs’) views on serving students with ED. The responses revealed that 25% felt they did not have adequate training to effectively work with this group of students. Further, 11% of the respondents said that behavioral difficulties regularly interfered with their ability to provide therapy and assessment (Parow, 2009).

Research Design

For this study non-experimental, quantitative, survey research methods were used to examine school-based SLPs’ training and implementation of research-based behavioral intervention strategies. In addition, questions were asked to supplement and clarify the quantitative data. The items in the survey were based on a review of the literature.

Respondent data was collected via an online survey in Spring 2020. The surveys were distributed to email listservs and posted on professional blogs. Eighty-seven SLPs completed the survey. Of those, 78 were qualified to participate in the study. The online data gathered was
exported from Qualtrics to Microsoft Excel for scrubbing and then exported to SPSS for analysis. Descriptive statistics were used to determine the level of training and implementation for all SLPs in the study. Inferential statistics were used to determine if there was a statistically significant difference in training and implementation between novice and experienced SLPs and between small and large school districts. Significance was calculated in SPSS using a 2-tailed t-test with a benchmark $p$-value of .05.

**Findings**

The variables studied for this research included two independent variables (years of experience, size of school district) and two dependent variables (training, implementation). For years of experience, respondents were divided into Novice (five or less years as an SLP) and Experienced (more than five years as an SLP). For the size of the school district, respondents were divided into Small (less than 10,000 students) and Large (10,000 or more students). For both training and implementation, respondents were asked to rate their own training and implementation in each of 12 research-based behavioral intervention strategies. The 12 strategies were: Set well-defined limits, rules, and task expectations; Establish consistent routines; Set easily attainable daily goals; Nonverbal signals for appropriate behavior; Frequent verbal reinforcement for appropriate behavior (i.e. Praise); Planned ignoring of minor inappropriate behavior (i.e. ignoring the disruptive behavior of a student who is trying to gain attention); Verbal reminders of classroom rules; Earned activities and privileges (i.e. rewarding students with special activities or privileges for demonstrating appropriate behaviors); Work completion contracts (a written agreement developed by the SLP and student with specific behaviors the student will perform); Documented self-monitoring of behaviors (i.e. a student records how frequently he or she performs specific, targeted behaviors; and Points system/Token
Economy (students earn points for demonstrating appropriate behaviors). The analysis of each research question and sub-questions are discussed below.

**Level of Training for all Respondents.** When analyzing the level of training in research-based behavioral intervention strategies for all respondents (n=78), data reflected that the average for the group was Some Training. Response options were No Training, Some Training, and Considerable Training. It should be noted that although the conclusion based on data reflects Some Training, the score does lean slightly toward Considerable Training.

**Level of Implementation for all Respondents.** When analyzing the level of implementation of research-based behavioral intervention strategies for all respondents (n=78), data reflected the average for the group was Sometimes. Options for the response to the question were Never, Rarely, Sometimes, Often and Always. It should be noted that although the overall responses indicated Sometimes, the score leaned heavily toward Often.

Further, the data showed a range of levels of implementation, depending on the specific research-based behavioral intervention strategy listed within the implementation scale. Although a majority of the strategies were used Often or Sometimes, three were used Rarely. These rarely used items consisted of work completion contracts, self-monitoring, and home-school reward system.

**Level of Training for Novice vs. Experienced.** When analyzing the level of training based on years of experience, novice vs. experienced, the data reflected that there was not a statistically significant difference between the two groups. Although, when simply comparing means, Novice SLPs had slightly more training (M=1.97) than Experienced (M=1.88) with a difference of .09.
**Level of Implementation for Novice vs. Experienced.** When analyzing the level of implementation based on years of experience, novice vs. experienced, the data reflected that there was not a statistically significant difference between the two groups. Although, when simply comparing means, *Novice* SLPs had a slightly lower level of implementation (M=3.35) than *Experienced* (M=3.48) with a difference of .13.

**Level of Training for Small vs. Large School Districts.** When analyzing the level of training based on the size of the school district, small vs. large, the data reflected that there was not a statistically significant difference between the two groups. Although, when simply comparing means, *Small* school districts had a slightly lower level of training (M=1.88) than *Large* (M=1.84) with a difference of 0.04.

**Level of Implementation for Small vs. Large School Districts.** When analyzing the level of implementation based on the size of the school district, small vs. large, the data reflected that there was not a statistically significant difference between the two groups. Although, when simply comparing means, *Small* school districts had a slightly lower level of implementation (M=3.38) than *Large* (M=3.58) with a difference of 0.20.

**Additional information gathered.** In addition to the core research questions, the survey asked multiple questions that the researcher felt would provide valuable insight on SLPs’ own experiences in a school setting. A summary of these findings are as follows:

- A majority (23.0%) of K-8 SLPs have 41-50 students in their caseload.
- A significant majority (75.9%) of K-8 SLPs have at least one student in their caseload with a diagnosed Emotional Disorder (ED).
- Sixty-six (85.7%) K-8 SLPs indicated that 0-10% of students in their caseload have a diagnosed ED.
• Seventy (90.9%) K-8 SLPs answered that they have students in their caseload who exhibit disruptive behaviors but do not have a diagnosed ED.

• All (n=78) K-8 SLPs in this survey responded that they have encountered defiance/arguing with students in their caseload within the last three years, while 99% have encountered interrupting, 74% physical aggression, 69% profanity, and 30% have encountered threats from their students.

• Seventy-six percent of respondents indicated that between 0% and 20% of the students in their caseload have exhibited disruptive behaviors.

• For SLPs who already have some training in behavioral intervention strategies, 20% said they obtained their training from continuing education courses, while 19% said they were trained at a professional conference. Fourteen percent indicated that they gained their knowledge of research-based behavioral intervention strategies from reading professional journal articles. Only 8% indicated that they received their training as part of their degree program. Note that respondents were able to choose multiple sources of training for this survey question.

• When asked how much working with students that have behavior difficulties negatively affected their job satisfaction, 39.7% answered Moderately or Significantly.

• When asked how much working with students that have behavior difficulties has negatively affected their ability to provide speech services, 38.5% answered Moderately or Significantly.

• When asked what percentage of time during therapy sessions was spent addressing student behavior issues, the vast majority answered 0-10% (n=37) or 11-20% (n=32).
Although the data from this study shows that there is not a statistically significant difference in training and implementation of behavioral intervention strategies of K-8 SLPs based on years of experience or size of the school district, it did confirm that, overall, the respondents feel they are not adequately trained. This is reflected in the mean response of all participants that they only have *Some Training* and the over 50% of respondents who listed specific future behavioral intervention strategies training that they would like to receive.

Responses reflected that a majority (75.9%) of the respondents work with at least one child with a diagnosed ED and that up to 10% of their caseloads are children with a diagnosed ED. Further, 91% of respondents indicated that they work with students that exhibit disruptive behaviors.

Not only does the data reflect that SLPs who completed the survey do not have adequate training, but it also shows that the student behaviors they are encountering are negatively impacting their job satisfaction. Thirty-eight percent of respondents answered that behavior issues moderately impact their job satisfaction.

Further, these student behaviors are negatively impacting SLPs’ ability to provide speech therapy to students. When asked what percentage of time during therapy sessions was spent addressing behavior issues, 49% of respondents indicated that they spend between 11-20% of their time dealing with these issues.

**Conclusions**

The following conclusions for the respondents who completed the survey have been drawn based on the analysis of data gathered:

1. K-8 SLPs have *Some Training* in research-based behavioral intervention strategies.
2. K-8 SLPs implement research-based behavioral intervention strategies *Sometimes.*
3. There is not a statistically significant difference in SLPs’ training in research-based behavioral intervention strategies based on years of experience.

4. There is not a statistically significant difference in K-8 SLPs implementation of research-based behavioral intervention strategies based on years of experience.

5. There is not a statistically significant difference in K-8 SLPs training in research-based behavioral intervention strategies based on the size of the school district.

6. There is not a statistically significant difference in K-8 SLPs implementation of research-based behavioral intervention strategies based on the size of the school district.

7. A majority of SLPs in the study felt that they were not adequately trained to handle student behavioral issues.

Discussion

The findings of this study are consistent with the previous limited research available as it relates to SLPs’ training and implementation of research-based behavioral intervention strategies. SLPs in this study, as with previous studies (Sotherland, Conroy, Algina, & Kunemund; 2018), expressed their overall desire for additional training in behavioral intervention strategies. In both studies, respondents expressed their concern that they were not adequately trained to handle the behavior issues that arise while working with students.

This lack of training not only negatively impacts the quality of speech therapy sessions, it also negatively affects SLP job satisfaction. Research has shown that the role of the SLP in school settings needs to evolve to encompass more behavioral supports (Brumbaugh & Smit, 2013). It also shows that the lack of these behavioral supports can reduce academic achievement for at-risk students (Pentimonti, 2016).
Further, results of this study were consistent with previous studies as it relates to the types of disruptive behaviors exhibited by children in school settings. The Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5, 2013) lists behaviors often manifested by children with an Emotional Disturbance (ED) including arguing with adults, deliberately annoying others, bullying, threats, aggression, destruction of property and frequent lying. All of these behaviors were observed by all SLPs in the study.

Although the results of this study and previous studies show the need for additional professional develop for SLPs in school setting, further research is necessary to understand if the findings of this study are true of a larger population.

**Recommendations for Practice**

Based on this study, it is recommended that SLPs who work in school settings receive more training in research-based behavioral intervention strategies. The amount and type of training varies, depending on the needs of each specific school and/or district; but it is clear that training is needed. Many respondents specified that they would like more training on the following topics: preventing behaviors from escalating, dealing with physical aggression, autism-related training, mental health issues resulting from childhood trauma, and “anything”.

**Recommendations for Further Study**

This study adds to the limited existing research on SLP training and implementation of research-based behavioral intervention strategies. More research is needed that gathers data from a larger number of participants in order to give the results more power and to provide readers with more confidence in the results. Further, below are some recommendations that future researchers might explore.
1. Research studies could be conducted to better understand the trends in the frequency and severity of student behaviors during speech-sessions over time.

2. Research studies using qualitative methods could be conducted to dive deeper into K-8 SLPs’ existing training and desire for future training topics.

3. Research studies could be conducted to determine the level of training university SLP programs provide to students on research-based behavioral intervention strategies.

4. Research studies using quasi-experimental methods could be used to determine the level of improvement in student behaviors proceeding SLPs research-based behavioral intervention strategies training.

5. Research studies using quasi-experimental methods could be used to determine the level of improvement in job satisfaction after SLPs have received research-based behavioral intervention strategies training.

6. Replicating this study with SLPs that work in medical settings.
References


doi-org.wgu.idm.oclc.org/10.1044/2015_LSHSS-15-0058


https://doi.org/10.1044/2019_LSHSS-18-0100


Appendices
Appendix A Speech-Language Pathologist Training and Implementation

Questionnaire
Speech-Language Pathologist Training and Implementation Questionnaire

1. Are you currently working as a speech-language pathologist in an elementary or middle school setting:
   Yes
   No

2. Do you currently hold ASHA’s Certificate of Clinical Competence (CCC) in Speech-Language Pathology:
   Yes
   No
   In process

3. How many years have you been a practicing speech-language pathologist:
   0-2 years
   3-5 years
   6-8 years
   9-11 years
   12-14 years
   15-18 years
   19 or more years

4. What grade levels do you currently work with and/or have you worked with during the past 3 years (check all that apply):
   K-2nd
   3rd-5th
   6th-8th
   Other (please specify) ________________

5. Do you currently work full-time or part-time as a Speech-Language Pathologist:
6. Do you currently, or have you in the past 3 years, work in Title 1 School:
   Yes
   No

7. How many students are currently enrolled in your school district:
   Less than 2,500
   2,500-4,999
   5,000-7,499
   7,500-9,999
   10,000-24,999
   25,000-49,999
   50,000-74,999
   75,000-99,999
   100,000 or more

8. How many students are currently in your caseload:
   1-10
   11-20
   21-30
   31-40
   41-50
   51-60
   61-70
   71-80
   81-90
   91 or more

9. In which state do you currently work:
10. Do you currently, or have you in the past 3 years, provided speech therapy for a child(ren) with a diagnosed emotional disturbance (ED) that is listed on their IEP:
   Yes
   No
   Not sure

11. What percentage of the students in your current caseload have a diagnosed emotional disturbance (ED) that is listed on their IEP:
   0-10%
   11-20%
   21-30%
   31-40%
   41-50%
   51-60%
   61-70%
   71-80%
   81-90%
   91-100%
   Not sure

12. Do you currently, or have you in the past 3 years, provide services to students who exhibit disruptive behaviors (interrupting, physical aggression, defiance/arguing, use of profanity, threats) but do NOT have diagnosed emotional disturbance (ED) that is listed on their IEP:
   Yes
   No
   Not sure

13. For ALL students in your caseload (including those without an ED diagnosis), which disruptive behaviors have you encountered in the last 3 years (check all that apply):
Interrupting
Physical aggression
Defiance/Arguing
Use of profanity
Threats
Other ____________________

14. For **ALL** students in your caseload (including those **without** an ED diagnosis), what percentage have exhibited disruptive behaviors (interrupting, physical aggression, defiance/arguing, use of profanity, or threats) at least once during a speech therapy session in the last 3 years:

- 0%-20%
- 21%-40%
- 41%-60%
- 61%-80%
- 81%-100%

Note - Definition of RESEARCH-BASED: Systematically researched and shown to make a positive difference in improving student behaviors.

15. To what extent have you **been trained** in each of the following research-based behavioral intervention strategies:

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<thead>
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<th></th>
<th>Considerable training</th>
<th>Some training</th>
<th>No training</th>
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<tbody>
<tr>
<td>Set well-defined limits, rules, and task expectations (discuss rules/expectations, post them and consistently enforce them)</td>
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<tr>
<td>Establish consistent routines (discuss routines, post schedule/routine and follow it)</td>
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<tr>
<td>Set easily attainable daily goals to allow for student success (i.e. if a student blurts out 5 times during a speech session, set a goal of 4 times - not zero times)</td>
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<tr>
<td>Nonverbal signals for appropriate behavior (i.e. hold a finger to your lips for 'quiet'; thumbs up/thumbs down)</td>
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<td>Frequent verbal reinforcement for appropriate behavior (i.e. praise that is immediate, specific and sincere)</td>
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<td>Planned ignoring of minor inappropriate behavior (i.e. ignoring the negative behavior of a student who is trying to gain attention)</td>
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<td>Verbal reminders of therapy session rules (i.e. “We don’t interrupt other students when they are speaking”)</td>
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<td>Earned activities and privileges (i.e. rewarding students with special activities or privileges, such as lunch with the SLP, for demonstrating appropriate behaviors)</td>
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<td>Work completion contracts (a written agreement developed by the SLP and student together with specific tasks the student will perform such as “stay focused for 5 minutes until the timer goes off”)</td>
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<td>Documented self-monitoring of negative behaviors (i.e. a student records how frequently he or she performs specific, targeted negative behaviors such as ‘the number of times he/she threw a chair today’)</td>
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<td>Points system/Token Economy (students earn points for demonstrating appropriate behaviors and can use the points to ‘purchase’ items from a school ‘store’)</td>
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<td>Home-school reward system (parents/guardians reward a child’s positive school behavior at home - this requires frequent, timely communication between school and home)</td>
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*If “Other”, please list/describe: ________________________________

16. To what extent have you **implemented** each of the following research-based behavioral intervention strategies during your speech therapy sessions in the last 3 years:
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<th></th>
<th>Never 1</th>
<th>Rarely 2</th>
<th>Sometimes 3</th>
<th>Often 4</th>
<th>Always 5</th>
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<tbody>
<tr>
<td>Set well-defined limits, rules, and task expectations (discussing rules/expectations, posting them and consistently enforcing them)</td>
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<td>Establish consistent routines (discussing routines, posting them and following them)</td>
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<td>Set easily attainable daily goals to allow for student success (i.e. if a student blurts out 5 times during a speech session, set a goal of 4 times - not zero times)</td>
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<td>Planned ignoring of minor inappropriate behavior (i.e. ignoring the negative behavior of a student who is trying to gain attention)</td>
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<tr>
<td>Verbal reminders of therapy session rules (i.e. “We don’t interrupt other students when they are speaking”)</td>
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<td>Earned activities and privileges (i.e. rewarding students with special activities or privileges, such as lunch with the SLP, for demonstrating appropriate behaviors)</td>
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<td>Work completion contracts (a written agreement developed by the SLP and student together with specific tasks the student will perform such as “stay focused for 5 minutes until the timer goes off”)</td>
<td></td>
<td></td>
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<tr>
<td>Documented self-monitoring of negative behaviors (i.e. a student</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
95

<table>
<thead>
<tr>
<th>Records how frequently he or she performs specific, targeted negative behaviors such as ‘the number of times he/she threw a chair today’)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Points system/Token Economy (students earn points for demonstrating appropriate behaviors and can use the points to ‘purchase’ items from a school ‘store’)</th>
</tr>
</thead>
</table>

<table>
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<tr>
<th>Home-school reward system (parents/guardians reward a child’s positive school behavior at home - this requires frequent, timely communication between school and home)</th>
</tr>
</thead>
</table>

*If “Other”, please list: __________________________

17. If you have been trained in any of the behavioral intervention strategies listed above, where did you obtain your training? (check all that apply):
   - Attended PD offered by my school district
   - Degree program

   If so, what was the specific topic of the behavioral-related Professional Development you attended? ________________
Continuing education course
Searched the internet
Read professional journal article(s)
Attended a professional conference
Consulted a textbook
Other ____________________

18. If your school district were to offer behavioral-related Professional Development in the future, what specific topic(s) would be helpful to you? ________________________________

19. How much has working with students that have behavior difficulties negatively affected your job satisfaction in the past 3 years:
   - Minimally
   - Moderately
   - Significantly

20. How much has working with students that have behavior issues negatively affected your ability to provide speech services in the past 3 years:
   - Minimally
   - Moderately
   - Significantly

21. In a typical week, what percentage of time during therapy sessions do you spend addressing student behavioral issues:
   - 0-10%
   - 11-20%
   - 21-30%
   - 31-40%
   - 41-50%
   - 51-60%
   - 61-70%
71-80%
81-90%
91-100%
Appendix B Survey Research Matrix
## Survey Research Matrix

Scherschligt Survey Research Matrix

<table>
<thead>
<tr>
<th>Question</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you currently working as a speech-language pathologist in an elementary or middle school setting</td>
<td>N/A</td>
</tr>
<tr>
<td>Do you currently hold ASHA’s Certificate of Clinical Competence (CCC) in Speech-Language Pathology</td>
<td>Finestack &amp; Satterlund (2018)</td>
</tr>
<tr>
<td>How many years have you been a practicing speech-language pathologist</td>
<td>N/A</td>
</tr>
<tr>
<td>What grade levels do you currently work with and/or have you worked with in the past 3 years</td>
<td>N/A</td>
</tr>
<tr>
<td>Do you currently work full-time or part-time as a Speech-Language Pathologist</td>
<td>N/A</td>
</tr>
<tr>
<td>Do you currently or have you in the past 3 years work in Title 1 School</td>
<td>N/A</td>
</tr>
<tr>
<td>How many students are currently in your school district</td>
<td>N/A</td>
</tr>
<tr>
<td>How many students are currently in your caseload</td>
<td>N/A</td>
</tr>
<tr>
<td>What state do you currently work in</td>
<td>N/A</td>
</tr>
<tr>
<td>Question</td>
<td>Answer</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Do you currently, or have you in the past 3 years,</td>
<td>N/A</td>
</tr>
<tr>
<td>provided speech therapy for a child(ren) with a diagnosed emotional</td>
<td></td>
</tr>
<tr>
<td>disturbance (ED) that is listed on their IEP</td>
<td></td>
</tr>
<tr>
<td>What percentage of the students in your current caseload have a</td>
<td>N/A</td>
</tr>
<tr>
<td>diagnosed ED that is listed on their IEP</td>
<td></td>
</tr>
<tr>
<td>Do you currently, or have you in the past 3 years,</td>
<td>Diagnostic and Statistical Manual of Mental Disorders (DSM–5) symptoms of Disruptive Behavior Disorders</td>
</tr>
<tr>
<td>provide services to students who exhibit behavioral difficulties</td>
<td></td>
</tr>
<tr>
<td>(interrupting, physical aggression, defiance/arguing, use of profanity,</td>
<td></td>
</tr>
<tr>
<td>threats) but do NOT have a formal ED diagnosis on their IEP</td>
<td></td>
</tr>
<tr>
<td>For ALL students in your caseload (including those with an ED diagnosis</td>
<td>Diagnostic and Statistical Manual of Mental Disorders (DSM–5) symptoms of Disruptive Behavior Disorders</td>
</tr>
<tr>
<td>AND those without), which disruptive behaviors have you encountered</td>
<td></td>
</tr>
<tr>
<td>in the last 3 years</td>
<td></td>
</tr>
<tr>
<td>For ALL students in your caseload (including those with an ED diagnosis</td>
<td>Diagnostic and Statistical Manual of Mental Disorders (DSM–5) symptoms of Disruptive Behavior Disorders</td>
</tr>
<tr>
<td>AND those without), what percentage of students have exhibited</td>
<td></td>
</tr>
<tr>
<td>disruptive behaviors (specifically interrupting, physical aggression,</td>
<td></td>
</tr>
<tr>
<td>defiance/arguing, use of profanity, threats) but do NOT have a formal</td>
<td></td>
</tr>
<tr>
<td>ED diagnosis on their IEP</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>defiance/arguing, use of profanity, or threats) at least once during a speech therapy session in the last 3 years</strong></td>
<td><strong>Disruptive Behavior Disorders</strong></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>To what extent have you <em>been trained</em> in each of the following research-based behavioral intervention strategies</strong></td>
<td><strong>See list below</strong></td>
</tr>
<tr>
<td><strong>To what extent have you <em>implemented</em> each of the following research-based behavioral intervention strategies during your speech therapy sessions in the last 3 years</strong></td>
<td><strong>See list below</strong></td>
</tr>
<tr>
<td><strong>If you have been trained in any of the behavioral intervention strategies listed above, where did you learn these strategies</strong></td>
<td><strong>N/A</strong></td>
</tr>
<tr>
<td><strong>If your school district were to offer behavioral-related Professional Development in the future, what specific topic(s) would be helpful to you</strong></td>
<td><strong>N/A</strong></td>
</tr>
<tr>
<td><strong>How much has working with students with behavior difficulties negatively affected your job satisfaction in the past 3 years</strong></td>
<td><strong>N/A</strong></td>
</tr>
<tr>
<td><strong>How much has working with students that have behavior difficulties negatively affected your ability to provide speech services in the past 3 years</strong></td>
<td>N/A</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td><strong>In a typical week, what percentage of time during therapy sessions do you spend addressing disruptive behaviors</strong></td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Lickert Scale (used in questions 15 and 16)**

<table>
<thead>
<tr>
<th><strong>Research-based Behavioral Intervention Strategy</strong></th>
<th><strong>Research/Literature Review</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish consistent routines (discussing routines, posting them and following them)</td>
<td>Bak &amp; Asaro-Saddler (2013), Lukowiak (2010), Niesyn, (2009)</td>
</tr>
<tr>
<td>Set easily attainable daily goals to allow for student success (i.e. if a student blurts out 5 times during a speech session, set a goal of 4 times - not zero times)</td>
<td>Bak &amp; Asaro-Saddler (2013), Niesyn (2009)</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Frequent verbal reinforcement for appropriate behavior (i.e. praise that is immediate, specific and sincere)</td>
<td>Bak &amp; Asaro-Saddler (2013), Lukowiak (2010), Lieberman, (2018), Mitchell et al (2018)</td>
</tr>
<tr>
<td>Planned ignoring of minor inappropriate behavior (i.e. ignoring the negative behavior of a student who is trying to gain attention)</td>
<td>Lukowiak (2010), Hester et al (2009), Karasu et al (2019)</td>
</tr>
<tr>
<td>Verbal reminders of therapy session rules (i.e. “We don’t interrupt other students when they are speaking”)</td>
<td>Lieberman (2018), Lukowiak, (2010)</td>
</tr>
<tr>
<td>Earned activities and privileges (i.e. rewarding students with special activities or privileges, such as lunch with the SLP, for demonstrating appropriate behaviors)</td>
<td>Lukowiak (2010), Mitchell et al (2018)</td>
</tr>
<tr>
<td>Work completion contracts (a written agreement developed by the SLP and student together with specific tasks the student will perform such as “stay focused for 5 minutes until the timer goes off”)</td>
<td>Bak &amp; Asaro-Saddler (2013), Lukowiak (2010)</td>
</tr>
<tr>
<td>Documented self-monitoring of negative behaviors (i.e. a student records how frequently he or she performs specific, targeted negative behaviors such as ‘the number of times he/she threw a chair today’)</td>
<td>Lieberman (2018), Lukowiak (2010), Mitchell et al (2018)</td>
</tr>
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</tr>
<tr>
<td>Points system/Token Economy (students earn points for demonstrating appropriate behaviors and can use the points to ‘purchase’ items from a school ‘store’)</td>
<td>Bak &amp; Asaro-Saddler (2013), Lukowiak (2010), Karasu et al (2019)</td>
</tr>
<tr>
<td>Home-school reward system (parents/guardians reward a child’s positive school behavior at home - this requires frequent, timely communication between school and home)</td>
<td>Lukowiak (2010)</td>
</tr>
<tr>
<td>Other</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Appendix C Survey Pre-Notification Post
Dear School-Based SLPs,

My name is Ruth Scherschligt and I am a doctoral student at the University of South Dakota. For my dissertation, I will be conducting a study to learn about school-based Speech-Language Pathologists’ training and implementation of research-based behavioral intervention strategies.

I am writing to ask you for your help in this study. In two days, I will be posting an invitation to participate in a 21-item online survey. Survey questions will ask about your training and implementation of research-based behavioral intervention strategies. The survey will take approximately 10 minutes to complete. By participating in this survey, others may benefit in the future from what is learned as a result of this study.

Survey responses will be anonymous to ensure that they cannot be linked to you.

The success of this research project relies on your participation. I thank you in advance for considering participation in this important research study.

Thank you,

Ruth Scherschligt
Doctoral Student
University of South Dakota
School of Education
Appendix D Survey Invitation to Participate Post
Survey Invitation to Participate (Blog Post/Email)

Dear School-Based SLPs,

You are being invited to participate in a research study about school-based SLPs’ training and implementation of research-based behavioral intervention strategies.

If you agree to participate, we would like you to complete a survey about your training and implementation of behavioral intervention strategies. The survey should take approximately 10 minutes to complete and the URL link is provided below:

<URL Link>

**We will keep the information you provide confidential.** There are no known risks from completing this survey and you will not benefit personally. However, we are hopeful that the information you provide will positively impact school administrators’ future decisions on professional-development for school-based SLPs.

Your participation in the survey is completely voluntary and you may decide to stop participation at any time. You do not have to answer any questions you do not want to answer.

Completion of this survey implies that you have read the information in this letter and you consent to participate in the survey.

If you have any questions, concerns or complaints, now or later, you may contact me at the number below. If you have any questions about your rights as a human subject, complaints, concerns or wish to talk to someone who is independent of this research, contact the University of South Dakota Office for Human Subjects Protections at 605-658-3743.

Thank you for your time!

Ruth Scherschligt
Doctoral Student
University of South Dakota
School of Education
Cell: (605) 759-8147
Appendix E Survey Follow-Up Post
Survey Follow-Up (Blog Post/Email)

Dear School-Based SLPs,

Last week I posted an invitation for you to participate in an important research study about SLP training and implementation of research-based behavioral intervention strategies. Your participation in this survey might help me understand if there are any gaps in SLP training.

If you have already completed the survey, I thank you for your participation. If you have not yet completed the survey, please consider completing it in the next few days by using the following link:

<URL Link>

The survey will close on Friday, January 24th, 2020 at 11:59 pm CST.

Thank you,

Ruth Scherschligt
Doctoral Student
University of South Dakota
School of Education