January 2017

Speech-Language Pathologists' Perceptions And Use Of Service Delivery Methods And Models In School-Based Practice

Burgandy DeAnn Henderson
Eastern Kentucky University

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By

Burgandy DeAnn Henderson
Graduate Student

Thesis Approved:

Charlotte A Hubbard, PhD CCC-SLP
Chair, Advisory Committee

JB Crowell, PhD, CCC/SLP
Member, Advisory Committee

Shirley P. O'Brien, PhD, OTR/L, FAOTA
Member, Advisory Committee

EdD
Member, Advisory Committee

Dean, Graduate School

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Date 07/05/2017

SPEECH-LANGUAGE PATHOLOGISTS' PERCEPTIONS AND USE OF SERVICE DELIVERY METHODS AND MODELS IN SCHOOL-BASED PRACTICE

By
BURGANDY HENDERSON
Bachelor of Science
University of Illinois
Urbana-Champaign, Illinois
2014

Submitted to the Faculty of the Graduate School of
Eastern Kentucky University
in partial fulfillment of the requirements
for the degree of
MASTER OF ARTS
August 2017

DEDICATION

This thesis is dedicated to the memory
of my grandparents Gerald and Ann Henderson,
for their passion of education, and love of family.

I can do all things through Christ who strengthens me (Philippians 4:13, NKJV).

ACKNOWLEDGMENTS

I would like to thank my thesis chair, Dr. Charlotte Hubbard for her persistence and guidance during this project. I would also like to thank my committee members, Dr. Tamara Cranfill, Dr. Shirley O'Brien, and Dr. Laura Clarke. Their knowledge and passion of their respective fields goes above and beyond the acknowledgment of words. I am so appreciative of my chair and committee for their time, support, and words of encouragement. They are a true blessing to their fields of study and the academic community of Eastern Kentucky University.

A special thank-you goes to Dr. Daniel Mundfrom and Autumn Ward for their time and energy during data analysis. These two individuals spent many hours sorting through pages of data, and answering a lot of questions. I could not have done it without them!

I would like to express my love and thanks to my parents Robert and Melissa Henderson, and my brother Joshua Henderson, for their support during the ups and downs of this journey. I would also like to thank two of my biggest prayer warriors, my grandparents David and Sharon Good.

Through the support of my family, friends, and professors, I am blessed to join the distinguished profession of speech-language pathology.

"We do not need magic to change the world, we carry all the power we need inside ourselves already: we have the power to imagine better."
— J.K. Rowling, Very Good Lives: The Fringe Benefits of Failure and the Importance of Imagination (2008)

ABSTRACT

ASHA (1991c) identifies the value of consultation and collaboration across disciplines in the public school setting. Historically, speech-language pathologists (SLPs) have pulled children out of the classroom to provide therapy in individual or small group settings. However, evidence continues to show the merit of consulting and collaborating with other professionals in the school in order to fully integrate classroom curriculum and support service goals (ASHA, 1991c; ASHA, 2010f; Mecrow, Beckwith, & Klee, 2010; Ritzman, Sanger, & Coufal, 2006). The purpose of this study was to explore SLPs' perspectives and use of consultation and collaboration in the public schools. A survey was distributed across the United States through email lists and social media to public school based SLPs. Definitions were provided for four different service delivery models as examined on a spectrum moving from "pull-out" (monodisciplinary) towards complete collaboration and sharing of responsibility (transdisciplinary).

One hundred and sixteen participated in the survey, with 41 participants completing the survey in its entirety. Data analyses indicated that SLPs identify a difference between consultation and collaboration and primarily use the multidisciplinary service delivery model. However, data revealed that SLPs think the interdisciplinary service delivery model is most effective and would prefer to use either the interdisciplinary service delivery model or the transdisciplinary service delivery model. Factors that impact SLPs selection and use of their current service delivery model included scheduling, professional relationships, and clinical experience. Correlations were found between the presentation of consultation and collaboration in graduate level classes and time spent consulting and collaborating in practice.

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CHAPTER 1

INTRODUCTION

"There are approximately 40 million Americans with communication disorders ranging from mild hearing loss to complex communication disorders…." (Tanner, 2007, p.29). In order to treat those with communication disorders, speech-language pathologists (SLPs) are trained to work in a variety of settings to target communication and swallowing disorders with a wide severity range. It is not uncommon for communication disorders to be comorbid with other mental health, physical, cognitive, genetic, or neurologically based impairments and differences (Pinborough-Zimmerman, 2007). The role of SLPs in school-based practice is diverse, and they must be prepared to deliver treatment in varied environments and to children with one or more disorders. Individuals with Disabilities Education Act (IDEA) identifies that schools must educate all children with disabilities; regardless of the severity. Given these implications, SLPs must work with school teams to identify students with suspected speech and/or language disorders, be flexible and knowledgeable in their delivery of treatment, relate treatment to the general curriculum, and be comfortable in communicating with other skilled professionals outside their discipline (ASHA, 1991c; ASHA, 1999d; ASHA, 2012g).

Service delivery and the communication that takes place between disciplines can be described in several different ways. Consultation, collaboration, collaborative consultation, and team teaching models are terms often used interchangeably in the literature. In order to examine SLPs' perceptions and use of various service delivery

models in the public school, the models must be first identified and defined. At this time, there is no universal terminology or definitive definitions used to describe the type, methods, and delivery of intervention and communication used by multiple professionals working together.

Despite the fact that the American Speech-Language-Hearing Association (ASHA, 1991c) has released a report dictating the use and importance of collaborative service delivery in schools, the ASHA 2016 Schools Survey report (2016i) identified that clinical service providers spend on average 19 hours weekly in pull-out services for intervention, and 5 hours in classroom-based intervention. Even though national reports and surveys identify how SLPs spend their paid time and provide service (ASHA, 2016i), there is little information available that allows us to understand what factors SLPs identify when they select a service delivery model. More information is needed to determine trends or patterns between the use of consultation and collaboration and different variables, such as case load size, demographics/diagnosis of students, and graduate level training.

Addressing these questions will ensure that professionals and others have similar definitions and understanding of the service delivery models for consultation and collaboration. Clearer and more effective communication will occur both within the profession of speech-language pathology and across other disciplines involved in the education and intervention of students. In addition, further exploration of the factors that impact the SLP's choice of service delivery models may influence better models of service delivery. Areas which may hinder a SLP's primary choice in service delivery selection should be addressed, and areas which promote a SLP's choice should be

highlighted. Lastly, trends between the use of consultation and collaboration, and variables regarding the SLP's caseload and demographics should be examined. Trends that may be found between variables and decreased use of consultation and collaboration should be thoroughly examined so SLPs can advocate for and provide the most appropriate service delivery possible for effective intervention in school based practice.

Statement of Purpose

The purpose of this research was to identify SLPs' perspectives and use of consultation, collaboration, and service delivery models in school-based practice.

Research Questions

1) Do SLPs in public schools identify a difference between consultation and collaboration?

2) What relationships are found between the following variables and the use of consultation:

- Years of experience in the field
- Grade level of students on caseload
- Case load size
- Diagnosis of students on caseload
- Severity of students on caseload
- Graduate level exposure to evidence based research
- Graduate level presentation
- Graduate level training

3) What relationships are found between the following variables and the use of collaboration:

- Years of experience in the field
- Grade level of students on caseload
- Case load size
- Diagnosis of students on caseload
- Severity of students on caseload
- Graduate level exposure to evidence based research
- Graduate level presentation
- Graduate level training

4) Is there a difference between the model of collaboration SLPs deem most effective and the model they most use in their practice in public schools?

5) What factors do SLPs perceive contribute to selecting a service delivery model to use in their practice?

Definitions of Terms:

ASHA: The American Speech-Language-Hearing Association "is the national professional, scientific, and credentialing association for 191,500 members and affiliates who are audiologists; speech-language pathologists; speech, language, and hearing scientists; audiology and speech-language pathology support personnel; and students" (ASHA About Quick Facts, 2017, n.p.).

SLP: "Speech-language pathologists identify, assess, and treat speech and language problems" (ASHA About Quick Facts, 2017, n.p.).

Service Delivery: refers to the method(s) in which services are provided. Services can be offered in pull-out treatments rooms, the classroom, or within the individual's natural environment (ASHA Types of Service, 2017).

Consultation: "Whenever a specialist works with a teacher, parent, or other individual who will be responsible for working on communication, the services are described as *indirect* or *consultative*. Sometimes a specialist will consult with a child's teacher or other individuals who frequently interact with an individual with communication needs about strategies that will improve communication" (ASHA Types of Service, 2017, n.p.).

Collaboration: when all team members work together to plan, implement and discuss effectiveness of a student's educational program. No one discipline has greater weight or status over another (ASHA, 1991c; Coben, 1997).

Pull-out model: SLPs may remove the student from their classroom and move them to a separate more private location. This specialized time may be utilized to target certain skills or teach new behaviors (ASHA Types of Service, 2017; ASHA, 1991).

Monodisciplinary: when one discipline or one branch of study is utilized to address a problem (McGregor, 2007).

Multidisciplinary: A consultative approach when one discipline reaches out to other disciplines to help solve an issue or provide support (McGregor, 2007; Prelock 1995).

Interdisciplinary: Complex problem solving occurs. Disciplines collaborate in their sharing of ideas and investigation of similarities and differences in approaches, however each discipline takes an individual approach to address the problem (McGregor, 2007; ASHA, 1991; Toynton, 2005).

Transdisciplinary: An approach which attempts to overcome boundaries of individual disciplines. Transdisciplinary teams share all roles in assessment, planning, and intervention, often crossing discipline boundaries to create a common set of intervention goals (McGregor, 2007; ASHA, 1991).

CHAPTER 2

LITERATURE REVIEW

The review of the literature examines the role of the SLP as it relates to consultation, collaboration, and the pull out model in the school setting. The models are considered as components on a service delivery spectrum. A review is then conducted of the core competencies of interprofessionality and collaboration. Next, collaboration in action is discussed with reference to importance and effectiveness of consultation and collaboration, prevalence and comorbidity of diagnosis, and ASHA best practice. Lastly, support for the purpose of this project is presented.

What is Consultation?

Consultation may be described as a triadic model with three involved individuals: the consultant, the mediator/consultee, and the target/client (Chan & Dally 2001; Coben, Thomas, Sattler, & Morsink, 1997; Tharp, 1975). A consultant is the individual who has expertise regarding ways to best serve the student/client's needs. A consultee is an individual who implements the strategies shared by the consultant when working with a student/client. In other words, consultation can be described as an educator or professional who indirectly brings change for a student or client through a teacher or other professional (Chan & Dally, 2001; Coben et al., 1997). Chan and Dally (2001) provided an example of how consultation could be used in a school classroom. The consultant in this instance would be the special education teacher. The special education

teacher would share knowledge and expertise with the general education classroom teacher on how to best meet the needs of the student. The general education teacher (the consultee) attempts to implement these strategies in her classroom and works directly with the student. ASHA also references the National Joint Committee (NJC) for the Communication Needs of Persons with Severe Disabilities (ASHA NJC; 2017). The NJC identified that if the goal is to increase the generalization of a skill across settings, a service provider may find that an indirect or consultative approach may be more appropriate (ASHA NJC, 2017).

What is Collaboration?

ASHA (1991) defines the collaborative team as the "nucleus" in the service delivery model. All team members work together to plan, implement and then discuss effectiveness of a student's educational program. Other definitions include recognizing mutual and equal efforts to serve the client with no one discipline having greater status over the other (Coben, 1997; Pena & Quinn, 2003; Ritzman, Sanger & Coufal, 2006). For example, a collaborative team may consist of speech, occupational, and behavioral therapies, in addition to general education and special education. A speech-language pathologist, occupational therapist, and board certified behavioral analyst would all work together to develop complementary goals within each profession's area of expertise. The speech-language pathologist would be able to target areas related to speech, language, and/or swallowing while the occupational therapist might target fine motor activities of daily living, and the board certified behavioral analyst might address strategies to reinforce wanted behaviors and terminate unwanted behaviors. These targets would all be

related to the student's academic needs within the general education and special education classrooms. Additionally, the student and their caregivers would have integral roles in this collaborative team. Decisions should be made with their input and expertise for effective learning to occur in school-based practice (ASHA, 1991; Pena & Quinn, 2003).

The Pull-out Model

ASHA in conjunction with the NJC (1992) describes the pull-out service model as a specialized, separate time that can be used for teaching new behaviors or targeting repetitive drills in school based practice. It may also be an appropriate time to use role-playing for conversations or create more structured learning opportunities. ASHA and NJC (1992) also identify this time as providing fewer distractions.

According to the ASHA 2016 Schools Survey, the pull-out model is described as SLPs functioning independently as they remove students from their classrooms and work with them individually or in small groups (ASHA, 1991). According to the survey, clinical service providers (speech-language pathologists and educational audiologists) spent more time in pull-out services for direct intervention than in any other activity (ASHA School Survey, 2016i).

Service Delivery Models: A spectrum of consultation and collaboration

There are several service delivery models in which professionals may work together. Prelock (1995) notes that consultative and collaborative models have been proposed to supplement the more traditional pull-out model. For the purpose of this

research, these models will be examined as a spectrum moving from consultation to collaboration. Consultation continues to evolve into a more "cooperative problem solving relationship" (p.85), while collaboration is viewed as an endpoint on a continuum (Coben et al., 1997). The difference seen between consultative and collaborative models is the level of the participant's shared knowledge and professional experience (Prelock, 1995).

Historically, there have been four different types of services delivery models. The first is monodisciplinary where only one discipline or one branch of study is brought forward to address a problem (McGregor, 2007). This type of service delivery would not be considered a consultative or collaborative model. Toynton (2005) recognizes the importance of monodisciplinarity in higher education. When adults return to education, they typically return to focus learning in one discipline or even a singular element of that discipline. This means, as adults continue with their education, they become more specialized in one focused area. This then creates boundaries or alienation in the professional community that can be described as "us" and "them" (Toynton, 2005). These should not be presumed as negative ideas, but instead may be viewed as a normal division of social, cultural and institutional requirements that give way to appropriate practices and pedagogy of professions (Toynton, 2005).

Multidisciplinary occurs when one discipline reaches out to other disciplines to help solve an issue. It should be noted that the goal is not collaboration across disciplines (McGregor, 2007). Rather, the goal is to help the initial discipline solve the problem. The disciplines "mingle" to problem solve and then go back to their respective areas of specialization (McGregor, 2007). ASHA (1991c) describes multidisciplinary as a group of team members that typically work independently with little or no collaboration among

team members. Toynton (2005) recognizes multidisciplinarity as a life-long skill that contributes to comparative critical awareness. This critical awareness allows one to be aware of other disciplines and their area of expertise (Toynton, 2005). This service delivery model can best be described as consultative as it meets the criteria described by Prelock (1995). For example, in a classroom setting a teacher may reach out to a SLP to receive information about programming or goals for a specific child in her class.

The third service model is interdisciplinary. This model values interaction between multiple disciplines and coordinated expertise (McGregor, 2007) with emphasis on complex problem solving. Team members may meet to share and discuss information regarding each student (ASHA, 1991c). Professionals may investigate the similarities and differences of one another's approaches to justify and validate the knowledge base within each discipline (Toynton, 2005). ASHA (1991c) noted that in this model, the only form of collaboration is discussion. Team members will continue to assess and treat students within the confines of their own disciplines (ASHA, 1991c). The interdisciplinary model only meets the criteria of collaboration when there is an exchange of information between two or more parties. This means that the SLP should not just be providing programming information, but both parties should be working together and sharing information to determine what is best for the client (Prelock, 1995). For example, a SLP and general educator may collaborate to determine what goals and programming implementation would best allow the student to have academic and social success. After this, both professionals would return to their designated roles within the school and implement these goals based on their own professional expertise (McGregor, 2007; Prelock, 1995).

The fourth model is transdisciplinary. This model emphasizes not just problem solving, but the creation of innovative approaches to understand the broad therapeutic environment. ASHA (1991) defines this approach as one that attempts to overcome the boundaries of individual disciplines. Those in a transdisciplinary team share roles in all aspects of assessment, planning, and intervention, oftentimes crossing discipline boundaries to create a common set of intervention goals (ASHA, 1991c; McGregor, 2007). Noteworthy in the transdisciplinary model is that role assignments are not defined by discipline titles, but instead by client needs (ASHA, 1991; Crowe, Brandes, Aviles, Erickson, & Hall, 2013; McGregor, 2014; McGregor, 2007). As defined by Prelock (1995), the transdisciplinary model meets the criteria for collaboration. Prelock (1995) states collaboration is noted by professionals who share responsibility for decision making at the level of assessment, planning, intervention and evaluation. ASHA (1991) identifies that collaborative service delivery cannot be inclusive of the multidisciplinary and interdisciplinary models due to the purpose, the amount, and the effect of collaboration among team members. Instead, a true collaborative service delivery model is considered transdisciplinary because professionals make an attempt to overcome boundaries between individual disciplines in a school setting.

Core Competencies of Interprofessional and Collaboration

In order to have collaboration or consultation in any environment, there must be a group of two or more professions that takes the opportunity to deliberately work together (WHO, 2010). The Interprofessional Education Collaborative (IPEC) is a group of 15 different professions founded to identify and develop interprofessional competencies for

clinicians in health related fields and to promote interprofessional learning experiences at the pre-service level for future practicing clinicians. In 2011, a panel from this group published recommendations regarding core competencies across disciplines to guide curriculum development across health professions in higher learning. The Interprofessional Education Collaborative Expert Panel (IECEP) identified that in order to better develop collaboration between disciplines, interprofessional learning should be used to prepare all health professions' students prior to entering the field. This should be done through regular engagement of active learning with those outside of their profession as part of their educational requirements (IECEP, 2011). The goal with this preparation prior to entering the workforce is to contribute to a more client-centered and community-oriented healthcare system (IECEP, 2011).

The IECEP noted that the training needed to develop interprofessional collaborative practice has not kept up with current needs of collaboration in the healthcare system. After reviewing reports on health and safety, a summit of health care professionals was sponsored by the Institute of Medicine (IOM) to identify four domains for providing collaborative healthcare. The domains included: values/ethics, roles/responsibilities, interprofessional communication, and teams/teamwork. Within each of these domains, specific competencies are discussed in detail (IECEP, 2011). The IECEP determined that because the training of these competencies is the primary responsibility of higher educational institutions, more oversight is needed on accreditation, licensure, and certification. Additionally, more continuing education is needed in order to ensure development, demonstration, and maintenance of core competencies (IECEP, 2011).

A 2016 update was issued from the IPEC stating that considerable headway has been made in interprofessional education. With the addition of other professional representation and partnerships to the IPEC, more progress is expected (IPEC, 2016). Since the panel report was issued in 2011, it has been cited over 550 times in peer reviewed literature and other publications. Additionally, increases in interprofessional education opportunities have grown in professions like dentistry and medicine (IPEC, 2016). These core competencies of pre-professional preparation may be applied to those in school-based practice as well. Given the standards set forth by ASHA and IDEA, one must be given access to consultation and collaboration learning opportunities in graduate level training (ASHA, 1991; ASHA, 1999d; ASHA, 2012g).

Consultation and Collaboration in Action

In Great Britain, Mecrow, Beckwith, and Klee (2010) explored treatment outcomes for preschool students when a SLP was consulted for treatment. Consultative treatment was provided for 3 children with identified speech and/or language needs in a school setting. During the treatment process, the SLP consulted with specialized teaching assistants (who provided intervention) and parents/caregivers. At the conclusion of the study, the children made significant gains on standard scores, as measured by the Clinical Evaluation of Language Fundamentals-Preschool UK. Results from this intensive, consultative treatment program suggested that students can still make progress when working with an assistant under the guidance/supervision of a SLP (Mecrow, Beckwith, & Klee, 2010).

Collaboration is often appropriate when serving individuals on the autism spectrum. Speech-language pathologists and behavioral analysts often serve the needs of those on the autism spectrum. However, collaboration between these two disciplines has presented with challenges given the differences in approaches when providing language intervention. LaRue, Weiss, and Cable (2009) identify that collaboration between these two disciplines may result in more effective programming and development of better communication skills for children with autism. Improved communication skills may result in a reduction of behavioral challenges which impact learning.

One effective approach used to address both behavior challenges and communication deficits is functional communication training (FCT) (LaRue, Weiss, & Cable, 2009). In this approach, the function (cause) of the challenging behavior is first identified. Then a more appropriate functional communication response is taught and trained to replace the challenging behavior. In using FCT, clinicians must use extinction and motivation operations to decrease the unwanted behavior and to increase the wanted behavior. In addition, communication responses must be reinforced immediately through the use of most to least prompting and errorless learning. Over time, communication attempts can be shaped to be understood by unfamiliar listeners and to generalize across settings. The role of the SLP using FCT may be to determine the communication modality, to shape communication to be understood by others, and to encourage the use of skills in the natural environment (LaRue, Weiss, & Cable, 2009). The behavior analyst may have a role in objectively evaluating the learning process and analyzing the function of the challenging behaviors. They may also take the lead with regard to the treatment of the challenging behaviors, addressing issues related to skill acquisition, and identifying

appropriate prompts and procedures. The two disciplines may then assist each other to create an environment that provides enhanced opportunities to learn and practice the targeted skills. The implications of this study for school based practice are in seeing how collaboration of two different disciplines (SLP and behavior analyst) may positively impact the student's success in goals set by the stated two disciplines.

Understanding and use of basic concepts are important aspects of language which may impact a child's ability to access the general curriculum. Ellis, Schlaudecker, and Regimbal (1995) examined how a collaborative consultative approach planned and implemented by classroom teachers, physical education instructors, and a SLP, could increase students' understanding of basic concepts. A school based SLP had observed over several years that many students entered kindergarten without a foundational understanding of basic concepts. Following informal conversations regarding the observations of the SLP and discussions on relationships between basic concepts and academic success, the kindergarten teachers and physical education teacher expressed an interest in targeting basic concepts as part of their curriculum. Ellis, Schlaudecker, and Regimbal (1995) selected two groups of 20 children (N=40) to make up an experimental group and control group. The experimental group of 20 kindergarten children were provided basic concept instruction in their classroom and in their physical education class. A total of 9 target words were selected by the classroom teachers and physical education teachers in a collaborative meeting prior to the start of the study. For the duration of the study, students were given instruction on the basic concepts for approximately 30 minutes per week in the classroom. The classroom teacher gave a lesson on basic concepts for 10 minutes prior to the students' physical education class.

The teacher then spent an additional 20 minutes on a concept lesson or story targeting the basic concept as recommended through consultation with the school SLP. At the conclusion of the study, a significant difference was reported in the understanding of basic concepts between the two groups, with the experimental group having more success. These results provide support for using a collaborative approach in the school setting (Ellis, Schlaudecker, & Regimbal, 1995).

Another example of effective implementation of collaboration in a school setting was found in a study conducted by Ritzman, Sanger, and Coufal (2006). The authors examined how a school-based SLP implemented collaborative practices in a classroom setting through the use of collaborative consultation. Ritzman, Sanger, and Coufal (2006) defined collaborative consultation as an "interactive process that enables people with diverse expertise to generate creative solutions to mutually defined problems" (p. 222). Current legislation states that students with Individualized Education Plans (IEPs) should receive services in the least restrictive environment (classroom) and with the No Child Left Behind legislation there continues to be an increase in accountability for both SLPs and classroom teachers (Ritzman, Sanger, & Coufal, 2006). Three interviews and seven observations were conducted with a middle school based SLP to provide insight into school-based collaboration. The SLP provided services to approximately 35 students using a variety of service delivery models such as pull-out service delivery and classroom service delivery utilizing collaboration and consultation. From the observations and interviews, five themes emerged including service delivery, curriculum-based instruction, scheduling, collaboration, and advocacy.

Regarding service delivery, the SLP was flexible in providing a range of services based on students' needs; however, she tended to focus intervention on providing service in the classroom setting. In curriculum-based instruction, the SLP utilized opportunities to use curriculum material when designing intervention for students. Additionally, the SLP modified instructions for students, reviewed note taking, developed flow charts, and sketched pictures to help students better understand difficult concepts. With regard to scheduling, the SLP identified the importance of establishing a strong relationship with the classroom teacher. The SLP noted that it was crucial to gain the teachers approval of when/how services were provided during time spent in the classroom. With regard to collaboration, Ritzman, Sanger, and Coufal (2006) discussed how "territory" can often be a challenge when trying to collaborate. When professionals have a "mine versus yours" mentality this can hinder moving forward to collaborate and best serve student's needs. It is likely that several variables (e.g., flexibility, planning, active listening) utilized by the SLP contributed to successful collaboration (Ritzman, Sanger, & Coufal, 2006). The last theme, advocacy, was integrated throughout all aspects of the SLP's programming to parents, teachers, and administrators. The SLP advocated for her role/scope of practice and for her students. Overall, this research study does not conclusively state that the intervention provided by the SLP was more successful than other interventions available. However, it did highlight the benefits, challenges, and unique opportunities that collaborative service delivery offers in the school setting (Ritzman, Snger, & Coufal, 2006).

Another study examined the effectiveness of collaboration between Head Start classroom teachers, teaching assistants, and speech-language pathology graduate students

(Pena & Quinn, 2003). In this study, student clinicians provided services as part of a team in Head Start classes (two full days per week). The teams consisted of 1 student clinician, 1 classroom teacher, and 1 teaching assistant. The researchers found it important to note that the team members were not equal in terms of status and education. The student clinicians may not have been perceived as peers by the Head Start teachers, even though the student clinicians were obtaining master's degrees and the Head Start teachers had associate degrees. These actual and perceived differences created additional challenges to team development. Data collection was in the form of daily logs, with a total of 68 journals documenting the academic year. Additionally, the Head Start teachers provided oral feedback to the researchers, who wrote 27 journal entries documenting the experience.

Pena and Quin (2003) referenced the stages of team work based on information from Lowe and Herranen (1978; 1982). In the first week, the students focused on becoming acquainted with the teachers, assistants, and students. In weeks two through four, the teams entered the "trial and error" stage. The student clinicians reported that they still felt welcome in the classroom, but continued to take a cautious approach if the teachers/assistants did not agree with their ideas or suggestions. In weeks four through seven, the teams began to experiment with some language based activities in the classroom. There was reportedly tension and frustration when some attempts at planning and/or implementing activities were unsuccessful. Weeks seven and eight were described as the "crisis" stage in the group work. In this stage, an event unfolded that demonstrated that the team members were not working together in the way that was intended. Student clinicians documented in their journals that teachers made comments stating that their

presence was disruptive, or that they were being limited to certain times and spaces to work with the children. Additionally, teachers shared that they felt they were ill-informed regarding the purpose/role of the student clinicians, and that they would have preferred the clinicians take the students out of the classroom to work. In weeks eight through ten, the teams worked to better establish a tentative purpose and to make goals of the classroom-based intervention more clear. In the final weeks of the study, the in-classroom intervention continued to be more successful with increased communication among team members and more flexibility (by all team members) in targeting classroom and speech-language goals.

At the conclusion of the study, Pena and Quin (2003) recognized several "lessons learned." The first was that there must be time spent in the entry, orientation, problem identification, and overall planning with all team members. Secondly, the authors noted that it was important to train new skills that may be unfamiliar to team members. Such training may include learning how to give constructive feedback to other team members. Third, collaboration must be taken on voluntarily with team members functioning as peers. In this situation, the administrators of the Head Start program volunteered the teachers who participated, which may have impacted their personal willingness to have student clinicians working in their rooms. The fourth lesson was that teachers should be provided appropriate incentives and time to participate in such collaborative opportunities. Fifth, one should be familiar with the culture of the classroom prior to collaboration initiation. The classroom teachers were accustomed to a culture where students were pulled out for speech services, not one where services were provided as a push in resource. The last lesson was that those involved should emphasize the process

and understand that this process is evolutionary in nature. The collaborative process may look slightly different for different groups. Going through the different stages of creating a collaborative team takes time and effort. It is noteworthy that both parties were only successful after being given the opportunity to spend time communicating with one another and establishing effective conflict resolution techniques (Pena & Quinn, 2003).

The case study provided support for the concept of collaboration in schools. However, it also shed light on the challenges faced when trying to collaborate with others. Prior to developing conflict resolution techniques and a comfortable communicative atmosphere, the student clinicians and paraprofessionals reported that they experienced challenges effectively communicating with their classroom teacher (Pena & Quinn, 2003).

Best Practice

ASHA

According to the American Speech-Language-Hearing Association (ASHA, 2010f), speech-language pathologists have a variety of roles and responsibilities. These include, but are not limited to, serving a range of disorders, working across all levels, contributing to curriculum, providing culturally competent services, and collaborating with other professionals. SLPs are also involved in all stages of prevention, assessment, intervention, school design, data collection and analysis and compliance. While SLPs are trained to be highly competent in fulfilling their varied roles, they also acknowledge when certain areas are out of their professional scope of practice. ASHA states that SLPs may work in collaborative service delivery in schools, interdisciplinary work in health

settings, or transdisciplinary practice in early intervention. However, it is both ethically and legally binding for professionals to determine whether they have the knowledge and skills necessary to do so.

Kentucky

In the state of Kentucky the department of education came out with a manual in 2012 for related services in the school setting. The manual is applicable for occupational therapists, physical therapists, and speech-language pathologists in school based practice (Resource Manual, 2012). The manual highlighted IDEA law (2004) and the Kentucky Eligibility Guidelines Revised (2009) as they relate to school based service providers. The manual also recognized that in a public school setting students may be diagnosed with a speech and language impairment without having any other special education needs. This is unlike occupational therapy and physical therapy, which can only be provided if the student has an underlying diagnosis as identified on their individual education plans. The resource manual (2012) recognizes that in school based practice, service providers collaborate with teachers and educators to identify the needs of the students, and provide therapy as it relates back to the general curriculum. Additionally, the resource manual recognizes the importance of feedback from all team members (e.g., teachers, educational staff, and parents) to determine how the students disability impacts performance in the classroom. Through the process of collaboration, the primary role of school based therapists is to assist students in meeting their educational goals (Resource Manual, 2012)

Prevalence and Co-morbidity of Communication Disorders and Other Diagnoses

When examining the prevalence and incidence of communication disorders across the literature, one must recognize that other disorders are often co-occurring. According to the ASHA 2016 School Survey (2016i), school based SLPs treat no less than 15 different disorders. The median number of students per disorder can range from 1 student to 22 or more. From 1995 to 2016, approximately half of the students on a SLP's caseload were identified as having a moderate impairment. From 2000 to 2014, 80%-90% of SLPs treated students with autism spectrum disorder, which can manifest with a wide variety of symptoms, behaviors, and personal and academic needs requiring therapies from multiple disciplines (ASHA School Survey, 2016i; ASHA Practice Portal, n.d.a).

Other literature also examines the prevalence and comorbidity of communication disorders across the world. Mahesh and Geetha (2010) found 6,101 children visited the All India Institute of Speech and Hearing (AIISH) for a communication disorder from January 2007 to December 2008. Out of those, 730 had a history for seizures. The percentage for those children who had both a communication disorder and a history of seizures was 11.96% compared to the general population of 3-5% who have seizures. It was also noted that epileptic seizures are one of the most common neurological disorders to co-occur in children with a communication disorder.

A study was conducted to view the correlation between child and adolescent psychiatric referrals and children who were bilingual (Spanish and English) and language disordered. It was found that out of those given psychiatric referrals, no less than 40% of the children had a language delay or disorder in both of their spoken languages (Toppelberg, Medrano, Morgens, & Nieto-Castañon, 2002). Toppelberg and colleagues

(2002) suggested that this high prevalence of language disorders (40%-50%) is analogous to studies conducted with monolingual children also referred for psychiatric services. Toppelberg et al. (2002) also indicated that a study completed by Cohen et al. (1993) not only found comparable results, but also had participants with comparable sociodemographics.

Gibbs and Cooper (1989) examined the comorbidity of communication disorders and learning disorders. This study took place in a school system in Alabama with a population of 242 children diagnosed with a learning disorder and having a current Individualized Education Plans (IEPs) prior to the start of this study. After assessing the children, it was found that 96.2% (233) of the 242 children, ages 8-12 years, exhibited at least one or more communication disorder. The prevalence of the disorders ranged from 1.2% with fluency disorders to 90.5% with language disorders. Out of the 233 students identified, it was noted that only 6% of those students were receiving speech-language services, and the only disorder that was being targeted by SLPs was articulation. The researchers attributed this number to the fact there was a limited number of SLPs to serve the school. Students with a mild-moderate disorder would not qualify for services under the district's policy (Gibbs & Cooper, 1989).

Hollo, Wehby, and Oliver (2014) conducted a meta-analysis examining the comorbidity of unidentified language impairments (LI) and emotional behavioral disorders (EBD) in children. They cited several factors that may impact performance outcome for children with EBD. One variable that was noteworthy was the presence of concomitant LI. Hollo, Wehby, and Oliver (2014) identified that while causational relationships have yet to be established between emotional behavioral problems and

language disorders, there are strong interrelations found in the literature. The results of the meta-analysis were inclusive of 14 studies (Hollo, Wehby, & Oliver, 2014). The overall sample size, from the 14 studies that met the analysis requirements, identified 838 children diagnosed with an emotional behavioral disorder. Approximately four out of five (81%) children with EBD were identified with at least one mild language impairment, and almost 47% of those students had impairments categorized as moderate to severe (Hollo, Wehby, & Oliver, 2014).

The study confirmed the importance of screening all children with EBD as soon as possible in order to begin providing intervention. Hollo, Wehby, and Oliver (2014) noted that language impairments can limit a child's access to other types of intervention needed for behavioral management. Additionally, language deficits can limit a child's ability to understand instruction in talk-based therapy. Overall, this study revealed the importance of supporting language development, as this may be a crucial step in determining success for children with EBD.

A study was done to examine the prevalence of comorbid intellectual disabilities, autism spectrum disorders, and/or emotional behavioral disorders with regard to communication disorders in the state of Utah (Pinborough-Zimmerman, Satterfield, Miller, Bilder, Hossain, & McMahon, 2007). Participants were eight years old identified from a multiple source review including administrative diagnostic coding by health sources and special education classrooms based in the three largest counties of Utah (Pinborough-Zimmerman et al, 2007).

The overall communication disorder prevalence from combined sources was 63.4 per every 1,000 students. For this study 1,667 participants were found to have a documented

communication disorder from a pool of 26,315. Out of those 1,667 children with a communication disorder, a comorbidity rate of 3.7% had autism, and 4% had an intellectual disability. Additionally, other co-occurring emotional behavior disorders were found: bipolar disorder (0.6%), separation anxiety (0.5%), tic disorder (0.4%), emotional disorder (0.3%), obsessive compulsive disorder (0.2%), and psychosis (0.2%). Overall, conclusions suggested that co-occurring communication disorders and other metal health conditions should be an educational and public health concern. It is important to understand these co-morbidities in order to determine the impact they have on public health and to appropriately plan the best means to serve the needs of these students. The authors also recognized the significance for developing collaborative relationships for those involved in the care and treatment of these children (Pinborough-Zimmerman et al., 2007).

The current study examined the concepts of consultation and collaboration, and the four models of service delivery (Pinborough-Zimmerman et al., 2007). As previously stated, these are not the only definitions available to describe service delivery

Deficiencies in the Literature

Current literature and competencies recognize the value and importance of collaboration (ASHA, 2004e; Cittin et al., 2010; IECEP, 2011; IECP, 2016). However, critical information is missing that allows for clear and concise communication about consultation and collaboration in school based practice. Currently, there is no universal agreement to delineate and/or define terms such as consultation, collaboration, consultative-collaboration, and team-teaching (Marvin, 1987; Elksnin, 1997; Damico,

1987; Mecrow, Beckwith, Klee, 2010). Elksnin (1997) suggested that there is a continuum of consultation and collaboration, while others may use the terms interchangeably (Pena & Quinn, 2003). While it is agreed that SLPs should participate in these approaches, there is little consistency in identifying the distinguishing characteristics of the approaches.

Perhaps secondary to the incongruous use of these terms, there is limited insight to SLPs' perspectives and use of consultative and collaborative models in public schools. There is little to no information regarding if and how SLPs define service delivery terms such as monodisciplinary, multidisciplinary, interdisciplinary, and transdisciplinary, and if or how they use these service delivery models in their setting. Additionally, more knowledge is needed to understand how often SLPS are consulting and/or collaborating in the public school, and if there are any relationships between caseload variables and time spent consulting and collaborating.

There also continues to be mixed results regarding the use of classrooms as the first intervention environment when developing IEPs (Ritzman, Sanger, & Coufal, 2006). The Individuals with Disabilities Education Act (IDEA, 2004) identifies that children who have an IEP have the right to receive services in the least restrictive environment. That environment may be the classroom, hospital, home, or in other institutions and settings. At this time, there is minimal information in the literature regarding how SLPs are providing collaborative and classroom-based services for students on their caseloads.

The ASHA School Survey (2014h; 2016i) provides caseload trends and caseload characteristics. However, information about comorbid disorders/diagnoses in the public school, time spent on consultation, time spent on collaboration, and use of service

delivery models is deficient or non-existent. Most of the evidence available is in the form of case studies or ethnographic data collected. There is limited literature that examines the outcomes of experimental studies (Ellis, Schlaudecker, & Regimbal, 1995). While case studies are an important aspect in research, they do not provide information regarding outcomes of specific approaches or interventions. More evidence based research is needed to begin eliminating deficiencies found in the literature.

The following research questions were examined:

1) Do SLPs in public schools identify a difference between consultation and collaboration?

2) What relationships are found between the following variables and the use of consultation:

- Years of experience in the field
- Grade level of students on caseload
- Case load size
- Diagnosis of students on caseload
- Severity of students on caseload
- Graduate level exposure to evidence based research
- Graduate level presentation
- Graduate level training

3) What relationships are found between the following variables and the use of collaboration:

- Years of experience in the field
- Grade level of students on caseload
- Case load size
- Diagnosis of students on caseload
- Severity of students on caseload
- Graduate level exposure to evidence based research
- Graduate level presentation
- Graduate level training

4) Is there a difference between the model of collaboration SLPs deem most effective and the model they most use in their practice in public schools?

5) What factors do SLPs perceive contribute to selecting a service delivery model to use in their practice?

CHAPTER 3

METHODS

Research Design

A non-experimental correlational research design was implemented to gain information regarding SLPs' perspective and use of consultation and collaboration in public schools. Data collection included gathering information about: SLPs' caseload in the public schools, their perception of definitions for consultation and collaboration, their understanding and use of the models of service delivery, how SLPs spend their paid time on a monthly basis, information regarding their graduate level education, and their perspective of what factors impact their service delivery.

Instrumentation

The instrument used to collect data was an online survey (Appendix A) created through Qualtrics. A recruitment letter (Appendix B) explaining the survey and the anonymous survey link was posted on social media forums for SLPs and sent through school district email lists. The participants provided their consent through the submission of the completed survey. The link to the survey and cover letter were posted on five social media forums and distributed through 3 different school based email lists. The question types consisted of multiple choice and short answer/fill in the blank. Participants' could choose to answer or not answer any questions. Participants could not go back and change questions once answered, however, they could exit the survey at any

time. The survey was divided into five sections. The first section consisted of demographic information about the participant (SLP) and information about their current caseload. The second portion asked the participant to identify consultation and collaboration when given a definition. In the third section, a chart depicting four service delivery models (i.e., monodisciplinary, multidisciplinary, interdisciplinary, and transdisciplinary) and where they may fall on the spectrum of consultation and collaboration was provided. Participants were then directed to answer questions concerning how their paid time was spent on a monthly basis (e.g., time spent providing intervention versus time spent in collaboration), and what type or how much graduate level training they received for consultation, collaboration, and service delivery models. In the fourth section, participants were again provided the chart depicting the four models and responded to questions regarding their use and perspective of the models as they relate to school based practice. At the conclusion of the survey, participants were asked to identify factors from a given list that they perceived impacted their selection of service delivery in their practices.

Inclusion Criteria

Participants for this survey were school based SLPs with at least one year of experience. They were identified through Facebook social media forums (e.g., speech-language pathologists at large, speech-language pathologists of Kentucky) and school district email lists obtained from Eastern Kentucky University clinical supervisors, Fayette County SLPs, and KEDC region of speech therapists. The survey link was made

available to several thousand SLPs across the country. Participation was determined via self-selection methods.

Data Collection

Procedure

Data were collected through the use of an online internet survey link. The survey was created using Qualtrics and contained both multiple choice and short answer/fill in the blank questions. A total of 115 participants responded to the survey with 41 of those participants answering every question. The survey was available online for approximately eight weeks A second email and posting of the link to the survey was submitted nine days before the survey closed.

Analyses

The analyses of data were completed using multiple tools. Raw data were first analyzed via Qualtrics online "Data and Analysis" and "Reports" tools. These tools identified means, medians, and minimum and maximum data points. The second method of data analysis included organizing the data in Excel by participant responses and identifying questions left un-answered by participants. The third step of analysis included statistical analyses. Analyses conducted were: Chi-squared test, cross tabulation, and Pearson correlational coefficient, mean, median, and mode. These tests were conducted using the Statistical Analysis System (SAS), Microsoft Excel, and Qualtrics. The chosen Alpha level was 10% (0.10) for use in examining significance of *p*-values.

CHAPTER 4

RESULTS

This chapter presents results pertaining to SLPs perception and use of consultation, collaboration, and service delivery models in school based practice. SLPs provided information regarding their caseload, time spent, and knowledge, perspective, and use of consultation, collaboration, and collaboration. While not all data collected from questionnaire are presented, the information contributing to this study's primary purpose is reported.

1) Do SLPs in public schools identify a difference between consultation and collaboration?

2) What relationships are found between the following variables and the use of consultation:

- Years of experience in the field
- Grade level of students on caseload
- Case load size
- Diagnosis of students on caseload
- Severity of students on caseload
- Graduate level exposure to evidence based research
- Graduate level presentation
- Graduate level training

3) What relationships are found between the following variables and the use of collaboration:

- Years of experience in the field
- Grade level of students on caseload
- Case load size
- Diagnosis of students on caseload
- Severity of students on caseload
- Graduate level exposure to evidence based research
- Graduate level presentation
- Graduate level training

4) Is there a difference between the model of collaboration SLPs deem most effective and the model they most use in their practice in public schools?

5) What factors do SLPs perceive contribute to selecting a service delivery model to use in their practice?

Participants and Demographics

A total of 115 SLPs responded to the survey, with 41 participants completing the survey in its entirety. Respondents were given the choice to answer all or some questions of the survey. Given this, data collected from the survey has a different total number of respondents per survey question. Analysis of data was completed with the total number of respondents per question, with no questions or responses being discarded based on completeness of survey. Due to the different number of responses per question, data analysis and generalization is individualized for each research question.

Participants were self-identified as speech-language pathologists (SLPs) currently working in a school-based setting. The number of years worked by participants ranged from 1-30 years, with the mean number of years being 10.83 years. There were 26 states represented by respondents with the highest frequency identifying from KY.

Perceived Differences Between Consultation and Collaboration

Survey respondents were asked to select a choice of "consultation", "collaboration", "both collaboration and consultation" or "none of the above" when presented with a scenario (Table 4.1). Two scenarios were described, one scenario described collaboration and one scenario described consultation.

A total of 109 respondents answered both questions. When identifying the scenario depicting consultation 90 respondents (82.57%) correctly identified the scenario.

The selections included 7 respondents (6.42%) who were incorrect and thought the scenario depicted collaboration, and 12 respondents (11.01%) who were also incorrect and thought the scenario depicted both consultation and collaboration. When identifying the scenario depicting collaboration 76 respondents (69.72%) correctly identified the scenario. The other selections made included 2 respondents (1.83%) who incorrectly selected consultation, and 31 respondents (28.44%) who were also incorrect and thought the scenario depicted both consultations and collaboration. A total of 68 out of the 109 respondents (62.39%) identified both scenarios correctly.

Table 4.1 Research Question One
Perceived Differences Between Consultation and Collaboration When Presented With a Definition

Questions Presented on Survey	Total Number of Responses	Number of Respondents Who Selected Consultation	Number of Respondents Who Selected Collaboration	Number of Respondents Who Selected Both Consultation and Collaboration
When team members work together to share information, assess, plan intervention, and measure progress while sharing a common set of intervention goals, this is known as: **CONSULTATION**	109	90 (82.57%)	7 (6.42%)	12 (11.01%)
When one team member functions as an expert and shares their professional knowledge with others to help with problem solving, this is known as: **COLLABORATION**	109	76 (69.72%)	2 (1.83%)	31 (28.44%)
Total Number Who Identified Both Scenarios Correctly: 68 (62.39%)				

Relationships Between Variables and Percent of Time Spent Consulting and Collaborating

In order to determine if relationships existed between selected variables and the paid time per month SLPs spent consulting and collaborating, a Pearson Correlational Coefficients Test was run. The alpha level was set at 0.1 (10%). Only two variables, years spent working in the field and caseload size, were examined to determine if relationships existed. This was secondary to the manner in which data was collected from participants (fill in the blank vs. multiple choice, numeric vs. descriptive).

Relationship Between Years in Field and Percent of Time Spent Consulting and Collaborating

The Pearson Correlation Coefficients Test was conducted to determine if any relationship existed between the time spent working in the field and amount of paid time per month spent consulting. From the 85 responses a correlational coefficient of 0.04104 was found with a p-value of 0.7092. This indicates that no significant relationship was found.

Next, the Pearson Correlation Coefficient Test was conducted to determine if any relationship existed between the time spent working in the field and the amount of paid time per month spent collaborating. From the 80 responses, a correlation coefficient of -0.20173 was determined with a p-value of 0.0727. This indicates that a significant relationship was found (table 4.2).

Table 4.2 Research Question Two and Three
Examining the Amount of Years in the Field and the Percentage of Paid Time Per Month Spent Consulting and Collaborating to Determining if Relationships Exist

CONSULTATION				COLLABORATION			
Number of respondents	Correlational coefficient	p-value	Significant	Number of respondents	Correlational coefficient	p-value	significant
N=85	.04104	0.7092	NO	N=80	-.20173	0.0727	YES

Relationships Between Graduate Level Training and Percent of Time Spent Consulting and Collaborating

The Pearson Correlation Coefficients Test was conducted to determine if any relationship existed between how many classes presented/discussed/taught material on consultation and the amount of paid time per month spent consulting. From total of 68 respondents responded to the question a Pearson correlation coefficient of 0.44485 was found, with a p-value of 0.0002. This indicates a positive correlation and statistical significant between these two data sets. The mean number of classes that presented/discussed/taught material on consultation was 2.78, the minimum number of classes was 0, and the maximum number of classes was identified as 20.

Next the Pearson Correlation Coefficient Test was conducted to determine if any relationship existed between how many classes presented/discussed/taught material on collaboration and the amount of paid time per month spent collaborating. From the 68 respondents a Pearson Correlational Coefficient of 0.26823 was found, with a p-value of 0.0307. This indicates a positive correlation and possibly some statistical significance between these two data sets. The mean amount of classes selected by the respondents was 3.66. The minimum amount of classes was 0 with the maximum number of classes being 20.

It was then examined to see if relationships existed between respondent's exposure to evidence based research acknowledging the merits of consultation and the amount of paid time spent per month consulting. From the 52 respondents a Pearson Correlation Coefficient of 0.02670 was identified with a p-value of 0.8540. This indicated that there is not a statistically significant relationship between exposure to evidence based research during graduate level classes acknowledging consultation and time spent per month consulting. The mean number of classes identified was 2.96, the minimum number classes presenting material was 0 and the maximum number of classes was 20.

A Pearson Correlation Coefficient Test was then run to see if a relationship existed between the respondent's exposure to evidence based research on collaboration in graduate level classes and the time spent collaborating on a monthly basis. From the 59 respondents a Pearson Correlational Coefficient of 0.21652 was found with a p-value of 0.1057. This information indicates that there is no statistical significance. The mean amount of classes presenting evidence based research acknowledging collaboration was 3.02. The minimum number of classes was 0 and the maximum number of classes was 18.

Next, it was examined to see if there was a relationship between how many of their graduate level classes presented the service delivery models (i.e., monodisciplinary, multidisciplinary, interdisciplinary, and transdisciplinary) and the amount of paid time spent per month consulting. From 66 respondents a correlation coefficient of 0.08048 was found with a p-value of 0.5273. These values indicated that there was no statistical significance and no correlation found between these two variables. The mean number of

graduate level classes presenting the service delivery models was 2.43. The minimum number of classes was 0 and the maximum number of classes presenting the service delivery models was 10.

Another Pearson Correlational Coefficient Test was conducted to determine if there was a relationship between how many classes presented the service delivery models and the percent paid time per month was dedicated for collaboration. From the 66 respondents a coefficient of 0.38196 was found with a p-value of 0.0018. These values indicate a high significance and positive correlation between the two variables (table 4.3).

Table 4.3 Research Question Four
Examining Graduate level training (presentation of consultation and collaboration, exposure to evidence based research, number of classes) and Percent of Paid Time Per Month To Determine if Relationships Exist

	Compared to amount of paid time spent per month:	Number of responses	Mean number of classes	Minimum number of classes	Maximum number of classes	Correlational coefficient	p-value	significant
Number of classes presented/discussed/taught consultation	Consulting	68	2.78	0	20	.44485	.0002	Yes
Number of classes presented/discussed/taught Collaboration	Collaborating	68	3.66	0	20	.26823	.0307	YES
Exposure to evidence based research during graduate level classes acknowledging merits of consultation.	Consulting	52	2.96	0	20	.02670	.8540	NO
Exposure to evidence based research during graduate level classes acknowledging merits of consultation.	Collaborating	59	3.02	0	18	.21652	.1057	NO
How many graduate level classes presented the service delivery models (i.e., monodisciplinary, multidisciplinary, interdisciplinary, and transdisciplinary)	Consulting	66	2.43	0	10	.08048	.5273	NO
How many graduate level classes presented the service delivery models (i.e., monodisciplinary, multidisciplinary, interdisciplinary, and transdisciplinary).	Collaborating	66	2.43	0	10	.38196	.0018	YES

Percent of Time Spent Consulting and Collaborating with Other Disciplines

Lastly it was explored to see how much time students spent consulting and collaborating with other disciplines during graduate level practicum/clinical experiences. Four multiple choice answers were provided for selection: 1%-25%, 26%-50%, 51%-75%, and 76%-100% (table 4.4). There were 70 respondents who identified they spent time consulting with other disciplines in graduate level training. From those, 63 respondents selected 1%-25% of time was spent consulting with others and 7 respondents selected 26%-50% of time was spent consulting with others. From 74 respondents who indicated they spent time collaborating with other disciplines in graduate level training, 63 of the respondents selected 1%-25%, and 11 respondents selected 26%-50% (table 4.4).

Table 4.4 Research Question Five
Amount of Time Spent Consulting and Collaborating with Other Disciplines

	Total Number	1%-25%	26%-50%	51%-75%	76%-100%
Consulting With Other Disciplines During Graduate Level Training	70	63	7	-	-
Collaborating with Other Disciplines During Graduate Level Training	74	63	11	-	-

Grade Level of Students on Caseload and Percent of Time Spent Consulting

Amount of time spent consulting on a paid monthly basis was examined by age of students on caseload. A total of 48 respondents indicated they worked with Pre-Kindergarten and/or Preschool aged students. From the 48 respondents, 38 (79.17%) identified spending time consulting. The percentage of time spent consulting on a monthly basis ranged from 1- 40% of paid time. The largest number of participants, 12 (31.57%; *n*=38), indicated that they spent 5% of their paid time on a monthly basis consulting. The second highest number, 8 (21.52%; *n*=38), indicated that they spent 10% of their paid time on a monthly basis consulting.

Next, a total of 67 respondents indicated that they worked with kindergarten through fifth grade students. From the 67, 54 respondents (80.60%) identified that they spent time consulting. The percentage of time spent consulting ranged from 1% to 40% of paid time on a monthly basis. The largest number of participants, 18 (33.33%; *n*=54, indicated that they spent 5% of their paid time on a monthly basis consulting. The second highest number, 15 (27.78%; *n*=54, indicated that they spent 10% of their paid time on a monthly basis consulting

Next, a total of 43 respondents indicated that they worked with sixth through eighth grade students. Out of the 43 respondents, 38 (88.37%) identified that they spent time consulting. The percentage of time spent consulting ranged from 1% to 40% of paid time on a monthly basis. Two categories of time were determined to have the largest number of participants. There were 12 (31.58%; *n*=38) that indicated they spent 5% of their paid time per month consulting and 12 respondents (31.58%; *n*=38) indicated that they spent 10% of their paid time consulting.

The last grade level included grades ninth through twelfth. A total of 29 respondents indicated that they had this population of students on their caseload. There were 26 of the 29 respondents (89.66%) identified that they spent time consulting. The percentage of time spent consulting ranged from 1% to 40% of paid time on a monthly basis. The largest amount of participants, 8 (30.37%; *n*=26), indicated that they spent 5% of their paid time on a monthly basis consulting. The second highest number, 7 (26.92%; *n*=26), indicated that they spent 10% of their paid time on a monthly basis consulting (table 4.5).

Table 4.5 Grade Level of Students on Caseload and Time Spent Consulting

Grade Level	Total number of Participants working with grade level students	Total number of participants working with grade level students *and* consulting	Number of participants working with grade level students *and* spending 5% of paid time per month consulting	Number of participants working with grade level students *and* spending 10% of paid time per month consulting
Pre-K	*N*=48	*N*=38 (79.17%)	12 (31.57%)	8 (21.52%)
K-5th	*N*=67	*N*=54 (80.60&)	18 (33.33%)	15 (27.78%)
6th-8th	*N*=43	*N*=38 (88.37%)	12 (31.58%)	12 (31.58%)
9th-12th	*N*=29	*N*=26 (89.66%)	8 (30.37%)	7 (26.92%)
Participants could select any number to best describe paid percent of time per month spent consulting, only 5% and 10% are shown in table. Totals do not equal to 100.				

Grade Level of Students and Percent of Time Spent Collaborating

The amount of time spent collaborating varied by age range of students of the respondents' caseload. A total of 45 respondents indicated that they worked with Pre-Kindergarten or "preschool" aged students. From the 45 responses, 37 (82.22%) identified that they spent time collaborating. The percentage of time spent collaborating ranged from 2% to 45% of paid time on a monthly basis. The largest amount of

participants, 14 (37.84%; *n*=37 who collaborated), indicated that they spent 5% of their paid time on a monthly basis collaborating. The second highest number, 8 (21.62%; *n*=37 who collaborated), indicated that they spent 10% of their paid time on a monthly basis collaborating.

Next, a total of 62 respondents indicated that they worked with kindergarten through fifth grade aged students. From the 62 respondents, 53 (85.49%) identified that they spent time collaborating. The percentage of time spent collaborating ranged from 2% to 45% of paid time on a monthly basis. The largest amount of participants, 21 (39.62%; *n*=53 who collaborated), indicated that they spent 5% of their paid time on a monthly basis collaborating. The second highest number, 15 (28.30%; *n*=53 who collaborated), indicated that they spent 10% of their paid time on a monthly basis collaborating.

A total of 41 respondents indicated that they worked with sixth through eighth grade aged students. From the 41 respondents, 37 (90.24%) identified that they spent time collaborating. The percentage of time spent collaborating ranged from 2% to 45% of paid time on a monthly basis. The largest amount of participants, 14 (37.84%; *n*=37 who collaborated), indicated that they spent 10% of their paid time on a monthly basis collaborating. The second highest number, 10 (27.03%; *n*=37 who collaborated), indicated that they spent 5% of their paid time on a monthly basis collaborating.

Next, a total of 27 respondents indicated that they worked with ninth through twelfth grade aged students. From the 27 respondents 23, (85.19%) identified that they spent time collaborating. The percentage of time spent collaborating ranged from 1% to 45% of paid time on a monthly basis. The largest amount of participants, 10 (43.48%;

n=23 who collaborated), indicated that they spent 10% of their paid time on a monthly basis collaborating. The second highest number, 4 (17.39%; *n*=23 who collaborated), indicated that they spent 5% of their paid time on a monthly basis collaborating (table 4.6).

Table 4.6 Grade Level of Students on Caseload and Time Spent Collaborating

Grade Level	Total number of Participants working with grade level students	Total number of participants working with grade level students *and* collaborating	Number of participants working with grade level students *and* spending 5% of paid time per month collaborating	Number of participants working with grade level students *and* spending 10% of paid time per month collaborating
Pre-K	*N=45*	*N*=37 (82.22%)	14 (37.84%)	8 (21.62%)
K-5th	*N=62*	*N*=53 (85.49%)	21 (39.62%)	15 (28.30%)
6th-8th	*N=41*	*N*=37 (90.24%)	10 (27.03%)	14 (37.84%)
9th-12th	*N=27*	*N*=23 (85.10%)	4 (17.39%)	10 (43.48%)
***Participants could select any number to best describe paid percent of time per month spent collaborating, only 5% and 10% are shown in table. Totals do not equal to 100.**				

Caseload Size and Percent of Time Spent Consulting and Collaborating

Respondents provided information regarding the size of their caseload. A total of 112 responses were collected. The mean number of students on caseloads was 51.88. The minimum number identified was 12 students and the maximum number identified was 100. When looking to see the highest frequency of selection; 10 participants identified that they had 60 students on their caseload. This information was then compared to the amount of paid time per month that the respondents spent consulting and collaborating.

The Pearson Correlation Coefficient compared caseload size to paid time spent consulting per month. The correlation coefficient was -0.03330 with a p-value of 0.7622. When comparing caseload size to paid time spent collaborating per month the Pearson

correlation coefficient was -0.05857 with a p-value of 0.6058. This information indicates that there is no significant relationship between caseload size and time spent in consultation or collaboration per month. The null hypothesis was proven to be correct (table 4.7).

Table 4.7 Caseload Size and Time Spent Consulting and Collaborating

	Compared to amount of paid time spent per month:	Number of responses	Mean number of students on caseload	Minimum number of students on caseload	Maximum number of students on caseload	Highest Frequency of students on caseload	Correlational coefficient	p-value	significant
Caseload Size	Consulting	112	51.88	12	100	60	-0.03330	0.07622	NO
Caseload Size	Collaborating	112	51.88	12	100	60	-0.05857	0.6058	NO

Diagnoses of Students on Caseload and Percent of Time Consulting

Respondents provided information regarding the types of diagnoses/disorders of students on their caseload. This information was compared to paid time spent consulting on a monthly basis. The different diagnoses examined were: articulation, phonological, expressive language, receptive language, fluency, voice, swallowing, literacy, and other disorders/diagnoses.

There were a total of 87 respondents that answered questions related to percent of time spent consulting per month and the number of students present with articulation disorders on their caseload. From the total 87 respondents, 4 (4.60%) identified that they did not consult or have any student with articulation disorders on caseload. A total of 68 (78.16%) respondents identified that they spent time consulting per month and also had

students with articulation disorders on caseload. The highest frequency grouping of respondents with articulation disorders on caseload was found to consult 5% of time. The frequency total was 27 (39.70%; *n*=68) respondents. The second highest frequency grouping of respondents with articulation disorders was 18 respondents (26.47%; *n*=68) who consulted 10% of their paid time per month.

There was a total of 86 respondents that answered questions related to percent of time spent consulting per month and the number of students present with phonological disorders on their caseload. From the total 87 respondents 10 (11.63%) identified that they did not consult or have any student with phonological disorders on caseload. A total of 46 (53.49%) respondents identified that they spent time consulting per month and also had students with phonological disorders on caseload. The highest frequency grouping of respondents with phonological disorders on caseload was found to consult 5% of time. The frequency total was 15 (32.60%; *n*=46) respondents. The second highest frequency grouping of respondents with phonological disorders was 13 respondents (28.26%; *n*=46) who consulted 10% of their paid time per month.

There was a total of 87 respondents that answered questions related to percent of time spent consulting per month and the number of students present with expressive language disorders on their caseload. From the total 87 respondents 2 (2.30) identified that they did not consult or have any student with expressive language disorders on caseload. A total of 69 (79.31%) respondents identified that they spent time consulting per month and also had students with expressive language disorders on caseload. The highest frequency grouping of respondents with expressive language disorders on caseload was found to consult 5% of time. The frequency total was 27 (39.13%;*n*=69)

respondents. The second highest frequency grouping of respondents with expressive language disorders was 17 respondents (26.63%; *n*=69) who consulted 10% of their paid time per month.

There were a total of 87 respondents that answered questions related to percent of time spent consulting per month and the number of students present with receptive language disorders on their caseload. From the total 87 respondents 3 (3.45) identified that they did not consult or have any student with receptive language disorders on caseload. A total of 61 (70.11%) respondents identified that they spent time consulting per month and also had students with receptive language disorders on their caseload. The highest frequency grouping of respondents with receptive language disorders on caseload was found to consult 5% of time. The frequency total was 25 (40.98%; *n*=61) respondents. The second highest frequency grouping of respondents with receptive language disorders was 15 respondents (24.59%; *n*=61) who consulted 10% of their paid time per month.

There were a total of 87 respondents that answered questions related to percent of time spent consulting per month and the number of students present with fluency disorders on their caseload. From the total 87 respondents, 11 (12.64%) identified that they did not consult or have any student with fluency disorders on their caseload. A total of 58 (66.67%) respondents identified that they spent time consulting per month and also had students with fluency disorders on their caseload. The highest frequency grouping of respondents with fluency disorders on caseload was found to consult 5% of time. The frequency total was 16 (27.59%; *n*=58) respondents. The second highest frequency

grouping of respondents with fluency disorders was 11 respondents (18.97%; *n=58)*) who consulted 10% of their paid time per month.

There were a total of 87 respondents that answered questions related to percent of time spent consulting per month, and the number of students present with voice disorders on their caseload. From the total 87 respondents 17 (19.54%) identified that they did not consult or have any student with voice disorders on their caseload. A total of 8 (9.20%) respondents identified that they spent time consulting per month and also had students with voice disorders on their caseload. The highest frequency grouping of respondents with voice disorders on caseload was found to consult 5% of time. The frequency total was 6 (75%; *n*=8) respondents. The second highest frequency grouping of respondents with voice disorders was 2 respondents (25%; *n*=8) who consulted 10% of their paid time per month.

There were a total of 86 respondents that answered questions related to percent of time spent consulting per month and the number of students present with swallowing disorders on their caseload. From the total 86 respondents, 17 (19.77%) identified that they did not consult or have any student with swallowing disorders on their caseload. A total of 5 (5.81%) respondents identified that they spent time consulting per month and also had students with swallowing disorders on their caseload. There were two equally high frequency groupings of respondents with swallowing disorders on their caseload. The first was found to consult 5% of time. The frequency total was 2 (40.00%; *n*=5) of the 5 respondents. The second high frequency grouping of respondents with swallowing disorders was 2 respondents (40.00%; *n*=5) who consulted 10% of their paid time per month.

There were a total of 87 respondents that answered questions related to percent of time spent consulting per month and the number of students present with literacy disorders on their caseload. From the total 87 respondents, 14 (16.09%) identified that they did not consult or have any student with literacy disorders on their caseload. A total of 8 (9.20%) respondents identified that they spent time consulting per month and also had students with literacy disorders on their caseload. The highest frequency grouping of respondents with literacy disorders on their caseload was found to consult 5% of time. The frequency total was 5 (62.5%; n=8) respondents. The highest amount of time spent consulting, with 1 participant out of the 8 was 40% of paid time per month.

There were a total of 85 respondents that answered questions related to percent of time spent consulting per month and the number of students presenting with other disorders (any disorder besides the ones previously listed) on their caseload. From the total 85 respondents, 15 (17.65%) identified that they did not consult or have any student with other disorders on caseload. A total of 18 (21.18%) respondents identified that they spent time consulting per month and also had students with other disorders on caseload. The highest frequency grouping of respondents with other disorders on caseload was found to consult 10% of time. The frequency total was 7 (38.89%; n=15) respondents. The second highest frequency grouping of respondents with other disorders was 6 respondents (33.33%; n=15) who consulted 5% of their paid time per month (table 4.8).

Table 4.8 Diagnosis of Students on Caseload and Time Consulting

Diagnosis	Total number of Participants working with students with diagnosis	Total number of participants working with students with diagnosis *and* consulting	Number of participants working with students with diagnosis *and* spending 5% of paid time per month consulting	Number of participants working students with diagnosis *and* spending 10% of paid time per month consulting
Articulation	*N*=87	*N*=68 (78.16%)	27 (39.70%)	18 (26.47%)
Phonological	*N*=86	*N*=46 (53.49%)	15 (32.60%)	13 (28.26%)
Expressive Language	*N*=87	*N*=69 (79.31%)	27 (39.13%)	17 (26.63%)
Receptive Language	*N*=87	*N*=61 (70.11%)	25 (40.98%)	15 (24.59%)
Fluency	*N*=87	*N*=58 (66.67%)	16 (27.59%)	11 (18.97%)
Voice	*N*=87	*N*= 8 (9.20%)	6 (75.00%)	2 (25.00%)
Swallowing	*N*=86	*N*=5 (5.81%)	2 (40.00%)	2 (40.00%)
Literacy	*N*=87	*N*=8 (9.20%)	5 (62.5%)	NA
Other	*N*=85	*N*=15 (17.65%)	7 (38.89%)	6 (33.33%)

Participants could select any number to best describe paid percent of time per month spent consulting, only 5% and 10% are shown in table. Totals do not necessarily equal to 100.

Diagnosis of Students on Caseload and Time Collaborating

Respondents provided information regarding the types of diagnoses/disorders of students on their caseload. This information was compared to paid time spent collaborating on a monthly basis. The different diagnoses examined were: articulation, phonological, expressive language, receptive language, fluency, voice, swallowing, literacy, and other disorders/diagnosis.

There were a total of 82 respondents that answered questions related to percent of time spent collaborating per month, and how many students present with articulation disorders on their caseload. From the total 82 respondents 4 (4.88) identified that they did not collaborate or have any student with articulation disorders on caseload. A total of 64 (78.04%) respondents identified that they spent time collaborating per month and also had students with articulation disorders on caseload. The highest frequency grouping of respondents with articulation disorders on caseload were found to collaborate 5% of time.

The frequency total was 24 (37.5%; *n*=64) respondents. The second highest frequency grouping of respondents with articulation disorders was 19 respondents (29.69%; *n*=64) who collaborated 10% of their paid time per month. The highest amount of time spent collaborating, with 1 participant out of the 64, was 45% of paid time per month.

There were a total of 81 respondents that answered questions related to percent of time spent collaborating per month, and how many students present with phonological disorders on their caseload. From the total 81 respondents 9 (11.811) identified that they did not collaborate or have any student with phonological disorders on caseload. A total of 43 (53.01%) respondents identified that they spent time collaborating per month and also had students with phonological disorders on caseload. The highest frequency grouping of respondents with phonological disorders on caseload was found to collaborate 5% of time. The frequency total was 15 (34.88%; *n=43*) respondents. The second highest frequency grouping of respondents with phonological disorders was 11 respondents (25.58%; *n*=43) who collaborated 10% of their paid time per month. The highest amount of time spent collaborating, with 1 participant out of the 43, was 45% of paid time per month.

There were a total of 82 respondents that answered questions related to percent of time spent collaborating per month, and how many students present with expressive language disorders on their caseload. From the total 82 respondents 2 (2.44) identified that they did not collaborate or have any student with expressive language disorders on caseload. A total of 65 (79.27%) respondents identified that they spent time collaborating per month and also had students with expressive language disorders on caseload. The highest frequency grouping of respondents with expressive language disorders on

caseload was found to collaborate 5% of time. The frequency total was 24 (36.92%; *n*=65) respondents. The second highest frequency grouping of respondents with expressive language disorders was 21 respondents (32.30%; *n*=65) who collaborated 10% of their paid time per month. The highest amount of time spent collaborating, with 1 participant out of the 65, was 45% of paid time per month.

There were a total of 82 respondents that answered questions related to percent of time spent collaborating per month, and how many students present with receptive language disorders on their caseload. From the total 81 respondents 2 (2.44) identified that they did not collaborate or have any student with receptive disorders on caseload. A total of 57 (69.51%) respondents identified that they spent time collaborating per month and also had students with receptive disorders on caseload. The highest frequency grouping of respondents with receptive disorders on caseload was found to collaborate 5% of time. The frequency total was 23 (40.35%; *n*=57) respondents. The second highest frequency grouping of respondents with receptive disorders was 17 respondents (29.82%; *n*=57) who collaborated 10% of their paid time per month. The highest amount of time spent collaborating, with 1 participant out of the 43, was 45% of paid time per month.

There were a total of 82 respondents that answered questions related to percent of time spent collaborating per month, and how many students present with fluency disorders on their caseload. From the total 82 respondents 11 (13.41) identified that they did not collaborate or have any student with fluency disorders on caseload. A total of 40 (48.78%) respondents identified that they spent time collaborating per month and also had students with fluency disorders on caseload. The highest frequency grouping of respondents with fluency disorders on caseload was found to collaborate 5% of time. The

frequency total was 14 (35.0%; *n*=40) respondents. The second highest frequency grouping of respondents with fluency disorders was 13 respondents (32.50%; *n*=40) who collaborated 10% of their paid time per month. The highest amount of time spent collaborating, with 1 participant out of the 40, was 45% of paid time per month.

There were a total of 82 respondents that answered questions related to percent of time spent collaborating per month, and how many students present with voice disorders on their caseload. From the total 81 respondents 16 (19.51) identified that they did not collaborate or have any student with voice disorders on caseload. A total of 8 (9.76%) respondents identified that they spent time collaborating per month and also had students with voice disorders on caseload. There were two equally high frequency groupings of respondents with voice disorders on caseload. The first was found to collaborate 5% of time. The frequency total was 2 (25.00%; *n*=8) respondents. The second high frequency grouping of respondents with voice disorders was 2 respondents (25.00%; *n*=8) who collaborated 10% of their paid time per month.

There were a total of 81 respondents that answered questions related to percent of time spent collaborating per month, and how many students present with swallowing disorders on their caseload. From the total 81 respondents 15 (18.52) identified that they did not collaborate or have any student with swallowing disorders on caseload. A total of 4 (4.93%) respondents identified that they spent time collaborating per month and also had students with swallowing disorders on caseload. There were two equally high frequency groupings of respondents with swallowing disorders on caseload. The first was found to collaborate 5% of time. The frequency total was 2 (50.00%; *n*=4) respondents.

The second high frequency grouping of respondents with swallowing disorders was 2 respondents (50.00%; *n*=4) who collaborated 20% of their paid time per month.

There were a total of 82 respondents that answered questions related to percent of time spent collaborating per month, and how many students present with literacy disorders on their caseload. From the total 82 respondents 14 (17.07) identified that they did not collaborate or have any student with literacy disorders on caseload. A total of 9 (10.98%) respondents identified that they spent time collaborating per month and also had students with literacy disorders on caseload. The highest frequency grouping of respondents with literacy disorders on caseload was found to collaborate 10% of time. The frequency total was 3 (3.33%; *n*=9) respondents. The other groupings, 2%, 5%, 6%, and 20% of paid time per month had 1 respondent each.

There were a total of 80 respondents that answered questions related to percent of time spent collaborating per month, and how many students present with other disorders (any disorder besides the ones previously listed) on their caseload. From the total 80 respondents 14 (17.50) identified that they did not collaborate or have any student with other disorders on caseload. A total of 18 (22.5%) respondents identified that they spent time collaborating per month and also had students with other disorders on caseload. The highest frequency grouping of respondents with other disorders on caseload was found to collaborate 10% of time. The frequency total was 6 (33.33%; *n*=18) respondents. The second highest frequency grouping of respondents with other disorders was 3 respondents (16.67%; *n*=18) who collaborated 5% of their paid time per month. The highest amount of time spent collaborating, with 1 participant out of the 18, was 45% of paid time per month (table 4.9)

Table 4.9 Diagnosis of Students on Caseload and Time Spent Collaborating

Diagnosis	Total number of Participants working with students with diagnosis	Total number of participants working with students with diagnosis *and* collaborating	Number of participants working with students with diagnosis *and* spending 5% of paid time per month collaborating	Number of participants working students with diagnosis *and* spending 10% of paid time per month collaborating
Articulation	*N*=82	*N*=64 (78.16%)	24 (37.50%)	19 (29.69%)
Phonological	*N*=81	*N*=43 (53.01%)	15 (34.88%)	11 (25.58%)
Expressive Language	*N*=82	*N*=65 (79.27%)	24 (36.92%)	21 (32.30%)
Receptive Language	*N*=82	*N*=57 (69.51%)	23 (40.35%)	17 (29.82%)
Fluency	*N*=82	*N*=40 (48.78%)	14 (35.00%)	13 (32.50%)
Voice	*N*=82	*N*= 8 (9.76%)	2 (25.00%)	2 (25.00%)
Swallowing	*N*=81	*N*=4 (4.93%)	2 (50.00%)	2 (50.00%)
Literacy	*N*=82	*N*=8 (9.20%)	-	3 (33.33%)
Other	*N*=80	*N*=18 (22.50%)	3 (16.67%)	6 (33.33%)

Participants could select any number to best describe paid percent of time per month spent collaborating, only 5% and 10% are shown in table. Totals do not necessarily equal to 100.

Severity of Diagnosis and Time Spent Consulting

Respondents provided information regarding the severity of the diagnosis of students on their caseload. This information was compared to paid time spent consulting and consulting on a monthly basis. There were a total of 87 respondents who answered both questions related to severity of diagnosis and paid time spent consulting per month.

There were a total of 3 respondents (3.45%) who indicated that they did not have students with a mild diagnosis on caseload and also did not consult. A total of 61 respondents (70.11%) indicated that they have students with a mild diagnosis and spend at least 1% of their paid time per month consulting. The highest number of respondent with mild disorders on caseload who consulted the most amount of time was 24 (39.34%; *n*=61) respondents who consulted 5% of their paid time per month. The second highest number of respondents was 16 (26.23%; *n*=61) respondents who consulted 10% of their paid time per month

There were a total of 2 respondents (2.30%) who indicated that they did not have students with a moderate diagnosis on caseload and also did not consult. A total of 67 respondents (77.01%) indicated that they have students with a moderate diagnosis and spend at least 1% of their paid time per month consulting. The highest number of respondent with moderate disorders on caseload who consulted the most amount of time was 26 (38.80%; *n*=67) respondents who consulted 5% of their paid time per month. The second highest number of respondents was 18 (26.87%; *n*=67) respondents who consulted 10% of their paid time per month.

There were a total of 5 respondents (5.75%) who indicated that they did not have students with a severe diagnosis on caseload and also did not consult. A total of 64 respondents (73.56%) indicated that they have students with a severe diagnosis and spend at least 1% of their paid time per month consulting. The highest number of respondent with severe disorders on caseload who consulted the most amount of time was 25 (39.06%; *n*=64) respondents who consulted 5% of their paid time per month. The second highest number of respondents was 17 (26.56%; *n*=64) respondents who consulted 10% of their paid time per month.

There were a total of 11 respondents (12.64%) who indicated that they did not have students with a profound diagnosis on caseload and also did not consult. A total of 41 respondents (47.13%) indicated that they have students with a profound diagnosis and spend at least 1% of their paid time per month consulting. The highest number of respondent with profound disorders on caseload who consulted the most amount of time was 15 (36.59%; *n*=41) respondents who consulted 5% of their paid time per month. The

second highest number of respondents was 11 (26.83%; *n*=41) respondents who consulted 10% of their paid time per month (table 4.10).

Table 4.10 Severity of Diagnosis and Time Spent Consulting

Severity	Total number of Participants working with students with severity level	Total number of participants working with students with severity level *and* consulting	Number of participants working with students with severity level *and* spending 5% of paid time per month consulting	Number of participants working students with severity level *and* spending 10% of paid time per month consulting
Mild	*N*=87	*N*=61 (70.11%)	24 (39.34%)	16 (26.23%)
Moderate	*N*=87	*N*=67 (53.01%)	26 (38.80%)	18 (26.87%)
Severe	*N*=87	*N*=64 (73.56%)	25 (39.06%)	17 (26.56%)
Profound	*N*=87	*N*=41 (69.51%)	15 (36.59%)	11 (26.83%)
Participants could select any number to best describe paid percent of time per month spent consulting, only 5% and 10% are shown in table. Totals do not necessarily equal to 100.				

Diagnosis Severity and Time Collaborating

Respondents provided information regarding the severity of the diagnosis of students on their caseload. This information was compared to paid time spent collaborating on a monthly basis. There were a total of 82 respondents who answered both questions related to severity of diagnosis and paid time spent collaborating per month.

Of the 82 respondents was 59 (71.96%) both collaborated and had mild students on caseload. The highest number of respondents with mild disorders on their caseloads who collaborated the most amount of time was 22 (37.29%; *n*=59) respondents who collaborated 5% of their paid time per month. The second highest number of respondents was 19 (32.20%; *n*=59) who collaborated 10% of their paid time per month. The highest

amount of time spent collaborating, with 1 participant out of the 66, was 45% of paid time per month.

There were a total of 2 respondents (2.44%) who indicated that they neither collaborated nor had students with a moderate diagnosis on their caseload. A total of 64 respondents (78.04%) indicated that they have students with a moderate diagnosis, and spent at least 2% of their time collaborating. The highest number of respondents with mild disorders on caseload who collaborated the most amount of time was 23 (35.94%; n=64) respondents who collaborated 5% of their paid time per month. The second highest number of respondents was 20 (31.25%; n=64) respondents who collaborated 10% of their paid time per month. The highest amount of time spent collaborating, with 1 participant out of the 64, was 45% of paid time per month.

There were 4 respondents (4.88%) who indicated that they neither collaborated nor had students with a severe diagnosis on their caseload. A total of 60 respondents indicated that they have students with severe disorders on their caseload and spent at least 2% of their time collaborating. The highest number of respondents with severe disorders on caseload who collaborated the most amount of time was 21 (35%; n=60) who collaborated 5% of their paid monthly time. The second highest number of respondents who collaborated was 20 (33.33%; n=60) was 10% of their paid time per month. The highest amount of time spent collaborating, with 1 participant out of the 60, was 45% of paid time per month.

A total of 9 respondents identified that they did not have any students with profound disorders on caseload and also did not spend any time collaborating. A total of 37 (45.12%) respondents identified that they had students with profound disorders on

their caseload and who spent at least 2% of their monthly paid time collaborating. The highest number of respondents with profound disorders who collaborated the most amount of time was 16 (43.24%; *n*=37) respondents who collaborated 10% of their paid time. The second highest amount was 7 (18.92%; *n*=37) respondents who collaborated 5% of their paid time. The highest amount of time collaborating, with 1 participant out of the 37 respondents, was 45% of paid time per month (table 4.11).

Table 4.11 Severity of Diagnosis and Time Spent Collaborating

Severity	Total number of Participants working with students with severity level	Total number of participants working with students with severity level *and* consulting	Number of participants working with students with severity level *and* spending 5% of paid time per month consulting	Number of participants working students with severity level *and* spending 10% of paid time per month consulting
Mild	*N*=82	*N*=59 (71.96%)	22 (37.29%)	19 (32.20%)
Moderate	*N*=82	*N*=64 (78.04%)	23 (35.94%)	20 (31.25%)
Severe	*N*=82	*N*=60 (73.56%)	21 (35.00%)	20 (33.33%)
Profound	*N*=82	*N*=37 (45.12%)	7 (18.82%)	16 (43.24%)
Participants could select any number to best describe paid percent of time per month spent consulting, only 5% and 10% are shown in table. Totals do not necessarily equal to 100.				

Differences Between Use and Perception of Service Delivery Models

Three questions were asked regarding the service delivery models. The service delivery models referenced were monodisciplinary, multidisciplinary, interdisciplinary, and transdisciplinary. The models were put in a chart with definitions next to each model. The first question asked the respondent which model would be the most effective to use in the public school setting. The second questions asked the respondent to identify which of the four models they used the most in their setting. The last question asked which model the respondent would prefer to use in their setting.

When examining what models the respondents think are best and what models are being used in practice, 46.84% of respondents thought the interdisciplinary model was the best model to use in the school setting. 62.03% of respondents than identified that the model they use most in practice was the multidisciplinary model. A Pearson chi-squared test was run to determine the statistical significance of these two selections. A p-value of .0565 was found between these two variables. This indicated that there is a statistical significance between the two variables. The null hypothesis states that there is little correlation between the two variables; given our results this hypothesis is proven to be incorrect.

When examining what models SLPs think is best and what models they would prefer to use in their setting 46.84% respondents identified that interdisciplinary would be the most effective in school based practice and 45.57% of respondents stated they would prefer to use the interdisciplinary model. A Pearson chi-squared test was conducted to determine the level of statistical significant between the two variables. A p-value of <0.0001 was found which indicates that the relationship between these two variables is highly significant. The null hypothesis showed that there is little correlation between these two variables was proven to be incorrect.

When examining the models SLPs use and the models they would prefer to use in their setting 60.49% of respondents stated that they use the multidisciplinary model, and 44.44% of respondents stated that they would prefer to use the interdisciplinary model. A Pearson chi-squared test was conducted to determine the level of significance and a p-value of <.0001 was found. This indicates that there is a highly significant relationship between these two variables. The null hypothesis was proven to be incorrect, and the p-

value indicated that there is less than one thousandth of a chance that a SLP would select a different response.

Perceived Factors Impacting Service Delivery

Respondent were asked to select factors that they perceived impacted their selection of a service delivery model. A list of ten factors was provided and respondents had the opportunity to select any factors they felt applied. The factors listed were district policies, administration, scheduling, professional relationships, clinical experiences, evidence based research, client values, accessibility to therapy materials, access to a private therapy room, and other.

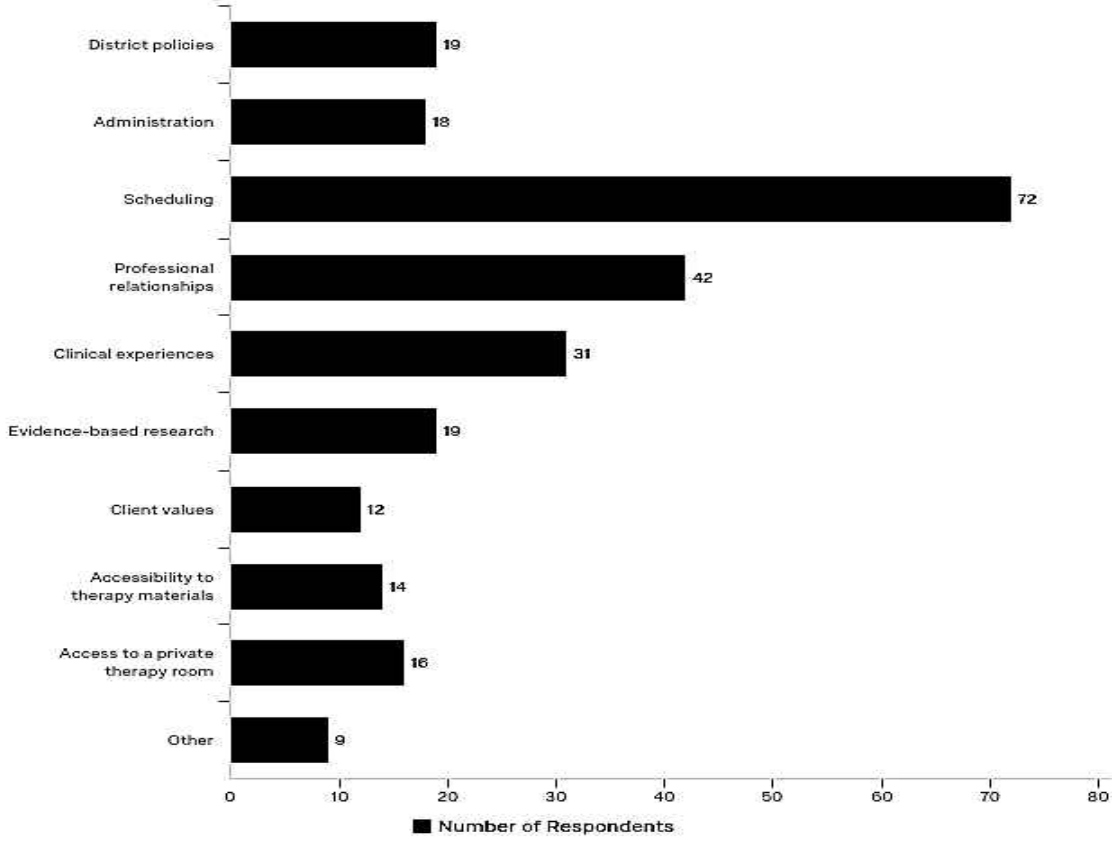
A total of 82 respondents answered the question and selected one or more of the factors. From the 82 respondents a total of 252 factors were selected overall. The following selections are recorded as follows: District policies was selected by 19 respondents, administration was selected by 18 respondents, scheduling was selected by 72 respondents, professional relationships was selected by 42 respondents, clinical experiences was selected by 31 respondents, evidence based research was selected by 19 respondents, client values was selected by 12 respondents, accessibility to therapy materials was selected by 14 respondents, access to a private therapy room was selected by 16 respondents, and other was selected by 9 respondents.

72 of the 82 respondents (87.8%) determined that scheduling contributed to their selection of a service delivery model, out of the total 252 factors selected this factor was selected with the highest frequency at 28.57% of the time. 42 of the 82 respondents (51.12%) determined that professional relationships contributed to their selection of a

service delivery model. Out of the total 252 factors selected this factor was selected with the second highest frequency at 16.67% of the time. 31 of the 82 (37.80%) respondents selected clinical experiences as a factor impacting their selection of a service delivery model. Out of all the factors this was expressed at the third highest frequency of 12.30% out of the total 252 factors.

Both district policies and evidence based research was selected by a total of 19 of the 82 respondents (23.17%), and had a frequency of 7.54% out of all 252 factors. Administration was a factor selected by 18 of the 82 respondents (21.95%), and had a frequency of 7.14% out of all the 252 factors. Accessibility to therapy materials was selected by 14 of 82 respondents (17.07%) and had a frequency of 5.56% out of all 252 factors. Access to a private therapy room was selected by 16 of the 82 respondents (19.51%) and a frequency of 6.35% of all 252 factors. Lastly, respondents could select other as a factor that impacted their service delivery selection. 9 of the 82 respondents selected other (10.98%), and a frequency of 3.57 percent was found out of all 252 factors (table 4.12).

Table 4.12
Factors Perceived to Impact Service Delivery Selection



***A total of 82 respondents selected one or more factors**

CHAPTER 5

DISCUSSION

Objectives of Study

First this study attempted to identify whether SLPs identify a difference between consultation and collaboration. At this time, there is little consistency in the terminology used in the literature to describe the manner of SLPs' communication and work with other professionals in the public school (Chan & Dally, 2001; Coben, Thomas, Sattler, & Morsink, 1997; Tharp, 1975; Prelock, 1995; McGregor, 2007). The information collected provided an increased understanding of how SLPs define consultation and collaboration as it relates to the public school setting.

The second and third research objects were used to identify if relationships existed between paid time spent consulting or collaborating and different variables of SLPs caseloads and professional experiences. The variables examined were: years of experience in the field, grade level of students on caseload, caseload size, diagnosis of students on caseload, severity of diagnosis of students on caseload, graduate level exposure to evidence based research, graduate level presentation of the service delivery models, and graduate level training.

The ASHA School Survey Report (2016i) identified the most common service delivery model as the pull-out model, which may be viewed as a monodisciplinary approach. This information led to the second and third research objective to begin building an evidence base that provides information as to why pull-out remains the

primary model used in the school setting, despite the push for consultative and collaborative services (ASHA, 1991c; Mecrow, Beckwith, & Klee, 2010; LaRuse, Weiss, & Cable, 2009).

The fourth objective of the study was to determine if there was a difference between the service delivery model SLPs used in their practice in the public school and which service delivery model SLPs deemed most effective.

The fifth and final objective of this research was to begin examining the factors SLPs perceive to impact their selection of service delivery models. This may provide a foundation to begin answering questions such as how and why these factors play a role in SLP decision making. Results highlight the areas which contribute positively to selecting ideal service delivery models.

Perceived Differences Between Consultation and Collaboration

Survey respondents were asked to correctly identify the scenario that depicted consultation and the scenario that depicted collaboration. This information was relevant to the purpose of the study given that there are various definitions of consultation and collaboration across the literature. The definitions and scenarios used for the purpose of this study were taken from a combination of several sources (ASHA, 1991; Chan & Dally 2001; Coben et al., 1997; and Tharp, 1975). The scenarios were presented, and the respondent was given four multiple choices to select from: consultation, collaboration, both consultation and collaboration, and none of the above. There were a total of 82.57% of respondents that correctly identified the scenario depicting consultation, and 69.72% correctly identified the scenario depicting collaboration. When looking at the responses

collected for the scenario depicting collaboration, a total of 28.44% of the respondents thought that the scenario depicted both consultation and collaboration. This was almost a third of the total respondents, and leads to questions regarding why there was such a large discrepancy. Overall a total of 63.39% of the respondents correctly identified both scenarios. This number may indicate that SLPs in the public school understand the difference between consultation and collaboration, despite inconsistencies in the literature. For example in the study conducted by Lee, Schlaudecker, and Regimbal (1995) the term "collaborative consultative approach" is used. It is unknown where on the spectrum of consultation to collaboration the communication of the team in this study is located. It is unknown what type of service delivery approach this team used to conduct the study. Through increasing the use of better delineated terms, such as consultation, collaboration, monodisciplinary, multidisciplinary, interdisciplinary, and transdisciplinary, one can replicate studies such as the one conducted by Lee, Schlaudecker, and Regimbal (1995). In addition, by increasing the use of terms understood by all SLPs, current practicing clinicians can better record and share their therapeutic methods found to be effective.

One may insinuate that since the majority of SLPs correctly identified the scenarios, SLPs do understand that they have a role as a team member in the public school (either through consulting or collaborating). This implies that use or lack of use of consultation and/or collaboration should not be considered secondary to understanding. It was also found that almost one-third of the applicants considered the scenario depicting collaboration to depict both consultation and collaboration. This may be suggestive that SLPs are still learning how their role as a consultant differs from being a collaborative

team member. One should also consider the wording of the scenario and how current definitions of consultation and collaboration differ in the literature. These varied definitions may result in a varied understanding of consultation and collaboration.

Relationships Between Variables and Time Spent Collaborating and Consultation

Data were collected regarding respondents' years of experience working in the field. They were then examined to see if there were any significant relationships between experiences in the field and how often one spends time consulting and collaborating. There were no significant correlations found between the years of experience of respondents and how often they consulted in the field. Therefore, it may be concluded that the amount of experience one has, does not have a significant impact on the amount of paid time per month one spends consulting with other professionals in the school setting. There was a significant correlation found between the amount of years of experience one has and the amount of paid time per month one spends collaborating per month. Given this information one may make several conclusions. First it may be suggested more years in the field may indicate more comfortable level in taking a collaborative role in a team approach. These SLPs with more experience in the field may have higher comfort levels in breaking discipline boundaries and sharing roles in assessment, diagnostics, and treatment. Secondly one can imply that collaborating has increased value in the school setting for those with more experience. Professionals who have increased experience in the field may weight collaboration with enough importance to allocate a portion of their paid time per month towards this service. In a study conducted by Katz, Maag, Fallon, Blenkarn, and Smith (2010) identified that SLPs with

more years of experience in the field led to a greater degree of job satisfaction. The researchers also posed that another possibility to improve overall job satisfaction would be collaboration in a school based setting. It was suggested that collaboration may ease burdens of large caseloads, which could then lead to improved job satisfaction. One could suggest given this information that those SLPs with more years of experience and higher job satisfaction may also consider using consultation and collaboration in the school setting.

Respondents provided information regarding the size of their caseload. The mean number of students that respondents identified on their caseload was 51.8 (range 12-100). The number of students on respondents' caseloads was then compared to time spent consulting and time spent collaborating. There was no significant relationship between number of students on caseload and time spent in either collaboration or consultation. While no significant relationship was present, the data provide important insight into SLPs' caseloads. First, the data points create a tri-modal bell curve shape. The peaks of this curve hit at caseloads including 30-45, 50, and 60 students. Instead of a centered bell curve shape, the shape is skewed to accommodate the large frequency of respondents who have a caseload of 60 students. Secondly, there is a large range in the caseload size, which contributes to the skewed bell curve shape. The peaks and large range in caseload sizes may indicate that the information collected regarding caseload size is not a true representation of all SLPs across the country. The numbers do however support that the highest frequency of SLPs who responded is from Kentucky, as the caseload cap is 65 students. Another significant factor to consider, is that paid time per month may be

distributed based on workload rather than caseload. Given that no correlations were discovered, these may be plausible explanations.

When examining the grade level, diagnosis, and severity of students on caseload, a trend related to the time spent consulting and collaborating was identified. Students on caseloads were examined in three different ways. First they were examined by grades, and were grouped by pre-kindergarten, kindergarten to fifth grade, sixth to eighth grade, and ninth through twelfth grade. Then students were examined by diagnosis. Respondents selected the percentage that best represented the disorders on their caseload. The disorders listed were articulation, phonology, receptive language, expressive language, fluency, voice, swallowing, literacy, and other. Lastly, caseloads of students were examined with regards to severity of diagnosis. Respondents were asked to type in a number that best described the percent of students with mild, moderate, severe, and profound disorders. The mode percentages across respondents for all grade levels, diagnosis, and severity of students was 5% and 10% This information is interesting given that respondents had the option to write in the percentage versus selecting from a pre-determined list the percentages they felt best applied to their schedule. Across all grade levels, diagnoses, and severity of disorders there is a consistent trend of respondents selecting 5% and 10%. The implications of this may be looked at in two ways. First one may be lead to conclude that regardless of the grade level of students, diagnoses, or severity level of diagnosis, SLPs find consultation and collaboration important enough to spend 5% and 10% of their paid time per month. The other implication for this, is regardless of the grade level of students, diagnosis, or severity level of diagnosis, most SLPs only have a limited amount of their paid time to commit to consultation and

collaboration. Implications of this information may lead employers and practioners to examine what factors are contributing positively to their ability to consult and collaborate, and what factors are reducing SLPs' time to consult and collaborate.

Such implications for practice may also be found in the study conducted by Ritzman, Sanger, and Coufal (2006). While it was not found that the collaborative intervention conducted by the SLP was more effective, the study did highlight the challenges, benefits, and opportunities that collaboration offers. Both studies provide support to continue exploring what specific areas contribute and negate opportunities for SLPs to effectively consult and collaborate in the public school setting.

Information was collected regarding presentation of evidence based research concerning consultation and collaboration in respondents' graduate level classes to correlate with time spent consulting and collaborating. For both consultation and collaboration, *p*-values indicated that there was no statistical significance. This may suggest that there is no relationship between the number of classes that present evidence based research in graduate level training and the amount of time respondents spent consulting and collaborating. This suggested lack of relationship between these variables may be viewed as a negative or a positive. If viewing this lack of relationship as a negative, one could suggest that the research presented in graduate level training did not inspire or motivate practitioners to use consultative or collaborative service delivery. If viewing this lack of a relationship as a positive, one could suggest the quality of the research presented was more significant than the quantity of the research. Given these explanations, there may be implications for graduate level programs when training future SLPs. One implication is that programs may need to reconsider how much evidence

based research they are presenting to their graduate level students. Another implication is graduate programs may also wish to examine the type and strength of research being presented, and then to identify strengths and weaknesses.

Data examining how many graduate level classes presented/discussed/taught consultation and collaboration were collected to determine if relationships existed between presentation of consultation and collaboration in graduate level training and use of consultation and collaboration in practice. Respondents were asked was to identify how many graduate level classes' presented/discussed/taught consultation. For both consultation and collaboration p-values indicates that a statistical significance exists. These two significant relationships suggest that the presentation of consultation and collaboration in graduate level classes impacts the amount of time a SLP consults and collaborates in a public school setting. Given these data there may be implications for graduate level programs. As previously noted there was no significance of presentation of evidence based research acknowledging consultation and collaboration, and time spent consulting and collaborating. However, there is a statistical significance between the number of classes who presented/discussed/taught consultation and collaboration. One could infer from this information that perhaps students are learning more about consultation and collaboration from anecdotal evidence and/or experience than recorded evidenced based research. Implications for current practice may suggest that practicing SLPs should be encouraged to record their experiences and take more data to contribute to the evidence base for consultation and collaboration. Other implications for the data collected, may be for graduate schools to place a higher emphasis on evidence based

research. Graduate schools may wish to encourage students not just to use evidence based research, but to also contribute to the evidence base available.

Support for these implications can be tied back to ASHA roles and responsibilities (2010f). While it is the role of the SLP to provide collaborative service delivery, the SLP is legally and ethically bound to acknowledge when an area is outside of their professional scope or ability. Given this, it is important that graduate schools adequately prepare graduate students to take on consultative or collaborative roles.

Respondents were asked to determine how many of their graduate level classes presented the service delivery models (i.e., monodisciplinary, multidisciplinary, interdisciplinary, and transdisciplinary). This information was then used to determine any correlation between the number of classes that presented the service delivery models and the amount of time respondents spend providing consultation and collaboration. Mixed results revealed that there was a correlation found between paid time spent collaborating, but there was not a correlation found between paid time and consulting. Given that these results are not consistent for time spent in both consultation and collaboration, several implications may be suggested. One implication is that clinicians place higher value on collaborating during paid time per month, instead of consulting. This may be the result of clinicians being presented with the service delivery models in their graduate level classes to give them a foundational understanding of ways to incorporate those models in school based practice. Another suggestion to these mixed results is that perhaps when the service delivery models were presented in graduate level training, more of an emphasis was placed on the interdisciplinary and transdisciplinary models, which are more collaborative in nature. Implications of these results may encourage graduate level

programs to examine the type and manner of presentation of service delivery models. Other implications for employers of SLPs, and SLPs themselves, may be to re-examine how SLPs are spending their paid time per month. Both employers and practitioners may reconsider ways to better incorporate both consultation and collaboration during paid time.

Difference Between Perspectives and Use of Service Delivery Models

Respondents were provided definitions of four service delivery models presented in the literature. These models and definitions were depicted on a chart that showed them as part of a spectrum moving from consultation to collaboration. These definitions were taken from multiple literature sources in order to provide the best, most comprehensive definition of each (McGregor, 2007; Coben et al., 1997; Prelock, 1995). Respondents were then asked to identify their perspective and use of three areas: what model was viewed as most effective, what model was used most in their setting, and what model would the respondent prefer to use in their setting.

Given the results and the statistical significance identified between the models the respondents think best compared to the models that are actually being used in practice, one can begin to question why there is such a difference between the two. A total of 46.84% of respondents identified that the interdisciplinary model was the best model they could use in the school setting, the next model with the highest frequency of responses was the transdisciplinary model with 27.85% of responses. The multidisciplinary model came in third place as the best model to use in school practice with 24.05% of responses, and the monodisciplinary model came in last place as the best model that SLPs think

should be used in school practice. However, when examining the actual use of these models, 62.03% of respondents use the multidisciplinary model, 16.46% of respondents use either the interdisciplinary model or the monodisciplinary model, and 5.05% of respondents actually use the transdisciplinary model in their practice.

These data suggest several implications. It was identified that SLPs find the monodisciplinary model the least effective, however it is also the model that is used the second highest amount of time. This is conclusive that there continues to be discontinuity between the model SLPs think is the best, what they would prefer to use, and what they actually use. There are variables that continue to have an impact on SLPs' ability to use the model they deem most effective. Given these data, implications for practice include finding ways to close this gap between the service delivery model deemed most effective and the model actually used. This could include finding ways to include administrators and staff to fill team based roles, providing in-service education, or taking a leadership position in the school to establish effective teams.

The next set of questions examined was the model SLPs think is best to use in school practice, and the model they prefer to use in their setting. In answering both of these questions, the majority of respondents identified that they thought the interdisciplinary model was the best

model to use in the school, and the model that they preferred to use in school based practice. When examining this information and the information concerning current service delivery model use collected from the previous question, one may conclude that at least 45% SLPs wish to change the type of service delivery that they are currently providing.

The implications for practice given this information, may push administrators and practicing SLPs in the schools to find ways to support preferred service delivery. Those in a school setting may first identify what is causing the discrepancy between most effective and preferred model to what is actually being used. Then find opportunities to provide support and change, so SLPs in school based practice can use the model they think is best, and the model they would prefer to use in practice. This support should continue beyond the school building level. Support for SLPs to use preferred service delivery is a topic that may be addressed at a district, state, and national level.

Perceived Factors Impacting Service Delivery

The next set of data collected provided information regarding SLPs perception of factors that they thought influenced their selection of service delivery models. The factors were provided in a list format and respondents could select all that they felt applied. The factors listed were district policies, administration, scheduling, professional relationships, clinical experiences, evidence based research, client values, accessibility to therapy materials, access to a private therapy room, and other.

Out of the following factors listed "scheduling" was selected by the highest number of respondents. The second highest selection was professional relationships, and the third highest selection made by SLPs was clinical experiences. While this question provides valuable insight and information, it also has limitations. First, it is not determined if participants viewed the selection of these factors in a positive or negative manner. A respondent may view scheduling as a positive way that allows them to utilize their current service delivery model, or they may view scheduling as a negative aspect

that forces them to use their current service delivery model. Secondly, none of the factors were defined. Professional relationships may have been the second highest selection, but it is unknown who or what those professional relationships consist of. In the same way, it is unknown what respondents identify as clinical experiences. There are many unknown variables associated with this question.

The implications of the information regarding the impact of scheduling and its impact on service delivery selection may indicate that SLPs are foregoing their preferred service delivery for students due to scheduling challenges. One may suggest that in order address challenges related to scheduling, SLPs would benefit from smaller caseloads and more paid time outside of school hours for meetings and preparation time.

Other implications of the collected information support the need for additional education and support in the areas of building professional relationships. While it is unknown whether participants viewed professional relationships as a hindrance or a help, one can recognize that professional relationships have an impact on service delivery selection. These implications suggest that time should be spent in the public school setting to encourage and build professional relationships. One can also suggest that involving the administrators and other staff in professional building exercises may increase support and importance for team based approaches.

In considering the third highest selection, clinical experiences, one should consider graduate level preparation. Most respondents also selected that 1%-25% of time during graduate level training was spent consulting and collaborating with other disciplines. The implications of these two results suggest that we should consider how clinical experiences and the amount of clinical experiences have helped and hindered

service delivery in the public school. Through understanding effective and ineffective methods for SLPs' learning from clinical experiences, graduate programs could provide or increase the number of opportunities to learn about team based approaches, consulting, and collaboration during service delivery.

Although limitations exist, there is value in that this question identifies that further research is needed in this area. A total of 82 respondents made selections totaling a combined 252 factors. This response rate suggests that this is a topic important to current practicing SLPs.

Limitations

One limitation identified was the number and location of respondents. The survey was sent out to potentially several thousand SLPs identified via national social media forums on Facebook and email lists from school districts. A specific sample size was not identified. Out of the several thousand potential respondents, 115 individuals responded to the survey. The highest frequency of respondents that completed the survey were residents of Kentucky. However, with 41 respondents being from KY this did not make up a majority. This suggests that the data cannot be generalized to all SLPs at a national level, and that there may be a bias of results skewed towards SLPs in KY.

A second limitation is that the respondents were identified via self-selection. The self-selection paradigm suggests that there may be a bias in information shared by respondents due to conscious or unconscious factors. Respondents may skew bias to reflect what they think the researcher wants to collect, or what they feel they should be implementing.

Another limitation recognized in this study is that there is no way to verify the respondents were indeed SLPs. While the sample size targeted social media forums designated to SLPs' practice, the survey was anonymous. There is no way to verify if the respondents were actually SLPs.

Another concern is acknowledging that some survey questions could be perceived more positively or negatively. This interpretation by the respondents disallows any conclusions to be made about the tone of data collected. One example of this is on the last questions concerning factors impacting service delivery selection. Some participants may have viewed these factors as positive contributions to their choice, while other participants may have viewed these factors as negatively impacting their choice of service delivery.

An additional limitation acknowledged in this study is undefined terms throughout the survey. An example of this is in the last question regarding factors that impact service delivery. Many respondents selected "professional relationships" as a factor impacting their selection of service delivery. However, what constituted a professional relationship is not defined for the respondent.

A final limitation of this study is the manner in which the survey questions were presented. Questions were presented in a variety of ways; sliding bar, multiple choice, select one or more answer, and short answer. Secondary to the type of questions presented, not all questions could undergo the same type of statistical analysis. This presented challenges when answering the research questions, and attempting to compare data sets to one another.

Conclusion

The findings of this study provide valuable insight to SLPs' understanding and use of consultation, collaboration, and the service delivery models. While correlations were not found with all variables (e.g., time spent in field, caseload size, graduate level training), the information is still valuable. Preliminary data showed trends that indicate SLPs primarily consult and collaborate 5-10% of their paid time per month. This suggests that SLPs value consulting and collaborating with others despite increased caseloads, diverse diagnosis, and a spectrum of severity levels. Implications for practice may recognize that while SLPs place consistent priority to consult and collaborate per month, the paid time spent per month does not change given the students age or for students with more severe diagnosis. One could suggest that a student with more complex needs would benefit from increased time spent consulting and collaborating among team members. In order to determine if students across age levels, diagnosis, and severity of diagnosis would benefit from increased consultation and collaboration, more experimental research is needed.

It appears that the majority of SLPs agree on definitions for consultation and collaboration. While the literature uses different terminology to describe these approaches, it can be suggested that SLPs have a strong understanding for their role in consulting and collaborating in the school setting. The implications of this information suggest that decreased or increased time spent consulting and collaborating is not secondary to SLPs understanding of their role.

Other valuable findings suggest that most SLPs in school based practice are in positions that prohibit their ability to spend the desired amount of time consulting and

collaborating. While SLPs may use a more consultative model (i.e., multidisciplinary), the data suggested that SLPs have a strong desire to increase collaboration (i.e., interdisciplinary and transdisciplinary) in their practice.

SLPs may increase collaborative opportunities by working with administration and teachers in the public school system to find more ways to be included during information sharing. Setting up times during the week or month during planning periods, professional development days, or working lunches may establish the importance and value of consulting and collaborating. Other less formal options may also be considered; teachers, SLPs and other school staff members may rotate to provide supervision during lunch, recess, arrival, and dismissal times at school. While these are not ideal situations to share information, one could suggest that they may help build professional relationships. SLPs may also find it beneficial to share evidence based research with colleagues and administrators in their school setting, acknowledging the merit of collaboration.

Overall, results from this study identified the need for continued research. The information gathered from the survey was broad in nature. Examining both use and perspectives of consultation, collaboration, and the service delivery models allowed for identification of areas that need further research. At this time, there is limited published research regarding the content of this study (Mecrow, Beckwith, & Klee, 2010; Lee, Schlaudecker & Regimbal, 1995). Results provided preliminary findings to assist SLPs in advocating for their role in consultation and collaboration, and to support directives set by ASHA (1991c, 2016i) and IDEA (2004).

Recommendations for Future Study

It is recommended that the research questions presented in this study continue to be examined. While information was provided regarding SLPs' perspective and use of consultation, collaboration, and service delivery models, the limitations of this study disallow it to generalize across all SLPs working in the United States. Therefore, one must recognize that the information collected was preliminary in nature.

Use of extended answer type questions to allow more qualitative information related to perceptions of factors that impact the use of the desired service delivery mode is recommended. Experimental methods to determine the effectiveness of the identified service delivery models would also further inform on the effectiveness of each model. Modified experimental research methods could allow for more causational type data instead of correlational data.

Other future research may examine similarities and differences between SLPs and other disciplines' (e.g., OT, PT, BCBA) understanding, perspective, and use of service delivery models. Through an enhanced understanding of adjacent disciplines' point of view, one can begin discovering ways for all disciplines to increase and improve communication and consultative and collaborative opportunities.

Anecdotal comments revealed a need for more evidence based research that examines SLPs' perspectives and use for service delivery models. One respondent stated "I would greatly prefer a more collaborative model of service delivery. Not only would this best benefit students, but it would also allow professionals the opportunity to learn from each other." This comment suggests a relative need to further examine consultative and collaborative services in the school and how practice can better reflect

recommendations. Another comment was made regarding service delivery selection in the school setting. The respondent stated,

> "Sadly service delivery comes second in the schools. Accurate paperwork & Medicaid billing comes first. Special education directors rarely understand that even though our caseload says 65, it is impossible to provide appropriate service to that many students & still maintain paperwork that is up to district standards."

This comment suggests the need for more evidence based research that SLPs can use to advocate for effective service delivery models and efficient use of time in providing service.

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APPENDICES

Appendix A:

Survey Questionnaire

Q1. How long have you been in this profession?
Slide the circle to the number of years best representing your experience.
1----------70 Years Total

Q2. What are the grade levels of students that you currently work with?
Please type your answer below.

Q3. In what state are you currently employed?
Please type you answer below.

Q4. What is your current caseload size?
Slide the circle to the number best representing your caseload size.
0----------100
Number of students

Q5. Type the number that best represents the percentage of students on your caseload with the listed diagnosis. All percentages must equal to 100%

Articulation Disorder

Phonological Disorder

Expressive Language Disorder

Receptive Language Disorder

Fluency Disorder

Voice Disorder

Swallowing Disorder

Literacy

Other
Total

Q6. Type the number that best represents the percentage of severity of students on your caseload.

All percentages must equal to 100%

0

Mild

0

Moderate

0

Severe

0

Profound

Total

Q7. Click on the response that best matches your perception of the following scenario: When team members work together to share information, assess, plan intervention, and measure progress while sharing a common set of intervention goals, this is known as:

- Consultation
- Collaboration
- Both collaboration and consultation
- None of the above

Q8. Click on the response that best matches your perception of the following scenario: When one team member functions as an expert and shares their professional knowledge with others to help with problem solving, this is known as:

- ☐ Consultation
- ☐ Collaboration
- ☐ Both collaboration and consultation
- ☐ None of the abo

Consultation	Monodisciplinary	One discipline or branch of study is brought forward to problem solve.
	Multidisciplinary	Team members that typically work independently, but may reach out across disciplines to problem solve. Team members are able to think critically about, and recognize strengths of other disciplines.
	Interdisciplinary	Team members share and discuss information on clients, and work together to address complex problem solving and share expertise.
Collaboration	Transdisciplinary	Team members may cross discipline boundaries in order to develop innovative approaches that are best suited to the client's individual needs.

Q9. Type in the percentages that best represent the paid time spent serving students on your caseload. All percentages must add to 100%. Use the above chart for reference.

My caseload allows me to collaborate ____% of my paid time on a monthly basis.

0

My caseload allows me to consult ____% of my paid time on a monthly basis

0

My caseload allows me to provide direct intervention ____% of my paid time on a monthly basis.

My caseload allows me to complete paperwork/documentation/notes ____% of my paid time on a monthly basis.

My caseload allows me to attend administrative/facility meetings____% of my paid time on a monthly basis.

My caseload allows me to meet with caregivers/communicate with caregivers' ____% of my paid time on a monthly basis.

Total

Q10.
In how many of your graduate level classes was consultation presented/discussed/taught?
Slide the circle to indicate the number of classes.

0----------20
Number of classes

Q11.
In how many of your graduate level classes was collaboration presented/discussed/taught?
Slide the circle to indicate the number of classes.

0----------20
Number of classes

Q12.
How many of your graduate level classes presented evidence based research acknowledging the merit of consultation in service delivery?
Slide the circle to indicate the number of classes.

0----------20
Number of classes

Q13.
How many of your graduate level classes presented evidence based research acknowledging the merit of collaboration in service delivery?
Slide the circle to indicate the number of classes.

0----------20
Number of classes

Q14.
In how many of your graduate level classes were the models of collaboration presented/discussed/taught (monodisciplinary, multidisciplinary, interdisciplinary, transdisciplinary)?
Slide the circle to the number of classes that best represents your experience.

0----------20
Number of classes

Q15.In your graduate level practicum/clinical experience, what percentage of time was spent consulting with other disciplines?

Select the percentages that best represent your experience.

- Not applicable
- 1%-25%
- 26%-50%
- 51%-75%
- 76%-100%

Q16. In your graduate level practicum/clinical experience, what percentage of time was spent collaborating with other disciplines?
Select the percentages that best represent your experience.

- Not applicable
- 1%-25%
- 26%-50%
- 51%-75%
- 76%-100

Q17. Please use the chart as a reference to answer the following question:
Which model do you think would be most effective in the public school setting?

Consultation	Monodisciplinary	One discipline or branch of study is brought forward to problem solve.
	Multidisciplinary	Team members that typically work independently, but may reach out across disciplines to problem solve. Team members are able to think critically about, and recognize strengths of other disciplines.
	Interdisciplinary	Team members share and discuss information on clients, and work together to address complex problem solving and share expertise.
Collaboration	Transdisciplinary	Team members may cross discipline boundaries in order to develop innovative approaches that are best suited to the client's individual needs.

- Monodisciplinary
- Multidisciplinary
- Interdisciplinary
- Transdisciplinary

Q18. Please use the chart as a reference to answer the following question:
Which model do you use the most in your setting?

Consultation	Monodisciplinary	One discipline or branch of study is brought forward to problem solve.
	Multidisciplinary	Team members that typically work independently, but may reach out across disciplines to problem solve. Team members are able to think critically about, and recognize strengths of other disciplines.
	Interdisciplinary	Team members share and discuss information on clients, and work together to address complex problem solving and share expertise.
Collaboration	Transdisciplinary	Team members may cross discipline boundaries in order to develop innovative approaches that are best suited to the client's individual needs.

- Monodisciplinary
- Multidisciplinary
- Interdisciplinary
- Transdisciplinary

Q19.Please use the chart as a reference to answer the following questions:
Which model do you prefer to use in your setting?

Consultation	Monodisciplinary	One discipline or branch of study is brought forward to problem solve.
	Multidisciplinary	Team members that typically work independently, but may reach out across disciplines to problem solve. Team members are able to think critically about, and recognize strengths of other disciplines.
	Interdisciplinary	Team members share and discuss information on clients, and work together to address complex problem solving and share expertise.
Collaboration	Transdisciplinary	Team members may cross discipline boundaries in order to develop innovative approaches that are best suited to the client's individual needs.

- Monodisciplinary
- Multidisciplinary
- Interdisciplinary
- Transdisciplinary

Q20. Which of the following factors contribute to selecting the model you use the most in your setting? (Select all that apply)

- [ ] District policies
- [ ] Administration
- [ ] Scheduling
- [ ] Professional relationships
- [ ] Clinical experiences
- [ ] Evidence-based research
- [ ] Client values
- [ ] Accessibility to therapy materials
- [ ] Access to a private therapy room
- [ ] Other

Q21. Please feel free to add comments regarding service delivery.

Appendix B:

Recruitment Letter

Dear Prospective Research Participant,

You are invited to participate in a study conducted by myself, Burgandy Henderson, B.S, under the supervision of Dr. Charlotte A. Hubbard at Eastern Kentucky University. I am a graduate student in the Communication Disorders Program at EKU. The main purpose of this study is to examine Speech-Language Pathologists' Perceptions and Use of Service Delivery Methods and Models in School-Based Practice.

If you decide to participate in the study, you will be asked to complete a short, online, confidential survey. This survey should only take 15-20 minutes to complete. Participation is completely voluntary and confidential. By completing this survey, you are helping to add to the literature on the usage of various Service delivery models in the public school system.

By submitting the completed survey you are giving your consent to participate in this study. No data will be personally identified with you. Your name will not appear in any presentation or publication coming from this research. If you agree to participate, you may choose not to answer any given questions, and you may withdraw your consent and discontinue your participation at any time. There are no penalties for withdrawing from the study and no known risks to your participation, beyond the inconvenience of time.

If at any time you have questions about this study, you may contact either Dr. Hubbard or myself as follows:

ATTN: Dr. Charlotte Hubbard
Burgandy Henderson
521 Lancaster Ave
Wallace Building
Richmond KY
40476

Email: Burgandy_henderso23@mymail.eku.edu
Charlotte.Hubbard@eku.edu
Phone: 859 622-3155 – Dr. Hubbard

If you would like a summary of the results of this study, please send an email to either one of us at the email address above. Thank you for your consideration of participating in this study.

Sincerely,
Burgandy Henderson, B.S