

AN EVALUATION OF THE FACTORS THAT INFLUENCE  
THE AMOUNT OF TIME AND PLACE  
OF SERVICE PROVISION IN THE SCHOOLS

By

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## Abstract

The purpose of this study was to examine factors impacting the amount of time and place school-based Speech-Language Pathologists (SLPs) provided speech and language intervention. A national survey completed by 1,897 school SLPs indicated that students with severe and moderate disabilities participated in intervention 2-3 times a week for 20-30 minutes in groups outside the classroom. Students with the least severe disability were provided therapy once a week for 20-30 minutes in groups outside the classroom. Analysis using multinomial logistic regression indicated the amount of time was impacted by the SLP's caseload size, their year of graduation and the number of years worked in the schools. For place, the SLP's caseload size and clinical training experiences influenced their selection. These findings suggest that workplace and SLP characteristics impact SLP decisions; whereas, child characteristics did not differentiate time and place of services. Implications for training programs and future research are discussed.

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## Introduction

For each child on his/her caseload, the school-based speech-language pathologist (SLP) makes a recommendation as to where and how often that child should receive services. In recent years, there has been an increased emphasis from both federal legislation and the American Speech-Language Hearing Association (ASHA) for SLPs to utilize research when making decisions regarding intervention, including the frequency and place for these services within the public schools (ASHA, 2005; IDEA, 2004; NCLB, 2001). Unfortunately, there is little data to guide SLPs in their decision-making. The need for more information regarding the intensity, duration, and place for speech and language interventions has been noted by multiple researchers (Cirrin & Gillam, 2008; McCauley & Fey, 2006; Warren, Fey, & Yoder, 2007).

There are data that exist which document the current state of practice with respect to intensity, duration, and place of intervention provided by SLPs in the schools. With respect to place of intervention, according to the Schools Survey (ASHA, 2008) 69% of intervention provided in the schools was provided outside of the classroom. The 2006 ASHA School Survey found that the majority of intervention was conducted in small groups. The ASHA National Outcomes Measures (NOMS) data indicated that an even higher number of children are seen for therapy outside of the classroom setting. According to the NOMS data, 92% of services were delivered outside of the classroom (ASHA, 2002b). With respect to the amount of time for intervention, two-thirds of the students were reported to receive

intervention two times a week for 21-30 minutes (ASHA, 2002b). The findings of these studies would indicate that there is little variation in the amount of time and the place where speech and language services are provided within the schools. The purpose of this study is to examine the factors that impact the decisions that SLPs make regarding the place and time for the delivery of speech and language intervention in the public schools. The literature review will be divided into the following sections: (1) factors that might be considered when determining a service delivery model will be described that include child characteristics, workplace characteristics, and SLP characteristics; (2) a description of current SLP practices in the schools; (3) research evaluating the impact of variations in the amount of place and time of intervention services; and (4) rationale for the study and the research questions.

#### *A Model of SLP Decision Making for Service Delivery*

There are several possible factors that influence the SLP's decision regarding the recommendation of the place and amount of therapy. In this section, three factors that may influence the decision making of SLPs will be described. These are: child, workplace, and SLP characteristics.

##### *Child Characteristics*

According to ASHA (2000), no single service delivery model should be utilized for speech and language services within a school setting. ASHA defines service delivery as three elements: nature (direct versus indirect), type (individual versus group) and location. Paul (2007) incorporates these components as well as

including the amount of time students participate in intervention when defining service delivery. The amount of time, the place, and the type of intervention in which a child participates should be determined by the child's needs (ASHA, 2000). In addition, these determinations should be "based on the need to provide a free, appropriate public education for each student in the least-restrictive environment" (p. 32). More specifically, ASHA (2000) recommends the following considerations be taken into account when making decisions regarding the type, place and amount of intervention a child will receive in the schools.

1. The child's strengths, needs, and emerging abilities.
2. The need for peer modeling.
3. The child's communication needs in relation to his/her general education curriculum.
4. The nature and severity of the child's disorder.
5. The motivation and attitude of the child.
6. The child's age and developmental level.

The latter six factors focus on the child and the child's needs and diagnosis. These factors (as described in Appendix A) are consistent with ASHA's recommendation and IDEA's 2004 mandate that an array of speech, language and hearing services be available for children within the public school setting.

#### *Workplace Characteristics*

Workplace characteristics may also influence the type of service delivery a child receives. Workload size, caseload size, administrative support, and team input are all components of the workplace and can all influence an SLP's decision-making. ASHA (2002a) defines workload as including all activities that an SLP completes as part of the job. These duties include direct intervention to students as well as



meetings, paperwork, professional development, and other requirements needed to provide the necessary supports so that students can be successful. In contrast, an SLP's caseload includes the direct and indirect services provided for students that the SLP has on an Individualized Education Plan (IEP) or Individual Family Service Plan (IFSP) (ASHA, 2002a). Both the caseload and workload size of a school SLP has been shown to impact the type of service delivery utilized (ASHA, 2000; ASHA, 2006; Dowden, Alarcon, Vollan, Cumley, Kuehn, & Amtmann, 2006). Data concerning the impact of workplace factors has been reported by ASHA in the 2006 Schools Survey. The survey consisted of 34 questions covering six main categories: ASHA Services and Programs, Workforce, Employment, Caseload, Bilingual Services, and Demographics. Within the caseload section, SLPs were asked to report general information regarding the number of students on their caseload, the number of students with a specified disability, and the number of hours they work each week providing services in varying environments. Additionally, they were to provide information regarding the number of individual versus group intervention sessions conducted each month. No information was gathered regarding the SLP's place for delivering services or how often students participated in speech and language intervention. Of the 4,140 surveys that were randomly distributed to ASHA members working in the schools, 2,561 surveys (64.9% response rate) were returned and included in the summary. The findings indicated that, on average, SLPs had a caseload of 50 children.

More recently, the 2008 ASHA Schools Survey was published which also evaluated current practices within the public schools. This 34 question survey evaluated eight categories: ASHA Services and Programs, Workforce, Employment and Earnings, Caseload, Bilingual Services, Private Practice, Ethics and Demographics. Questions exploring the method used to determine their caseload size, their average caseload size, number of students with a specified disability, the severity of the students' disabilities, the place where intervention is provided, and the amount of time the SLPs spend on intervention and other activities were asked within the caseload section of the survey. This new survey did not have questions inquiring about the use of individual versus group intervention as well as the amount of time students participated in intervention. ASHA mailed 4,130 surveys. Of these, 133 were not completed due to incorrect mailing addresses or other reasons making the potential participants ineligible. Therefore, from a pool of 3,977 surveys, 2,556 (64% response rate) were returned and included in the analyses. The average caseload was found to be 50 and ranged from 2 to 290. By state, the average caseload size varied from 75 in Indiana to 33 in North Dakota. Twenty-two of the 35 hours spent providing intervention on average each week employed a traditional out-of-the-classroom intervention.

There has only been one study that has evaluated the relationship between SLP caseload size and service delivery decisions. Dowden, Alarcon, Vollan, Cumley, Kuehn, and Amtmann (2006) asked all SLPs who were registered with the Office of the Superintendent of Public instruction in the state of Washington to complete a

survey regarding their caseload and workload. The researchers sent a survey to 984 SLPs in 2001 and a brief follow-up survey to 977 SLPs a year later. A total of 421 of the original questionnaires (43% response rate) which were sent in 2001 were returned. In comparison, 464 responses (47% response rate) were obtained on the brief follow-up sent the following year. The SLPs provided information about their caseload size, the type of intervention they provided (e.g., group versus individual), and the number of children on their caseload with a severe language disorder. The authors defined a severe language disorder as being those children on their caseload who were nonverbal. The researchers found that the average caseload was 59 students after adjusting for the SLPs' full-time equivalent status. The authors found that there was no significant difference in the size of a clinician's caseload depending on the amount of SLP experience. In addition, there was no significant difference associated with the caseload size and the number of children served with severe impairments. A significant difference was observed in relation to the amount of experience clinician's had and the number of students with severe disabilities on their caseload. Clinicians with fewer years of experience working in schools had more students with severe language disorders as compared to clinicians with more experience. In addition, a significantly greater number of group interventions were utilized by clinicians with large caseloads as compared to those with small caseloads. These findings replicate the findings of ASHA (2002b, 2006) that the type of intervention (group versus individual) in which students receive speech and language intervention is related to the size of the SLP's caseload while also providing more information regarding the

impact of caseload size and the number of children with a severe disability on a clinician's caseload. However, this study as well as the others did not evaluate other factors such as the clinician's training, professional development activities, the support of administrators, and other workload responsibilities such as pre-referral interventions.

Large caseloads as well as new legislation (IDEA, 2004; NCLB, 2001) often result in large workloads because of an increase in paperwork and planning required. In 2004, ASHA conducted a school survey of 4000 randomly selected school SLPs. A total of 2,692 surveys (69.7% response rate) were returned and included in the analysis. For SLPs working in elementary schools, 42% reported an increase in pre-referral activities associated with the newly implemented response to intervention model. Forty-five percent of secondary school clinicians reported an increase in paperwork as a result of NCLB. These activities result in larger workloads for school SLPs. However, the impact of workload size on decision making has yet to be studied.

Another component within the workplace which impacts the place and amount of time a child participates in therapy would be the input of the child's school intervention team. The child's intervention team often includes persons such as the child and his/her parents, general education teacher, principal, special education teacher, speech-language pathologist as well as others. For example, the SLP's relationship with other teachers and administrators can impact where a child is seen. Depending on whom a child's classroom teacher is and the SLP's ability to develop a

collaborative relationship, a collaborative or classroom-based intervention may or may not be the best place for intervention.

The support of administrators is also a factor that can impact whether a variety of service delivery models are employed in addition to the traditional outside-of-the-classroom model that is most commonly associated with speech and language intervention (Praisner, 2003; Salisbury, 2006). Praisner (2003) surveyed principals regarding their attitude towards inclusion of students with disabilities, training, experience, and the placement of their students receiving special education services. A total of 750 surveys containing 28 questions were sent to elementary principals in Pennsylvania with 408 (return rate of 54%) being returned and included in the analysis. Of those who completed the questionnaire, 21.1% were identified as having a positive attitude toward inclusion, 76.6% had a neutral attitude and 2.7% had a negative attitude toward inclusion. The author found that principals with a more positive attitude were significantly more likely to have students participate in special education services that were more inclusive. For instance, a principal who viewed the inclusion of children within the general education classroom as being positive had more students with severe disabilities participating in the general education curriculum for a greater portion of the day. In addition, a child's disability was observed to impact the place where services were provided. Children with severe emotional disorders, autism/pervasive developmental disorder, mental retardation/developmental delay, multi-handicaps, and neurological impairments were more likely to participate in services outside of the general education classroom as

reported by the principals on the questionnaire. However, the author defined regular education placement as occurring when a child participates in 75% or more of the general education curriculum. Therefore, it is possible that children receiving only speech and language services would participate in their intervention outside of the general education classroom but be considered as having a regular education placement since greater than 75% of their day was within the general education classroom. Nonetheless, the author found that the principal's attitude toward inclusion impacted the place where children received services.

Similarly, Salisbury (2003) noted that schools with greater administrative support and commitment to intervention within the least restrictive environment were more likely to provide special education services within the general education classroom. Using a combined quantitative and qualitative approach, the author reviewed school records and interviewed eight administrators at nine different elementary schools in three different states (Missouri, Pennsylvania, and Illinois). After reviewing the school records and interviewing the principals, the researcher found that the schools that had stronger administrative support provided more children special education services within the general education classroom. Based on these few studies, there would appear to be a positive relationship between administrative support and integration of special education students into the general education classroom. In contrast to the impact of administrator support, there have been no studies to determine the relationship between school intervention teams and decisions regarding the amount of time or place that a child participates in therapy.

### *SLP Characteristics*

SLP characteristics are a third variable that can influence service delivery decision-making. An SLP's clinical training and their relationship with co-workers may impact decisions of where intervention takes place and for how long. Zipoli and Kennedy (2005) completed a survey of SLPs and found a positive relationship between a clinician's training during the clinical fellowship year and the use of evidence-based practice. However, no studies have directly evaluated the impact of a clinician's clinical training during graduate school, their clinical fellowship year, or professional development and the choice of where and how often to provide intervention for students with speech and language delays.

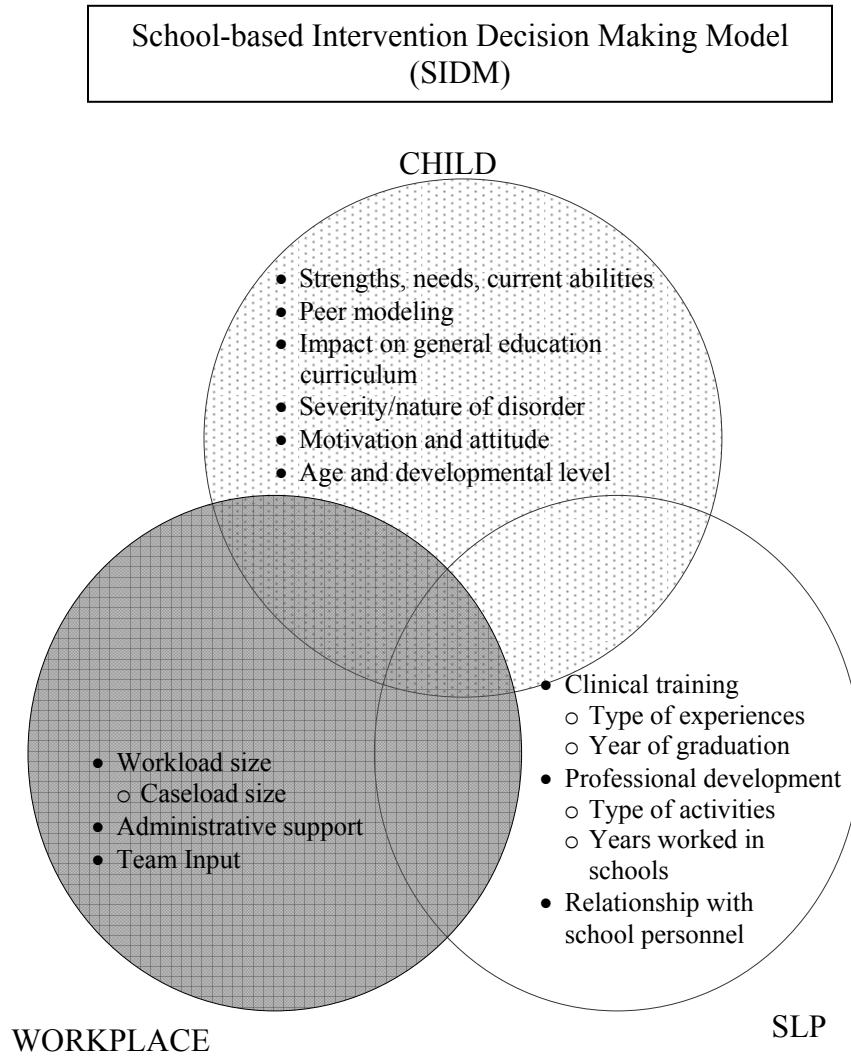
Similarly, no studies have evaluated the impact of an SLP's relationship with other school personnel. However, experts such as Paul (2007) note that the clinician's relationship with other school professionals may impact decisions regarding how often and where to provide intervention. Others have also observed the process through which school professionals evolve when working together toward the common goal of providing special education services (Friend & Cook, 2007; Peña & Quinn, 2003). These experts have indicated that the stage of the relationship between two school professionals can impact their ability to work together. As a result, these professional relationships may impact the place and amount of time that a student participates in intervention.

Currently, no theory or model is available that predicts how school SLPs determine how often and where a child participates in intervention. Three factors,

child, workplace, and SLP characteristics have been presented as measures that might account for the decisions that SLPs make regarding service delivery. Figure 1 illustrates this three-part model, hereafter referred to as the School-based Intervention Decision-Making (SIDM) Model. Unfortunately, there have been no studies conducted that illuminate which factors in the SIDM Model are most and least taken into consideration. The impact of these factors on the decisions made by SLPs regarding the place and time that children participate in intervention within the school setting is important to understand in order to ensure that effective services in the least restrictive environment are being provided as mandated by IDEA (2004).



Figure 1



### *Current SLP Practice in the Schools*

As stated earlier in the Introduction, the small amount of data that exists concerning SLP practices in the schools has been collected by ASHA via the NOMS and the School Survey. Results of the NOMS data published in the ASHA Workload Analysis Technical Report (2002b) found that two-thirds of students receiving speech and language services in the schools were seen twice a week. Of those seen twice a week, 75% participated in 21-30 minutes of intervention. Ninety-two percent of students received speech and language intervention outside of the classroom regardless of the child's diagnosis. However, the NOMS data did not evaluate the impact of a child's disability when reporting the findings.

In the 2006 ASHA Schools Survey, the participating SLPs were representative of the ASHA certified SLPs who work in the schools in regards to ethnicity (97% non-Hispanic), gender (97% female) and race (95% in the survey, 94% of ASHA-certified, school SLPs). The SLPs who completed the survey reported that 75% of school speech and language intervention was provided outside of the general education classroom. In addition, the majority of intervention was delivered in a group setting as opposed to individually.

In the ASHA School Survey (2008), reporting SLPs were representative of the population of ASHA-certified, school-based SLPs in regards to ethnicity (97% non-Hispanic), gender (97% female respondents on the survey versus 98% female ASHA-certified, school-based SLPs), and race (95% respondents on the survey versus 96% ASHA-certified, school-based were White). In contrast, the responding SLPs did

differ from the population of ASHA certified SLPs who work in the schools in the type of school they served. Fifty-eight percent of the respondents on the ASHA 2008 survey reported working in elementary schools as compared to 47% of the SLPs working in the schools with ASHA certification. In addition, 16% of the respondents were described as being employed in combined school settings as compared to 26% of the ASHA-certified, school-based SLPs. Lastly, the respondents were primarily service providers and had on average 17 years experience working in the schools as compared to the 10 year mean for SLPs with ASHA certification working in the schools. The reporting SLPs described 22 out of 35 hours of school speech and language intervention was provided outside of the general education classroom on average. In addition, SLPs reported the use of a caseload approach (use of only the number of students) versus a workload approach (use of number of students served and other additional duties) when determining the number of students served.

These latter surveys suggest that there is a lack of heterogeneity of service delivery with respect to the amount of intervention and the location of intervention in the schools. The 2008 ASHA Schools Survey did not provide any information regarding the proportion of group intervention sessions as compared to individual intervention sessions. Unfortunately, the ASHA surveys do not provide insight on which of the factors in the SIDM model might be influencing SLPs to use primarily the same place and time for intervention services (i.e., outside classroom for 20-30 minutes per week). In the following section, the limited evidence evaluating the place and amount of time that intervention is provided is reviewed.

### *Research Evaluating Service Delivery*

The study of intervention efficacy in the schools is in its infancy, with an initial focus on what types of interventions might work best. However, there are a few studies that have been conducted that have specifically evaluated service delivery options such as the best place to provide intervention or for how long. Only two studies to date have evaluated the effect of therapy place for school age children. Recent NOMS data has indicated that treatment provided in individualized settings resulted in greater functional communication gains as compared to less frequent and/or group interventions (ASHA, n.d.a). ASHA determines functional communication gains based upon a seven-point scale that is designed to evaluate the change in a child's ability to communicate by comparing pre-intervention scores for a child to post-intervention scores. These scores are determined by an ASHA certified SLP. Although NOMS is an important first step in efficacy research for the schools, the NOMS data must be interpreted cautiously. Because the NOMS data is gathered on a voluntary basis from ASHA members, it may not be reflective of the practices of the majority of SLPs. In addition, the gains reported by SLPs in NOMS were based on a qualitative scale and information was not available regarding the calibration of the reporting SLPs in regards to their use of the functional scale for reporting student gains.

A study designed to evaluate the delivery of vocabulary instruction in three different places was conducted by Throneburg, Calvert, Sturm, Paramboukas, and Paul (2000). This study compared the vocabulary growth of 177 students in

kindergarten, first, second and third grades. The children participated in one of three different intervention approaches. The first was a collaborative approach that involved both the teacher and SLP working together to plan and implement vocabulary lessons in the general education classroom. The second approach involved a classroom-based intervention model in which the SLP provided instruction to the general education class but without the shared planning or assistance of the classroom teacher. The last intervention was provided outside of the general education classroom. All three interventions utilized the same lesson plans and materials. Children in both the collaborative and classroom-based approaches received the intervention once a week for 40 minutes. The children receiving speech and language services also participated in a 15 minute individual or small group intervention outside the classroom as well for a total of 55 minutes of intervention a week. The children in the traditional outside the classroom intervention participated for an average of 50 minutes a week.

The authors found that significant gains in vocabulary growth were observed by all three intervention approaches. However, both the children receiving speech and language intervention and their typical peers made greater gains in their classroom vocabulary targets with the collaborative approach as compared to the other service delivery models. These results would indicate that when targeting vocabulary skills for children in early elementary school a collaborative intervention approach may result in the greatest gains.

Because of the lack of evidence-based data, school SLPs might rely on lower levels of evidence such as the recommendations of experts to guide their decision-making. In regards to language intervention, Paul (2007) discusses the selection of the service delivery model as being impacted by multiple factors. She states that the child's age, goal, and the type of intervention being used affects the place where intervention may be most effective. For instance based on Throneburg et al. (2000), when targeting vocabulary, the clinician may decide that a collaborative model will be best in order to increase the use of targeted words outside of the intervention.

For phonological intervention, Kamhi (2006) and Tyler (2005) recommend selecting the place and amount of time to work with a child depending on the child's goal and the purpose of the intervention. For instance, Tyler indicates that a child who is working on correct production in isolation may benefit from having one-on-one intervention outside of the classroom. In contrast, a child's production of sounds within conversation may best be targeted within the general education classroom.

Just as the place for intervention can vary among children, the use of group or individual intervention as well as the amount of time can also differ. Kamhi (2006), Paul (2007) and Tyler (2005) all recommend that decisions regarding the amount of time for intervention should be impacted by the same characteristics that were discussed in relation to the place for providing therapy.

#### *Rationale and Research Questions*

The ASHA 2006 School Survey and NOMS provide basic descriptions of the amount of time and place in which SLPs currently provide intervention services.

Additional information regarding the impact of caseload size and place of intervention has been garnered through other studies (Dowden et al., 2006; NOMS, n.d.a.). However, the information from these latter surveys is limited in that they do not allow one to evaluate which factors are associated with the SLP's decisions regarding the location and amount of intervention. The purpose of this study was to examine the three factors in the SIDM model that might impact the intervention decisions made by school-based SLPs using a survey method. Specifically, three questions were asked:

1. What is the opinion of SLPs with respect to the impact of SLP, workplace, and child factors when making decisions about time and place for service delivery?
2. What are the child factors (severity, grade level, and disability) associated with time and place of service delivery?
3. Which of the SLP and workplace factors are the best fit for the SIDM model?

### *Predictions*

1. What is the opinion of SLPs with respect to the impact of SLP, workplace, and child factors when making decisions about time and place for service delivery?

Research would indicate that caseload size impacts the SLP's decisions regarding the amount of time and place that students participate in therapy. However, no information is available regarding the SLP's opinion regarding the components of the SIDM model and their delivery of services within the schools.

2. What are the child factors (severity, grade level, and disability) associated with time and place of service delivery?

According to the NOMS data, caseload size impacts an SLP's ability to individualize student intervention, but it is unknown what the impact is for the child factors in regards to the amount of time or place that students participate in intervention.

3. Which of the SLP and workplace factors are the best fit for the SIDM model?

According to the NOMS data, caseload size impacts an SLP's ability to individualize student intervention, thus workplace should play a role, but it is unknown if that role will be greater than child or SLP factors.



## Method

### *Participants*

A total of 9,868 SLPs were identified to receive an invitation to participate in a survey via email that evaluated their service delivery decision-making. The participants for this study were Speech-Language Pathologists (SLPs) currently working in the public schools who had their Certificate of Clinical Competence. The SLPs were randomly selected from each of the 50 states and the District of Columbia using the ASHA website membership directory. According to the 2007 ASHA membership information, there were a total of 89,062 SLPs who were members. Fifty-five percent (49,340) of these SLPs were currently working in the schools. Twenty percent of these SLPs were randomly selected to participate in the school survey for a total of 9,868 participants. This number was approximately twice the 4,140 randomly selected participants who completed the 2006 ASHA School Survey.

SLPs from each state were randomly selected. The number of SLPs chosen to participate was based upon the percentage of the U.S. population within each state. According to the 2000 United States' census information, there were 281,421,906 persons living in the United States. Appendix B provides the population of each state, that state's percentage of the United States' population, and the number of SLPs that were selected from that state based upon its percent of the American population. The SLPs were identified using randomly selected zip codes from each state until the specified number of SLPs from that state were identified.

Of the 9,868 potential participants, 8,246 remained after eliminating the 458 persons who utilized the option of being eliminated from the survey pool and the 1,164 SLPs who were either no longer employed in the public schools or did not have a current email address. A total of 1,897 SLPs completed the survey. This resulted in a 23.01% response rate. Response rates typically average between 20 and 24% for web-only surveys (Sax, Gilmartin, & Bryant, 2003).

*SLP Characteristics*

In regards to clinical training, the participating SLPs had worked in the schools for an average of 15 years (SD = 9.09 years) and had graduated in 1991 (SD = 9.3 years) (See Table 1). During graduate school, 92.1% of the SLPs had provided intervention in individual sessions outside of the classroom and 87.5% had utilized group intervention sessions outside of the classroom. In contrast, 24.2% had provided intervention within the elementary classroom using a shared teaching approach as noted in Table 2. CFY instruction was most likely to include general suggestions with 48.2% of SLPs selecting this option (See Table 3).

Table 1  
SLP Characteristics

	N	Mean	Standard Deviation
Year(s) Worked in Schools	1851	15.17	9.09
Year Graduated	1644	1991.07	9.3

Table 2  
SLP Characteristics: Full-time versus Part-time

	Response Frequency	Response Count
Full-time	80.9%	1534
Part-time	18.7%	354
Total		1888

For professional development activities, the majority of SLPs who completed the survey had attended seminars (92.2%), participated in district training activities (87.9%), read journal articles (85.6%), or attended a state conference (67.8%) (See Table 3). In addition to traditional professional development activities, SLPs were also asked to identify the person most likely to complete on-site observations of their intervention and assessment activities. These results presented in Table 4 noted that the building administrator (e.g., school principal) was selected by 46.0% of the SLPs followed by the Special Education supervisor by 23.4% of SLPs.

Table 3  
SLP Characteristics: Supervision of School-based SLP

	Response Frequency	Response Count
Building Administrator	46.0%	769
Special Education Supervisor	23.4%	391
Nobody observes me	14.3%	239
Speech-Language Pathologist (district supervisor)	12.1%	202
Other	2.7%	45
Speech-Language Pathologist (peer)	1.4%	24
Total		1670

Table 4  
SLP Characteristics: SLP Training

Clinical Training during Graduate School	Response Frequency	Response Count
Individual session outside the classroom	92.1%	1687
Group session outside the classroom	87.5%	1602
Consultation	62.8%	1150
Preschool classroom based	42.2%	773
Delivering elementary intervention in classroom but independent of the classroom teacher	32.6%	597
Elementary classroom based with shared teaching	24.2%	443
Middle and High School intervention independent of classroom teacher	21.1%	387
Middle and High School classroom based with shared teaching	8.9%	163
CFY Instruction		
General suggestions for improvement (e.g., goal writing, intervention strategies)	48.2%	914
Specific suggestions for improvement on five children or less (e.g., intervention goals, place for intervention)	19.8%	376
Specific suggestions for improvement on six or more children (e.g., intervention goals, place for intervention)	18.8%	357
No suggestions or feedback for improvement	7.7%	146
Professional Development		
Attended seminar(s)	92.2%	1743
District training(s)	87.9%	1663
Read journal(s)	85.6%	1618
Attended state conference(s)	67.8%	1282
On-line program(s)	32.9%	622
Attended national conference(s)	31.6%	597
Completed college course(s)	26.8%	507
Teleseminar(s)	24.3%	460

The relationship that participating SLPs had with their co-workers was evaluated by requesting that they report the number of classroom teachers with students on their caseload, the typical number of teachers with whom they collaborated during a week and the typical number of classrooms in which they provided intervention during a week. These results located in Table 5 indicate that on average the SLPs had students on their caseload in 15 different classrooms ( $M = 15.06$ ,  $SD = 8.79$ ). The SLPs typically consulted with 7 teachers ( $M = 7.14$ ,  $SD = 5.40$ ) each week and provided in-class intervention in an average of 2 classrooms a week ( $M = 1.88$ ,  $SD = 3.21$ ).

Table 5  
SLP Characteristics: SLP Interaction with Classroom Teachers

	N	Mean	Standard Deviation
Number of different classrooms with students on caseload	1444	15.06	8.79
Number of teachers with whom consult during a week	1381	7.14	5.40
Number of classrooms in which SLP provides intervention during a week	1490	1.88	3.21

#### *Workplace Characteristics*

Workplace characteristics were described as including information about the school, the SLPs' workload and caseload size, the support of the school administration, and the type of team input provided when making decisions regarding the amount of time to provide intervention and the place of intervention. Tables 6 through 8 contain school demographic information. SLPs from all 50 states as well as

Washington, D.C. participated in the survey. The greatest percentage of SLPs were from California (11.7%) and Texas (6.1%) with the fewest questionnaires being completed by SLPs in Alaska (0.2%), Montana (0.2%) and Wyoming (0.2%) (See Table 6). 52.7% of SLPs worked in suburban schools (See Table 7) and over half of the schools (58.4%) were reported to be Title I schools (See Table 8). Title I schools are schools in which a minimum of 40% or more of the students enrolled at the school or living in that school's area qualify as low income according to the United States Census information.

Table 6

## Number of SLP Responses to Survey by State

State	Frequency N=1,897	Percent of N
Alabama	19	1.0
Alaska	4	.2
Arizona	35	1.8
Arkansas	17	.9
California	221	11.6
Colorado	34	1.8
Connecticut	23	1.2
Delaware	7	.4
Washington, DC	8	.4
Florida	80	4.2
Georgia	64	3.4
Hawaii	9	.5
Idaho	7	.4
Illinois	87	4.6
Indiana	51	2.7
Iowa	15	.8
Kansas	26	1.4
Kentucky	29	1.5
Louisiana	29	1.5
Maine	9	.5
Maryland	32	1.7
Massachusetts	37	2.0
Michigan	90	4.7
Minnesota	49	2.6
Mississippi	21	1.1
Missouri	37	2.0
Montana	4	.2
Nebraska	18	.9
Nevada	10	.5
New Hampshire	12	.6
New Jersey	60	3.2
New Mexico	15	.8
New York	85	4.5
North Carolina	50	2.6
North Dakota	5	.3
Ohio	72	3.8
Oklahoma	21	1.1
Oregon	25	1.3
Pennsylvania	75	4.0

State	Frequency N=1,897	Percent of N
Rhode Island	10	.5
South Carolina	25	1.3
South Dakota	7	.4
Tennessee	39	2.1
Texas	116	6.1
Utah	21	1.1
Vermont	9	.5
Virginia	51	2.7
Washington	45	2.4
West Virginia	17	.9
Wisconsin	52	2.7
Wyoming	4	.2

Table 7  
Workplace Characteristics: School Demographics

	Response Frequency	Response Count
Rural	23.8%	452
Suburban	52.7%	999
Urban	23.5%	446
Total		1897

Table 8  
Workplace Characteristics: Title I School

	Response Frequency	Response Count
Yes	58.4%	1108
No	39.8%	755
Total		1863

The SLPs who completed the survey reported the greatest number of students on average being in elementary school ( $M = 36.16$ ,  $SD = 23.19$ ) (See Table 9). The fewest number of students were in high school ( $M = 8.53$ ,  $SD = 15.05$ ). The total caseload was adjusted to account for SLPs working part-time so that their caseload



sizes could be included in the average. This adjusted caseload resulted in an average caseload of 50.72 students (SD = 26.08). When asked about where their students participated in intervention, SLPs reported that on average the greatest number of students were seen in group intervention as compared to individual intervention (See Table 10). In addition, slightly more than 37 students were seen outside the classroom on average (M = 37.03, SD = 10.9) as compared to in the classroom intervention with shared teaching (M = 6.04, SD = 9.16) (See Table 10). Some SLPs reported seeing some students both within the classroom as well as outside of the classroom or individually and within groups. Therefore, the same child on their caseload may have been reported more than once depending on the type and place of their services.

Table 9  
Workplace Characteristics: Students on SLP Caseload by Grade Level

	N	Mean	Standard Deviation
Preschool	1346	9.84	12.25
Elementary	1531	36.16	23.19
Junior High	871	11.92	16.11
High School	737	8.53	15.05
Total Adjusted Caseload	1814	50.72	26.08

Table 10  
Workplace Characteristics: Average Number of Students Seen in Varying Service Delivery Models

	N	Mean	Standard Deviation
<b>Type of Intervention</b>			
Individual Intervention	1635	9.06	23.5
Group Intervention	1616	36.54	12.09
<b>Place of Intervention</b>			
Shared Teaching in Classroom	935	6.04	9.16
Students Seen in Classroom (not shared teaching)	765	4.67	8.1
Students Seen Outside the Classroom	1508	37.03	20.9
Resource Room	569	5.01	9.92
Self-contained Classroom	890	10.56	13.20

Workload activities reported by SLPs are presented in Table 11. SLPs indicated the greatest number of hours per week being spent in direct intervention (M = 21.67, SD = 8.63) followed by paperwork (M = 6.06, SD = 4.79) and meetings (M = 4.15, SD = 4.39). In order to more

Table 11  
Workplace Characteristics: Average Hours Spent on Workload Activities

	N	Mean	Standard Deviation
Direct intervention	1412	21.67	8.63
Consultation	1279	2.55	3.79
Meetings	1319	4.15	4.39
Paperwork	1323	6.06	4.79
Pre-referral intervention	1056	1.79	2.76
Supervising speech therapy assistant(s)	864	.97	3.33
Professional development	850	.96	1.39
Other	485	3.52	3.77

directly account for Tier II interventions activities, SLPs were asked to provide the average number of students as well as hours per week spent providing therapy for students not on their caseload (See Table 12). SLPs described 1.81 hours on average (SD = 3.36) being spent providing intervention for a mean of 3.52 students per week (SD = 6.95).

Table 12  
Workplace Characteristics: Tier II Activities

	N	Mean	Standard Deviation
Number of students provided Tier II interventions	1444	3.52	6.95
Amount of time spent providing Tier II interventions	1354	1.81	3.36

In addition to workload and caseload activities, SLPs were also asked to indicate the teaming model most often utilized by their school. The results found in Table 13 indicated that the majority of schools used an interdisciplinary approach (71.2%) as compared to multidisciplinary or transdisciplinary approaches. More specifically, 49.7% of the SLPs indicated that they made service delivery decisions after obtaining input from the other team members (See Table 14). Furthermore, 83.7% of the participating SLPs indicated that administration allowed them to provide intervention for an appropriate amount of time, and 91% reported their administration as permitting them to provide intervention in a place necessary for improving the child's speech and language skills (See Table 15).

Table 13  
Workplace Characteristics: Teaming Model Used

	Response Frequency	Response Count
Multidisciplinary	12.9%	211
Interdisciplinary	71.2%	1166
Transdisciplinary	15.9%	260
Total		1637

Table 14  
Workplace Characteristics: SLP Decision-Making Process for Service Delivery

	Response Frequency	Response Count
SLP independently decides	33.6%	550
Team makes decision	17.2%	282
SLP makes decision after receiving input from the team	49.1%	804
Total		1636

Table 15  
Workplace Characteristic: Administrative Support

Allow SLP to Select Appropriate Amount of Time	Response Frequency	Response Count
Yes	83.7%	1376
No	16.3%	268
Total		1644

Allows SLP to Select Appropriate Place	Response Frequency	Response Count
Yes	91.0%	1501
No	9.0%	148
Total		1649

### *Questionnaire*

A questionnaire was developed to gather more specific information regarding where SLPs provided intervention and how often children participated in intervention during a week. The final version of the survey included questions that concentrated on gathering information from three areas: (1) the characteristics of the children on the SLP's caseload, (2) the workplace characteristics, and (3) the SLP's characteristics (Appendix C). The questionnaire utilized information from the 2006 ASHA School Survey as a basis in developing disability categories and the place where speech and language services were provided. This information was expanded to incorporate more specific questions regarding their current selection of where and how often to provide speech and language intervention to children in the public schools.

#### *Development of Questionnaire*

The original version of the questionnaire had 14 questions. Four of these questions evaluated child characteristics regarding the likely place that a child would participate in intervention and amount of time depending on his/her grade and then for his/her disability. In addition to the questions evaluating the child characteristics, there were four questions regarding the workplace characteristics such as the school demographic, caseload size, hours contracted to work per week, and the use of block scheduling. The original questionnaire also contained five questions regarding the SLP characteristics such as the year the SLP graduated with a Master's degree,

number of years employed in the schools, and the type of clinical training experiences in which he/she participated during graduate school.

The remaining question on the survey comprised items from each of the three categories. Question eight requested that the SLPs rank the top five considerations when making service delivery decisions. The items listed were from an original list of seventeen items that are recommended by ASHA (2000) to be considered when making decisions regarding the place and amount of time students participate in intervention.

Many of the categories within the original survey were based upon those within the ASHA School Survey (2006). For instance, the disabilities included in questions nine, thirteen and fourteen were based upon disorders included in ASHA's survey. The options for where speech and language services were provided originated from the choices found within the ASHA survey as well. In contrast, the selections for the frequency of service delivery as well as the other questions contained within the survey were added by the author.

#### *Focus Group*

In order to obtain feedback regarding the original questionnaire, a focus group lasting an hour and a half was conducted with four SLPs. All of the participants in the focus group were selected using a convenience sampling method and currently employed in a public school in three suburban cities located in Kansas. In addition, the SLPs had a current state license as well as their Certificate of Clinical Competence (CCC). Their clinical experience ranged from one year to more than

twenty years working in the public schools. After obtaining signed consents from each participant, the SLPs were asked to complete the questionnaire which took from 15 to 20 minutes in a paper-pencil format. The author then led a discussion regarding each item on the questionnaire beginning with the instructions and proceeding through the fourteen questions. This was followed by a discussion regarding the use of a computerized format of the questionnaire on the final questionnaire instead of the paper/pencil version.

Based upon the feedback received during this discussion, the general instructions on the questionnaire were modified so that participants would know to have access to their caseload information. Other questions throughout the questionnaire required changes to the instructions to eliminate some of the ambiguity that was present when the questionnaire was completed by the focus group participants. Additional input indicated the need to provide more choices for the types of professional development completed and the amount of time students received intervention.

### *Pilot Study*

A pilot study was conducted utilizing the questionnaire developed following the focus group. The purpose of the pilot study was threefold: (1) to gather preliminary information from practicing school SLPs regarding their current school practice, (2) to evaluate the ability of the questions present on the questionnaire to answer the research questions, and (3) to observe a probable response rate.

The participants for the pilot study were selected using the ASHA website membership directory. The SLPs had their Certificate of Clinical Competence and were from Kansas and had zip codes associated with the Topeka, Lawrence, Leavenworth, and Kansas City, Kansas metropolitan area. All SLPs were listed as being school-based SLPs according to their membership information with ASHA. The search resulted in 182 possible participants. Of these, 17 completed a portion of the questionnaire, and 77 finished the questionnaire in its entirety. This resulted in a total of 94 respondents for a 51.65 percent completion rate. For the participants that completed the questionnaire, 66.3% worked in a suburban school district, 30.4% worked in an urban school district and 3.3% were employed in a rural school district. The questionnaire was distributed using the online survey engine, Survey Monkey ([www.surveymonkey.com](http://www.surveymonkey.com)). Potential respondents received three emails over a four-week period requesting their participation in the survey.

The results of this survey provided limited information regarding the impact of the child, workplace, and SLP in regards to the place and time that intervention were provided. Significant limitations were noted regarding the questionnaire's ability to evaluate many of the components of the SIDM model. Questions regarding the place and amount of time that services were provided in relation to disability and age were not asked consistently. The questionnaire was not able to assess the impact of the severity of a child's disability on the clinician's decisions regarding the place and time that intervention was provided. Workplace factors such as the clinician's workload, administrative support, and school teams were not effectively evaluated.



Lastly, the relationship of the SLPs with other school personnel was not assessed. The inability for the questionnaire used in the pilot study to evaluate these components of the SIDM model resulted in significant changes and additions to the survey.

Because of these issues, some of the questions on the survey used in the pilot study were changed and questions were added. The questionnaire was divided into three sections: 1) demographic information, 2) time, and 3) place (See Appendix C). The demographic section was followed by the sections containing questions about the amount of time children participated in services and questions regarding the place services were delivered. Twenty-one questions comprised the demographic section which included questions regarding both the workplace and SLP. A breakdown of the questions within the final version of the questionnaire can be found in Table 16.

Table 16  
Itemization of Final Questionnaire in Regards to SIDM Model

CHILD CHARACTERISTICS		Question No.	Questions
All Child Characteristics		28	Please select the top consideration in regards to the child's characteristics when deciding the AMOUNT OF TIME to provide intervention for students on your caseload.
		38	Please select the top consideration in regards to the child's characteristics when deciding WHERE to provide intervention for students on your caseload.
Strengths, needs, current abilities	Interrelated components	35	For each of the following disabilities please select the time that you or your assistant deliver intervention for the child on your caseload with the MOST SEVERE DISABILITY Please answer for ONLY those disabilities represented on your caseload.
		36	For each of the following disabilities please select the time that you or your assistant deliver intervention for the child on your caseload with a MODERATE DISABILITY. Please answer for ONLY those disabilities represented on your caseload.
Severity and nature of disability		37	For each of the following disabilities please select the time that you or your assistant deliver intervention for the child on your caseload with the LEAST SEVERE DISABILITY. Please answer for ONLY those disabilities represented on your caseload.

CHILD CHARACTERISTICS		Question No.	Questions
		45	For each of the following disabilities please select the place that you or your assistant deliver intervention for the child on your caseload with the MOST SEVERE DISABILITY listed below. Please answer for ONLY those disabilities represented on your caseload.
Impact on general ed.		46	For each of the following disabilities please select the place that you or your assistant deliver intervention for the child on your caseload with a MODERATE DISABILITY listed below. Please answer for ONLY those disabilities represented on your caseload.
		47	For each of the following disabilities please select the place that you or your assistant deliver intervention for the child on your caseload with the LEAST SEVERE DISABILITY listed below. Please answer for ONLY those disabilities represented on your caseload.
Peer modeling		26	For the students on your caseload, how many were impacted in regards to the AMOUNT OF TIME intervention is provided due to a need for peer modeling?
		27	For the students on your caseload, how many were impacted in regards to the PLACE intervention is provided due to a need for peer modeling?

CHILD CHARACTERISTICS		Question No.	Questions
Motivation/attitude		24	For the students on your caseload, how many required you to adjust the AMOUNT OF TIME students participate in intervention due to factors associated with the student's motivation to take part?
		25	For the students on your caseload, how many required you to adjust the PLACE that the student participates in intervention due to factors associated with the student's motivation to take part?
Age/developmental level		32	For the following grades, please select the time that you or your assistant deliver intervention for the child on your caseload with the MOST SEVERE DISABILITY in each of the grade levels. Please provide answers ONLY for those grades represented on your caseload.
		33	For the following grades, please select the time that you or your assistant deliver intervention for the child on your caseload with a MODERATE DISABILITY in each of the grade levels. Please provide answers ONLY for those grades represented on your caseload.
		34	For the following grades, please select the time that you or your assistant deliver intervention for the child on your caseload with the LEAST SEVERE DISABILITY in each of the grade levels. Please provide answers ONLY for those grades represented on your caseload.

CHILD CHARACTERISTICS		Question No.	Questions
		42	<p>For the following grades, please select the place that you or your assistant provide intervention for the child with a SEVERE DISABILITY in each of the grade levels.</p> <p>Please provide answers ONLY for those grades represented on your caseload.</p>
		43	<p>For the following grades, please select the place that you or your assistant provide intervention for the child with a MODERATE DISABILITY in each of the grade levels.</p> <p>Please provide answers ONLY for those grades represented on your caseload.</p>
		44	<p>For the following grades, please select the place that you or your assistant provide intervention for the child with the LEAST SEVERE DISABILITY in each of the grade levels. Please provide answers ONLY for those grades represented on your caseload.</p>

WORKPLACE CHARACTERISTICS		Question No.	Questions
All Workplace Characteristics		29	Please select the top consideration in regards to the workplace characteristics when deciding the AMOUNT OF TIME to provide intervention for students on your caseload.
		39	Please select the top consideration in regards to the workplace characteristics when deciding the PLACE to provide intervention for students on your caseload.
Workload size		12	Which of the following statements best describes how you determine the amount of time and the place a child will participate in speech and language intervention?
		13	Please specify the number of students seen in individual intervention sessions during a typical week.
		15	Please specify the typical amount of time spent on the following activities each week at work.
		20	During a typical week, for how many students do you provide intervention that are not on your caseload (e.g., Tier II services or children who are in the evaluation process)?
		21	How much time during the typical week do you spend providing intervention to students in the process of being evaluated (Tier II services)?

WORKPLACE CHARACTERISTICS		Question No.	Questions
Caseload size		7	Please specify the number of students on your caseload who are in the following grades.
		8	Please check the appropriate description regarding your current employment status as a school SLP.
		14	Please specify the number of students on your caseload seen in the following places.
Administrative support		22	Does your administration in the school allow you to provide speech and language services for the AMOUNT OF TIME necessary to improve the child's skills? Yes No
		23	Does your administration in the school allow you to provide speech and language services in the PLACE necessary to improve the child's skills? Yes No
Team input		10	Please select the teaming model that best matches the one used at your primary school.
		11	Which of the following statements best describes how you determine the amount of time and the place a child will participate in speech and language intervention?
Other	Demographic	6	Which of the following best describes the area which your school district serves?

SLP CHARACTERISTICS		Question No.	Questions
All SLP Characteristics		30	Please select the top consideration from the following when deciding the AMOUNT OF TIME to provide intervention for students on your caseload.
		40	Please select the top consideration from the following when deciding the PLACE to provide intervention for students on your caseload.
Clinical Training		3, 4	Please mark all of the places in which you participated in clinical training as part of your university clinic, field study site, or externship during your graduate school experience.
			Please indicate the amount of instruction and feedback you received from your supervisor during your CFY.
Experience	Grad.	1	What year did you graduate with your MA's degree in SLP?
	Yrs. Wrkd.	2	How many years have you worked as an SLP within the schools?
Professional development		5	Please indicate any of the following types of professional development which you have completed in the last 5 years NOT including graduate training.
		16	Please select the person that is most likely to conduct on-site observations of your intervention/assessments as part of your school contract.
Relationship with school personnel		17	How many different classrooms have students on your caseload? For example, an SLP who sees five first graders who are in the same classroom would have only one. In contrast, an SLP with five first graders in two different classrooms would have two.



SLP CHARACTERISTICS		Question No.	Questions
		18	How many teachers do you consult with regarding students on your caseload during the typical week?
		19	For how many classrooms do you provide intervention in the general education classroom during the typical week?

OTHER QUESTIONS		Question No.	Questions
Block Scheduling		9	For any of the children that you provide intervention, do you use block scheduling? Block scheduling is defined as when the child is seen 4 to 5 times a week for 3 to 6 weeks followed by a break for the same amount of time.
All SIDM Characteristics		31	Please select the top THREE considerations from the following when deciding the AMOUNT OF TIME to provide intervention for students on your caseload.
		41	Please select the top THREE considerations from the following when deciding the PLACE to provide intervention for students on your caseload.
Interview Participation Questions		48	Would you be willing to complete a brief (15-20 minutes) phone interview to elaborate on some of the answers you provided in the above questionnaire?

Some of the disabilities that were asked about on the pilot questionnaire were not included on the present questionnaire due to the fact that the response rate for these questions was smaller. The selected disabilities were based upon the data ASHA gathered from the 2008 School Survey. The eight disabilities that were chosen to be included were associated with speech and/or language impairments reported to occur with the greatest frequency according to the average number of students on a caseload for reporting SLPs. These were: articulation/phonological disorder, autism/pervasive developmental disorder (PDD), pragmatics/social, learning disabilities, mental retardation/developmental disability (MR/DD, nonverbal, augmentative/alternative communication, reading and writing (literacy), and specific language impairment.

In addition to the changes made as a result of the SIDM model, many of the previous changes and additions were completed as a result of feedback garnered from the written orals committee. For instance, committee members wanted additional information regarding the supervision SLPs receive within the school setting as was found in question 16. The impact of school climate on the school SLP's delivery of speech and language intervention and the SLP's role within the school was also considered an important factor that should be included in the study (See questions 10 and 11 in Table 16). The last question to be added was 48 as a result of feedback from the author's written orals committee. This question asked participants if they would be willing to complete an interview by email. From those agreeing to participate in the interview, 25 would be randomly selected. These persons were asked to respond to the questions included in Appendix C. This information was used to add specific details and clarification of the information gathered from the entire survey and assisted in providing a clearer picture of the factors impacting the SLP's decisions regarding the place and amount of time that intervention was provided.

#### *Questionnaire Validity*

In order to increase the validity of the data gathered using the questionnaire in Appendix C, steps were taken to decrease the total survey error. Dillman, Smyth, and Christian (2009) describe four potential errors which surveys must address. The first is coverage error which occurs when not everyone in a population has an equal opportunity to participate in the survey. Because the ASHA membership directory

was utilized in randomly selecting the participants, all ASHA certified SLPs had an equal opportunity to participate thereby reducing the possibility of coverage error.

Another potential concern is sampling error. This occurs when a person surveys a portion of the desired population rather than everyone. Dillman et al. (2009) state that “It is the size of the sample, not the proportion of the population sampled, that affects precision” (p. 55). Sample size not only relates to the number of persons surveyed but more importantly the number who complete the survey. Given the ASHA’s 2006 demographic profile information, 54,374 ASHA certified SLPs have their primary employment in a school. Therefore, a completed sample size of 1,087 is needed for a 95% confidence interval with a +/- 3% margin of error.

The third possible source of error is nonresponse error. Dillman et al. (2009) describe this as occurring when those who choose not to complete the survey are different from those who do. One method to reduce nonresponse error is to utilize follow-up reminders. The current study contacted participants up to four times over approximately three months prior to the questionnaire being closed. In addition, the study utilized the same follow-up reminder for all participants in an effort to encourage him/her to complete the survey while not providing more encouragement to one potential participant as compared to another.

The last potential error which was addressed was measurement error. This error occurs when inaccurate answers are obtained as a result of poorly worded questions, the type of survey mode utilized, and characteristics of the participant’s behavior. In order to minimize the potential for this error, the current survey was

conducted via the internet throughout the time it was administered. In addition, the pilot study allowed the researcher to evaluate the question format that would be used on the internet. The focus group also provided the opportunity to discuss directly the questions on the survey in order to ensure they were not confusing or misleading.

## Results

The data were analyzed using descriptive and parametric procedures depending on the research question. The specific questions to be explored were as follows:

1. What is the opinion of SLPs with respect to the impact of SLP, workplace, and child factors when making decisions about time and place for service delivery?
2. What are the child factors (severity, grade level, and disability) associated with time and place of service delivery?
3. Which of the SLP, workplace, and child factors are the best fit for the SIDM model?

Questions one and two were analyzed using descriptive statistics. This method was chosen due to the exploratory nature of the study in that little information was available in previous studies that evaluated all of these variables within the same study.

### *Research Question 1: SLP Opinion*

SLPs were asked to select the most important child characteristic, workplace characteristic and SLP characteristic contained within the SIDM model when they determine the amount of time to provide intervention for students on their caseload. In regards to the child characteristics found in Table 17, SLPs most often selected the nature and severity of the child's disorder (57.1%) and the child's communication needs (27.7%). Team input

Table 17

Considerations for Time: Child Characteristics

Question: Please select the top consideration in regards to the child's characteristics when deciding the AMOUNT OF TIME to provide intervention for students on your caseload.

	Response Frequency	Response Count
Nature and severity	57.1%	885
Communication needs	27.7%	430
Strengths and needs	11.9%	184
Age and developmental level	3.1%	48
Motivation and attitude	0.1%	2
Need for peer modeling	0.1%	1

(37.1%) and caseload size (33.8%) were most likely to be selected when provided the workplace characteristics (see Table 18). For the SLP characteristics, 55.6% of SLPs

Table 18

Considerations for Time: Workplace Characteristics

Question: Please select the top consideration in regards to the workplace characteristics when deciding the AMOUNT OF TIME to provide intervention for students on your caseload.

	Response Frequency	Response Count
Team input	37.1%	578
Caseload size	33.8%	526
Workload size	25.2%	393
Administrative support	3.9%	61

Table 19

Considerations for Time: SLP Characteristics

Question: Please select the top consideration from the following when deciding the AMOUNT OF TIME to provide intervention for students on your caseload.

	Response Frequency	Response Count
Clinical training	55.6%	829
Professional development	19.7%	294
Years worked	14.0%	209
Relationship with co-workers	10.6%	158

identified their clinical training as being the most significant factor when deciding the amount of time to provide intervention (See Table 19). SLPs were then provided with all 14 items contained within the 3 components of the SIDM model (See Table 20). These results indicated that the nature and severity of the child’s disorder (67.7%), the child’s communication needs as related to his/her general education curriculum (53%), and their strengths, needs, and emerging abilities (30.6%) were most often selected as impacting their decisions regarding time.



Table 20

Considerations for Time: Combined Child, Workplace, and SLP Characteristics  
 Question: Please select the top THREE considerations from the following when deciding the AMOUNT OF TIME to provide intervention for students on your caseload. (N=1,897)

	Response Frequency	Response Count
The nature and severity of the child's disorder	67.7%	1285
The child's communication needs in relation to his/her general education curriculum	53%	1005
The child's strengths, needs, and emerging abilities	30.6%	581
Caseload size	23.9%	453
The child's age and developmental level	23.5%	446
Team input	15.3%	291
Workload size	10.8%	204
The motivation and attitude of the child	7.7%	146
Clinical training	3.4%	64
Relationship with school personnel	3.1%	59
Administrative support	1.7%	32
The need for peer modeling	1.6%	31
Professional development	1.6%	30
Years worked	1.3%	25

In regards to the place where children participate in intervention, the SLPs were asked to identify the child, workplace and SLP characteristic that most impacts their choice of where to provide intervention. Approximately forty percent of the SLPs identified the nature and severity of the child's disorder as most often impacting their choice of where to provide intervention (See Table 21). For the workplace characteristics, the team's input was

Table 21

Considerations for Place: Child Characteristics

Question: Please select the top consideration in regards to the child’s characteristics when deciding the PLACE to provide intervention for students on your caseload.

	Response Frequency	Response Count
Nature and severity	40.5%	580
Communication needs	38.2%	546
Strengths and needs	12.5%	179
Age and developmental level	5.3%	76
Need for peer modeling	2.3%	33
Motivation and attitude	1.2%	17
Total		1431

selected by 41% of the SLPs completing the survey as noted in Table 22. Clinical training was selected by 42% and their relationship with co-workers for another 31.9% of the SLPs as being the top SLP considerations when deciding where to provide a child’s intervention (See Table 23). When asked their top 3 factors when provided the 14 characteristics within the

Table 22

Considerations for Place: Workplace Characteristics

Question: Please select the top consideration in regards to the workplace characteristics when deciding the PLACE to provide intervention for students on your caseload.

	Response Frequency	Response Count
Team input	41%	580
Caseload size	31.5%	445
Workload size	15.9%	224
Administrative support	11.6%	164
Total		1413

Table 23

Considerations for Place: SLP Characteristics

Question: Please select the top consideration from the following when deciding the PLACE to provide intervention for students on your caseload.

	Response Frequency	Response Count
Clinical training	42%	583
Relationship with co-workers	31.9%	443
Professional development	16.8%	233
Years worked	9.4%	130
Total		1389

SIDM model, SLPs again identified the nature and severity of the child’s disorder (51.9%), the child’s communication needs in relation to his/her general education curriculum (46.8%), and the child’s strengths, needs, and emerging abilities (27.6%) as being the most important features of the SIDM model that impact their choice of where to provide intervention (See Table 24).

Table 24

Considerations for Place: Combined Child, Workplace, and SLP Characteristics  
 Question: Please select the top THREE considerations from the following when deciding the PLACE to provide intervention for students on your caseload. (N=1,897)

	Response Frequency	Response Count
The nature and severity of the child's disorder	51.9%	984
The child's communication needs in relation to his/her general education curriculum	46.8%	888
The child's strengths, needs, and emerging abilities	27.6%	523
Caseload size	20.0%	379
Relationship with school personnel	16.9%	321
Team input	14.2%	270
The child's age and developmental level	14.0%	266
The need for peer modeling	6.9%	130
Workload size	6.7%	128
Clinical training	5.5%	104
Administrative support	5.0%	95
The motivation and attitude of the child	4.6%	87
Professional development	3.2%	61
Years worked	1.8%	35

*Research Question 2: Child Factors and Time and Place of Services*

The participating SLPs were asked to report on the time and place for students currently on their caseload. In addition, the survey inquired about their use of block scheduling. Of the 1,680 SLPs who completed this question, slightly more than two percent indicated they did use block scheduling for at least one student on their caseload. The results regarding the time and place students participated in intervention are presented below.

*Time by Grade*

SLPs were asked to provide the information regarding specific children on their caseload and how often that child participated in intervention. Figure 2

illustrates the amount of time the children with the most severe disability in a specified grade (e.g., preschool or kindergarten) most often participate in intervention. Children in preschool through middle school with the most severe disability most often take part in intervention 2-3 times a week for 20-30 minutes. In contrast, the most severe high schoolers participated in therapy 1 time a week for 20-30 minutes.

Figure 2

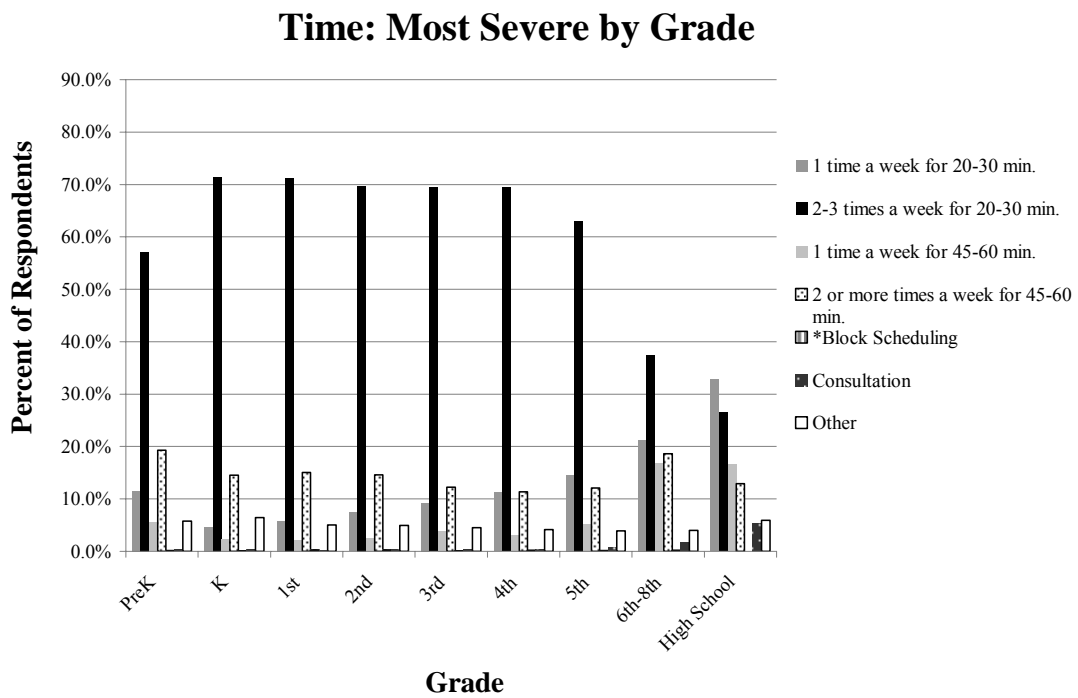
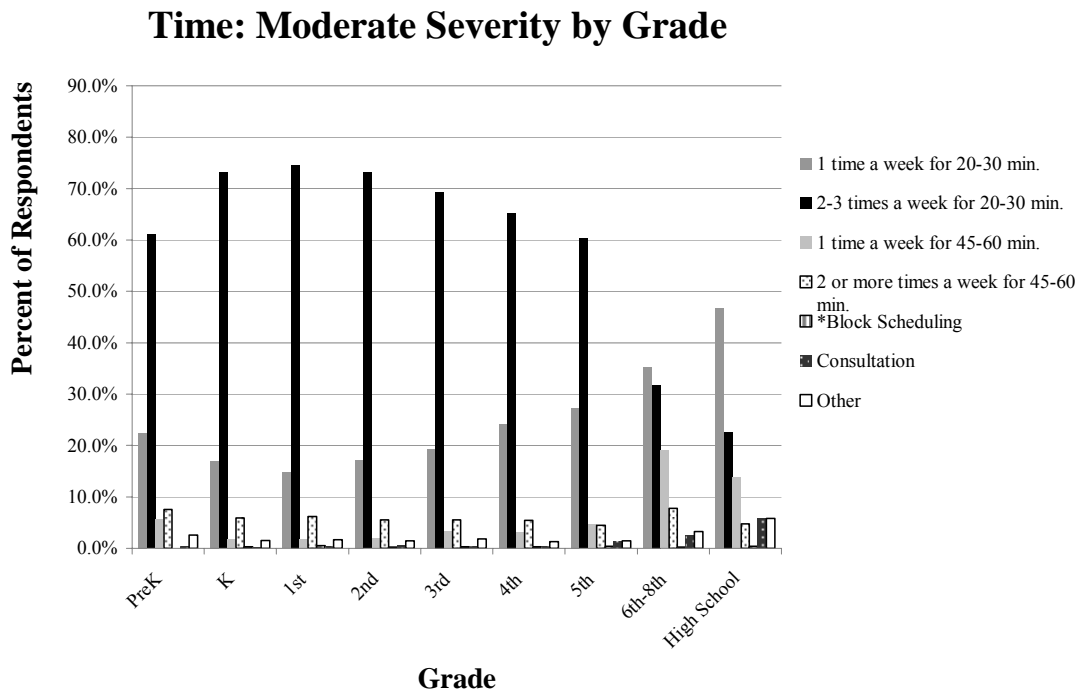


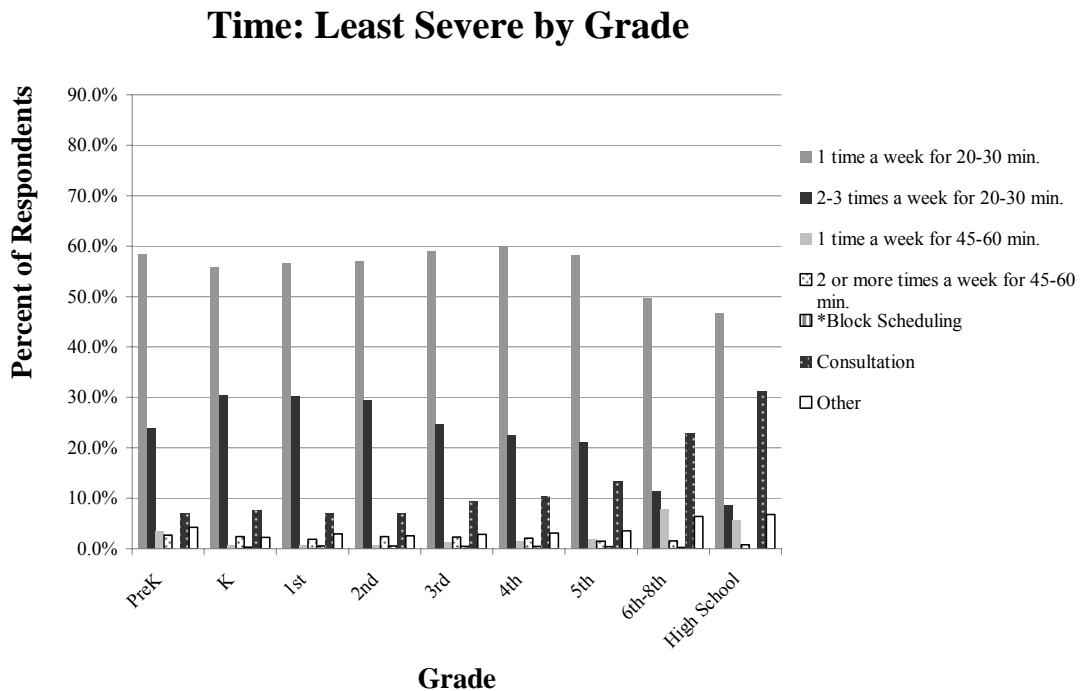
Figure 3 illustrates that for children with a moderate disability in preschool through 5<sup>th</sup> grade, SLPs most often provided intervention to their students 2-3 times a week for 20-30 minutes. Middle school and high school students with a moderate disability were more often seen 1 time a week for 20-30 minutes.

Figure 3



All students with the least severe disability currently on the caseloads of the SLPs completing the survey most often took part in therapy 1 time a week for 20-30 minutes regardless of their grade (See Figure 4).

Figure 4



#### *Time by Disability*

In order to evaluate the impact of a child’s disability, SLPs were then asked to provide the amount of time children with varying severity levels of the eight disabilities most often occurring on an SLP’s caseload as identified by ASHA (2008). Figures 5 through 7 show the responses that were provided by those completing the questionnaire. For the eight disabilities requested, children with the most severe

disability (See Figure 5) and moderate disability (See Figure 6) participated in intervention 2-3 times a week for 20-30 minutes most often. In contrast, the children with the least severe disability more often took part in therapy 1 time a week for 20-30 minutes (See Figure 7).

Figure 5

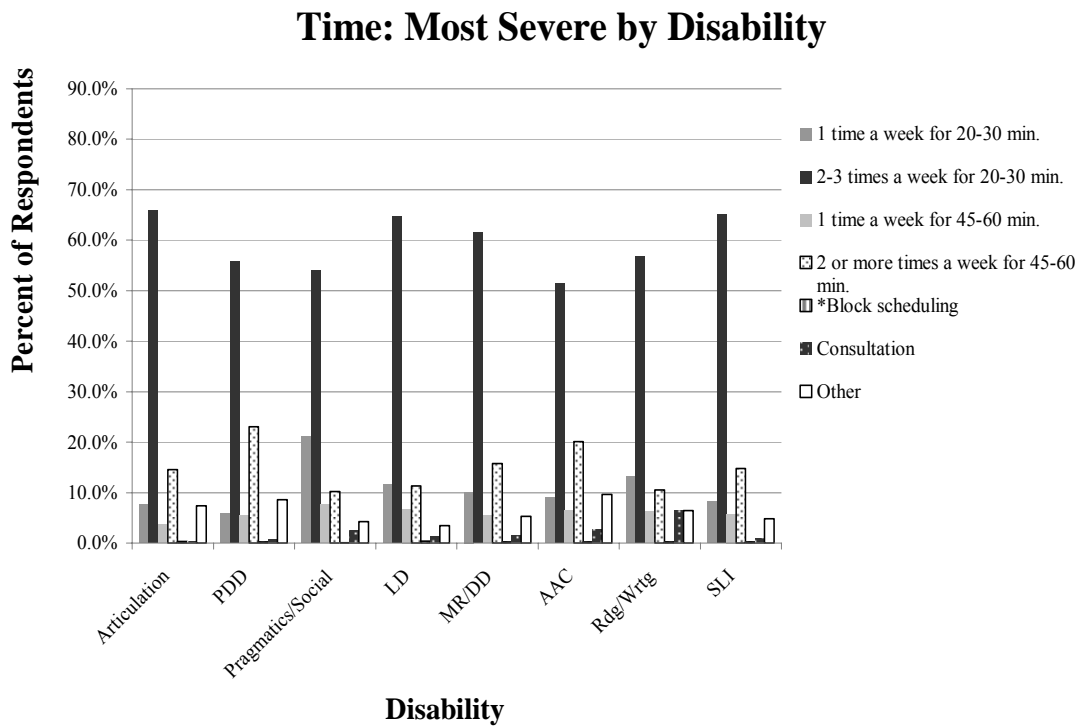




Figure 6

### Time: Moderate Severity by Disability

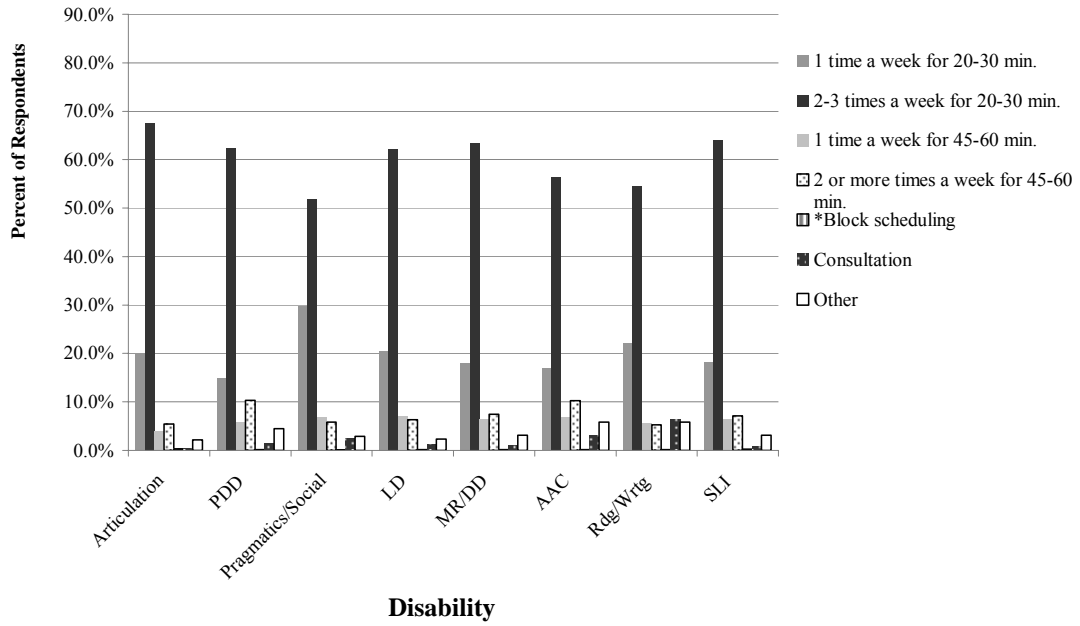
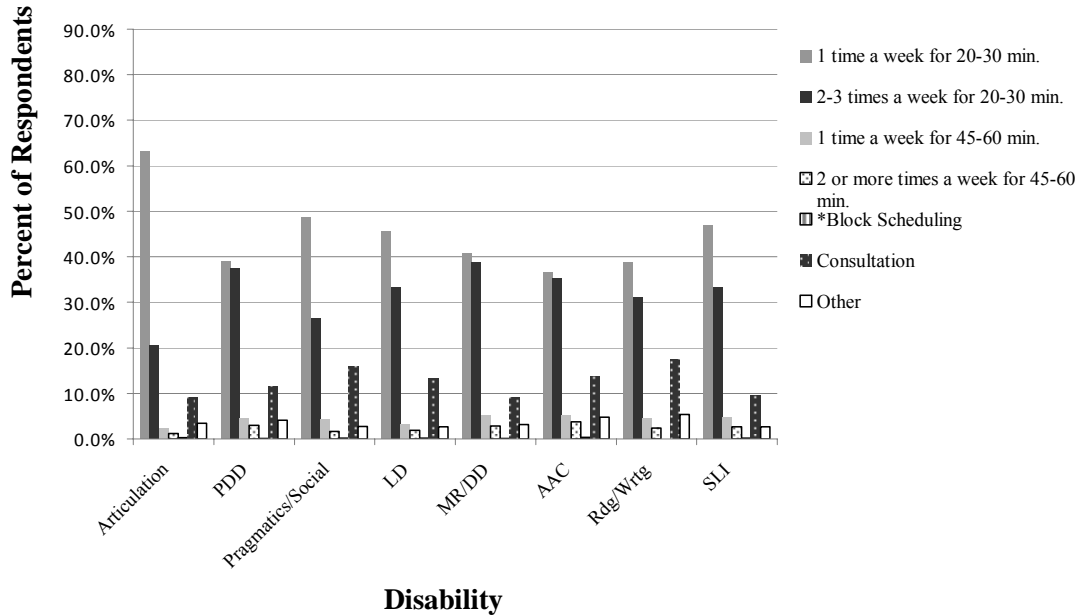


Figure 7

### Time: Least Severe by Disability



### Place by Grade

SLPs were asked similar questions in regards to the place students on their caseload participated in intervention as those previously asked as related to the amount of time therapy was provided. Figures 8 through 10 demonstrate where SLPs provide intervention for students on the caseload based upon the severity of the child’s disability and their grade. For children with the most severe disability in kindergarten through middle school, SLPs reported providing intervention in groups outside of the classroom most often. The most severe preschoolers were more likely to receive intervention 1-on-1 outside the classroom, and high schoolers with the most severe

disability were seen in either the self-contained classroom or 1-on-1 intervention outside of the classroom as observed in Figure 8. In contrast, children with a moderate disability (See Figure 9) or the least severe disability (See Figure 10) partook in therapy in groups outside of the classroom most often.

Figure 8

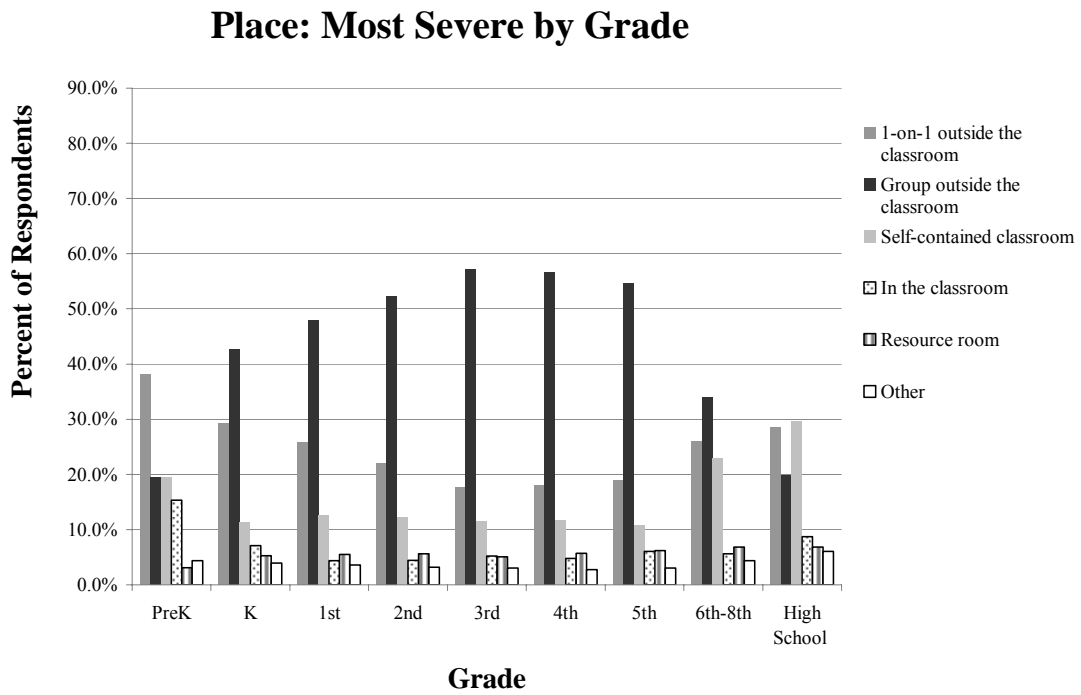


Figure 9

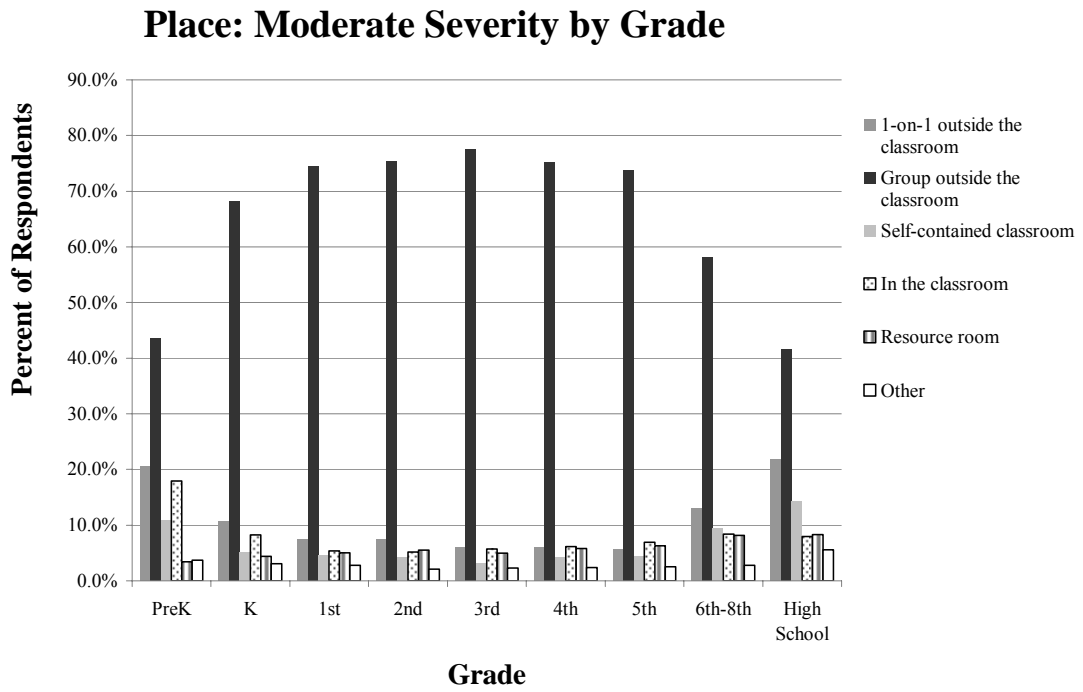
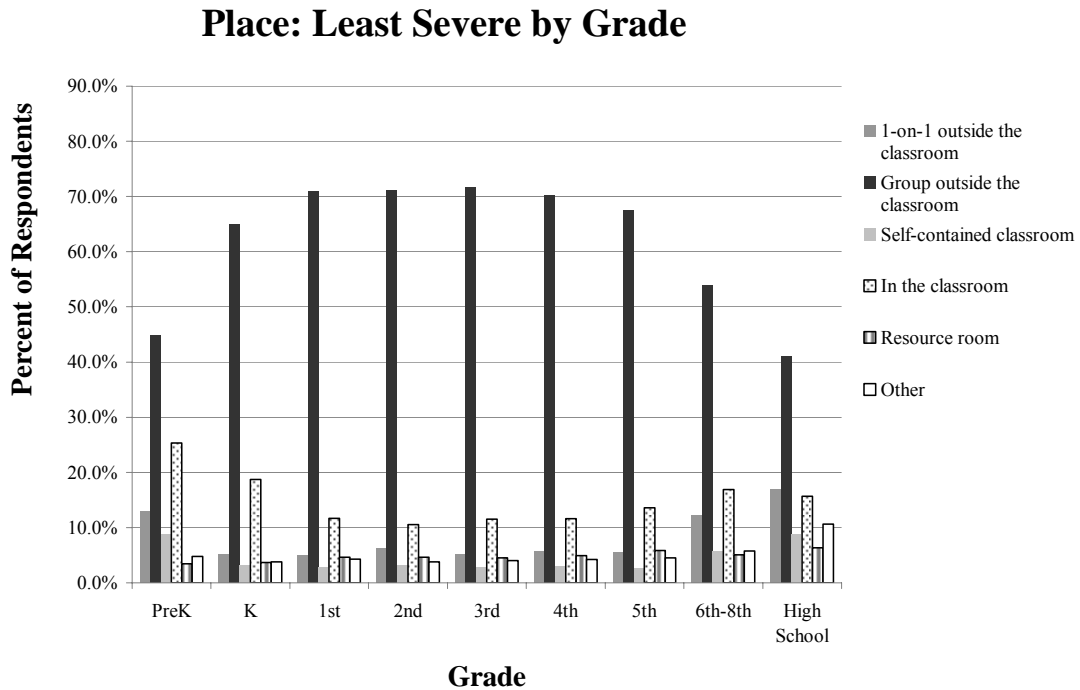


Figure 10



*Place by Disability*

In regards to the place that intervention was provided, more variation was observed when accounting for the severity and type of the child’s disability. Children with the most severe articulation disorder, PDD, or AAC more often participated in intervention in a one-on-one setting outside of the classroom. In contrast, children with the remaining disabilities were seen in groups outside of the classroom as observed in Figure 11. While some variation for children with the most severe disabilities was observed, SLPs reported that their students with moderate and least severe disabilities took part in intervention in groups outside of the classroom regardless of their diagnosis (See Figures 12 and 13).

Figure 11

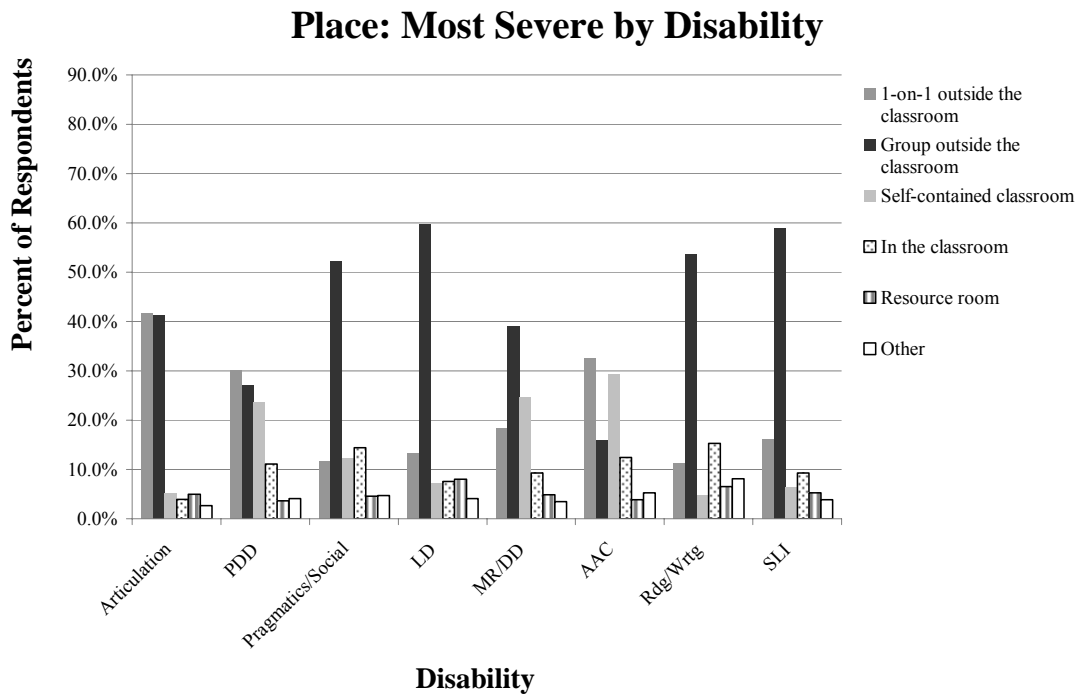


Figure 12

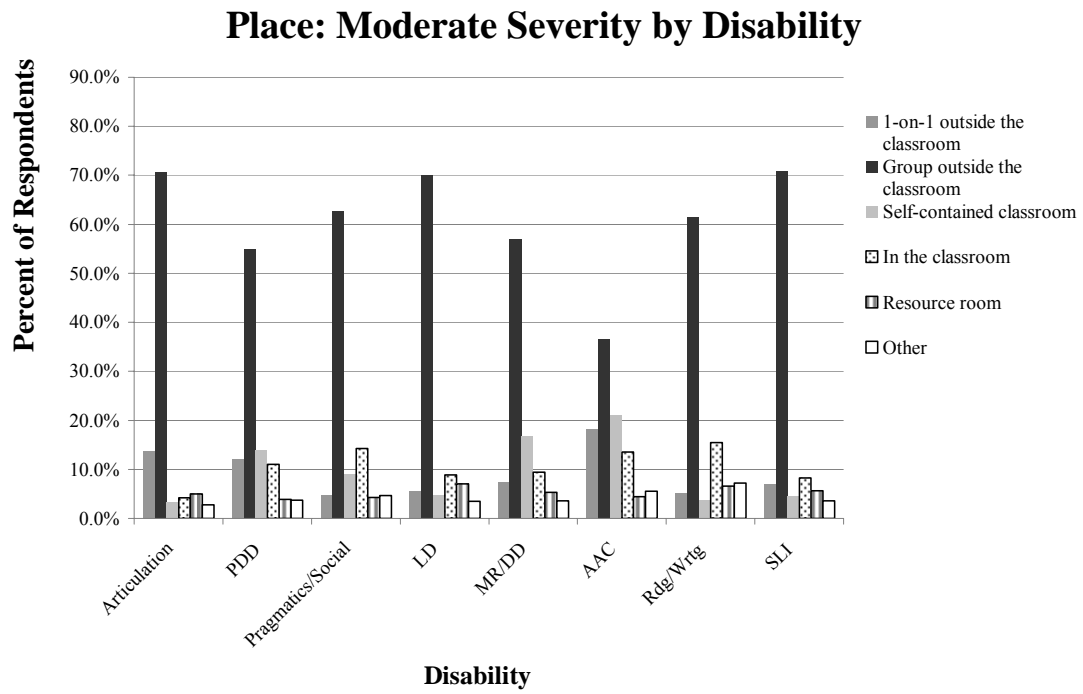
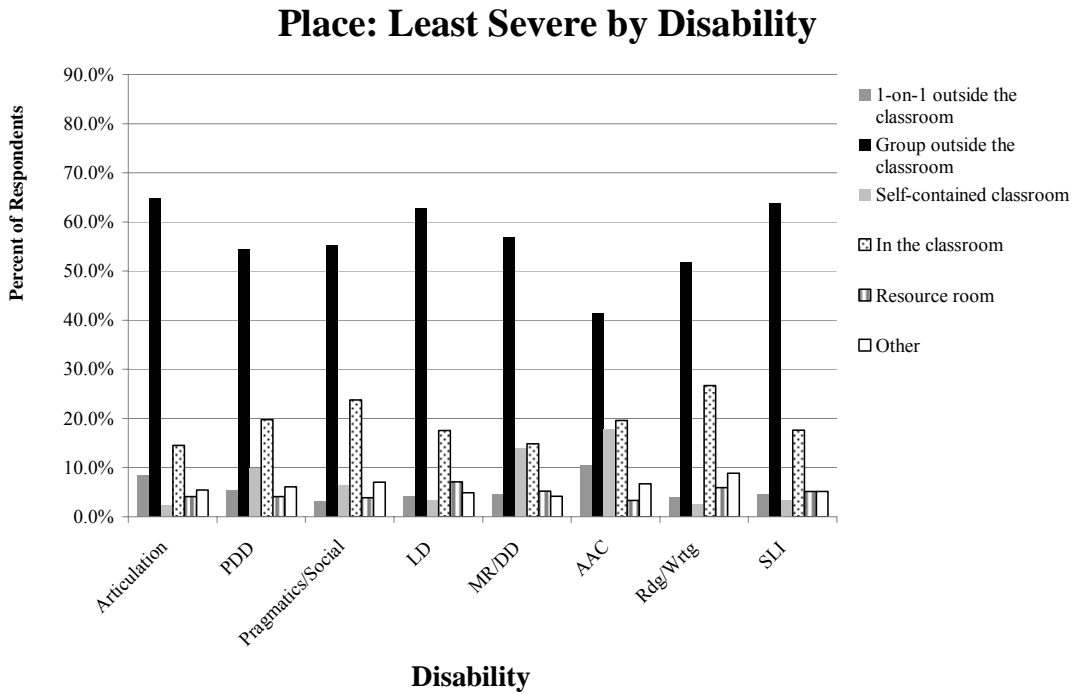


Figure 13



*Follow-up Email Interview*

In addition to the completion of the online survey, SLPs were asked if they would be willing to participate in an email interview. From those who volunteered to participate, 50 were randomly selected to complete the email interview contained in Appendix C. Of the 50 who received the questionnaire, 20 SLPs returned the completed interview. Due to the anonymous nature of the email interview, a description of the participating SLPs is not possible.

The SLPs were asked to provide their opinion as to why little variation was observed in the amount of time and place intervention was provided. Ten of the SLPs



indicated that they believed workload factors (e.g., caseload size) impacted decisions regarding the amount of time to provide intervention. Eleven of the SLPs noted that scheduling impacted decisions related to time one of whom said “I believe there are some workplace realities that affect our scheduling.” Another SLP stated that “Scheduling is very difficult because they can not be removed from class during a 90 minute reading block, 60 minute math block, lunch, PE, art, (and) music.” The difficulties in arranging times may cause SLPs to select a minimal amount of time. Another SLP stated that “a ‘seasoned’ SLP can accomplish a goal quicker...verses a new SLP to the school that is getting their feet wet.” All of these comments indicated that scheduling students was impacted by the time constraints in which the students and SLP were placed.

Five SLPs also stated their co-workers preferred this amount of time. In particular, one SLP stated that “Principals, teachers, and parents often insist that certain students receive a lot of therapy, twice a week whereas once a week would be sufficient.” Another SLP believed that SLPs had not done enough to educate school staff as to the impact of speech and language delays on a child’s ability to fully participate in his/her education.

Two of the eighteen SLPs reported that 2-3 times a week for 20-30 minutes was an appropriate amount of time. They believed this amount of time was adequate for their students to make gains. One SLP believed “a seasoned SLP can accomplish a goal quicker with a disability they are familiar treating verses a new SLP to the school that is getting their feet wet.” The other SLP said, “We have found that

children make progress with these numbers.” Their statements would indicate that there are some SLPs that believe this amount of intervention is appropriate for their students.

In regards to the place that intervention was provided, seven SLPs believed scheduling again impacted their choices about where to provide intervention. Five SLPs stated that their co-workers preferred intervention outside of the classroom. One such SLP stated that “there was a perception that services are not occurring if students are not seen in a pull-out model.” Another SLP stated that “teachers want the students out of their room.” These statements would indicate the expectation within the schools often times continues to be for students to participate in therapy outside of their general education classroom.

Their large workload and caseload was also noted to impact their choice for where to provide intervention by four of the SLPs completing the interview. Two SLPs believed that intervention within the classroom took more time. In addition, two other SLPs said that outside of the classroom intervention was more “practical.” Another SLP believed that a lack of teacher training impacted her choices of where to provide intervention while another SLP believed a lack of training for SLPs on how to provide intervention within the classroom impacted the choices made.

The results of the interview regarding why SLPs most often chose to provide intervention 2-3 times a week for 20-30 minutes in groups outside of the classroom indicated that workplace characteristics such as scheduling and caseload impacted their decisions. In addition, SLPs specified that their fellow teachers preferred these

service delivery choices. These findings were in contrast to the information gathered on the survey in which SLPs selected child characteristics most often as the factors influencing their decisions regarding the amount of time and the place to provide intervention.

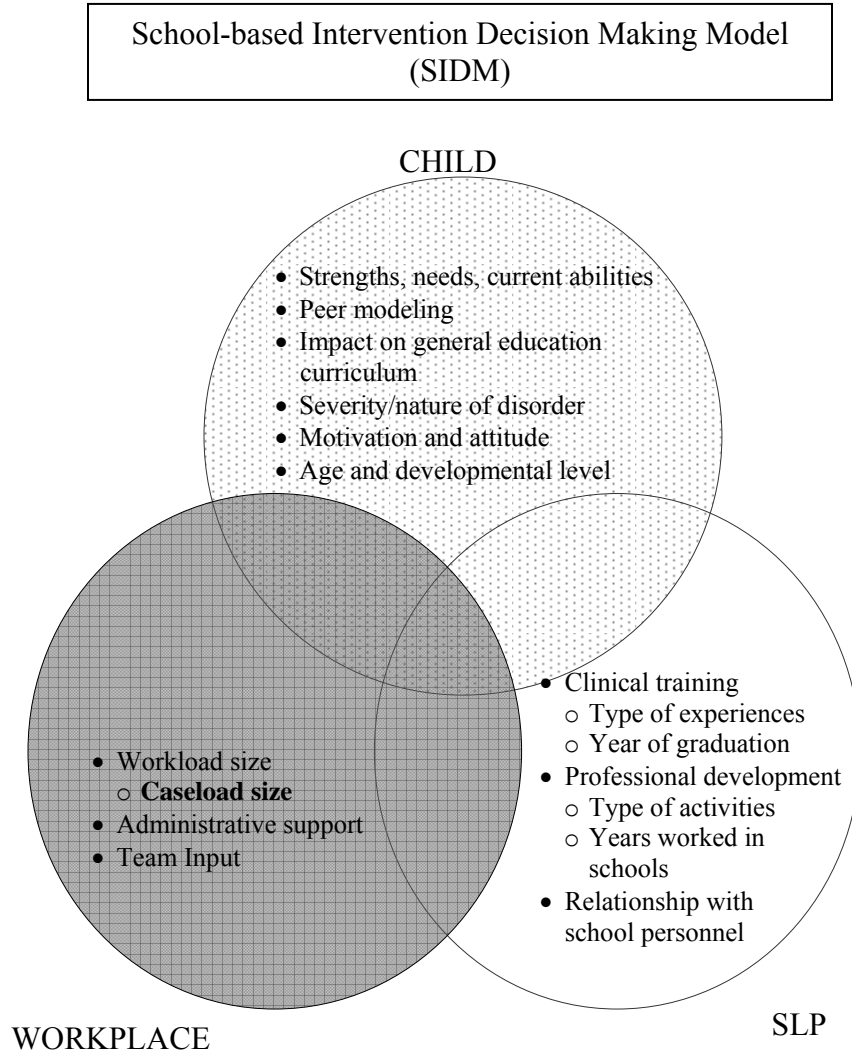
*Research Question 3: Workplace and SLP Factors and Time and Place of Services*

The lack of diversity in the amount of time and place for services in regards to the child characteristics within the SIDM model indicated the need for a further analysis of the workplace and SLP factors using a multinomial logistic regression. This analysis was selected in order to simultaneously evaluate the independent variables within each of the three components of the SIDM model while also taking into account a child's grade, disability and/or severity of the disorder. This method of analysis was chosen given its ability to evaluate categorical data (e.g., place intervention is provided) as well as numerical data (e.g., year of graduation).

Workplace factors that were evaluated within the survey were workload, caseload size, administrative support and the teaming approach used at the SLP's school(s) (See Figure 14). Caseload size was selected as a variable because of the results of previous research. In addition, this component of the SLP workload was selected because SLPs reported the majority of their time each week was spent providing intervention and would therefore, directly correspond to the number of students on his/her caseload. While caseload size was included in the multinomial logistic regression, administrative support and the SLP's teaming model used at the

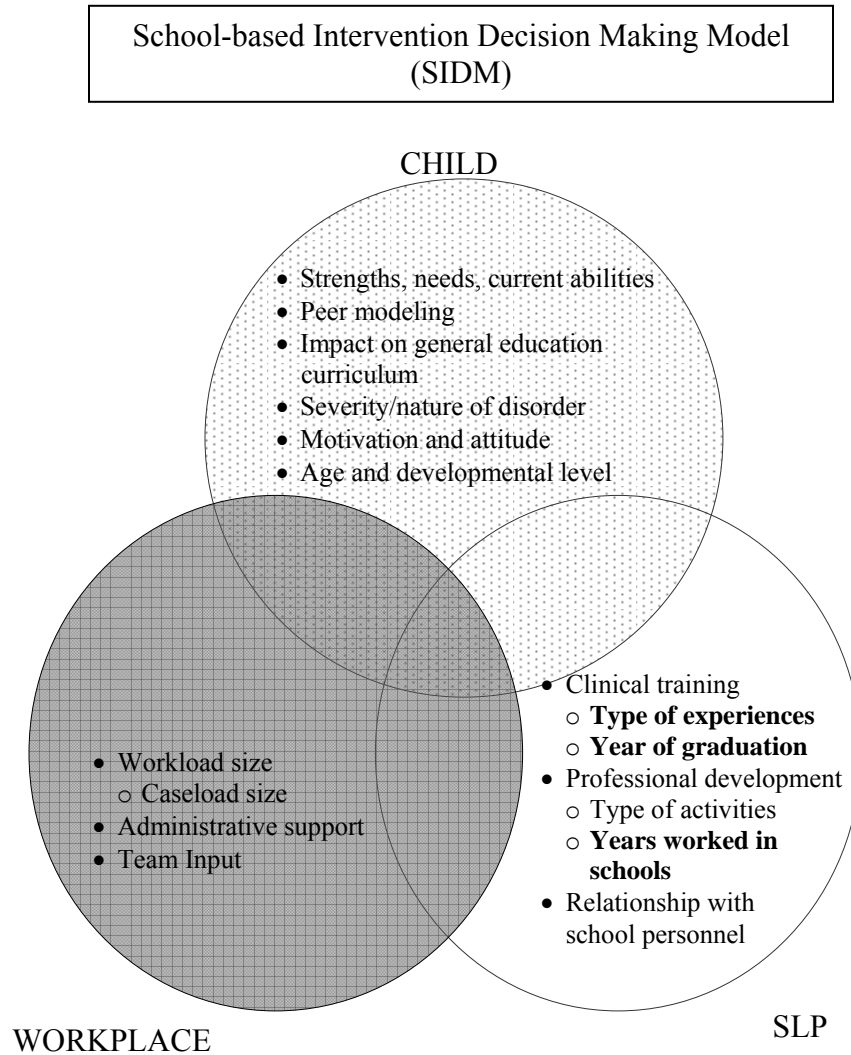
school were not included because little variation was reported on these questions within the survey.

Figure 14  
Workplace Variables for Analysis



In addition to caseload size, the SLP variables were considered for inclusion in the multinomial logistic regression. The SLP variables evaluated within the survey were their clinical training experiences during the completion of their master's degree, the types of professional development in which the SLPs had participated in the last five years, and their relationship with the other school personnel (See Figure 15). From these three components, clinical training during the SLP's graduate school training was selected for inclusion. Related to his/her clinical training, the SLP's year of graduation was also selected because of the possible relationship with the SLP's clinical training experience. Professional development was evaluated by including the number of years the SLP had worked in the schools. The SLPs reported little impact as a result of their relationship with co-workers. Therefore, this was not included in the multinomial logistic regression model either.

Figure 15  
SLP Variables for Analysis



The results for the multinomial logistic regression were completed separately in regards to the SLP’s reported decisions for the amount of time intervention was provided as well as the place they provided intervention. Within each of these groups, analyses were completed according to grade level and the disability. For both grade level and disability, the analyses were completed separately for the three severity levels: most severe, moderate severity, and least severe.

Multinomial logistic regression estimates the effects of the independent variables and the likelihood that SLPs’ decisions regarding the amount of time and place to provide intervention was impacted by the dependent variables. The analyses were based upon a model-based approach in which the independent variables that are included in the model are analyzed to determine if the selected variables contribute significantly as a group to the dependent variable. For the analyses which evaluated the amount of time that students participated in intervention, Table 25 provides a list of the independent variables that were included in the analysis. In contrast, the independent variables that were included in the analyses for the place that intervention was provided are listed in Table 26.

Table 25  
Independent Variables for Analyses Related to the Amount of Time that SLPs Provide Services

	Independent Variables Included in Model
Workplace	
SLP	Adjusted caseload SLP’s year of graduation Number of years SLP has worked in the schools

Table 26  
 Independent Variables for Analyses Related to the Place that SLPs Provide Services

Independent Variables Included in Model	
Workplace	Adjusted Caseload
SLP	Years worked in the school SLP's year of graduation with Master's degree Clinical training experiences during graduate school Delivering one-on-one intervention outside the classroom Delivering group intervention outside the classroom Delivering intervention in the resource room Delivering intervention in a self-contained classroom Delivering classroom-based intervention for preschoolers Delivering classroom-based intervention with shared teaching in elementary classroom Delivering intervention in elementary classroom in which did not work directly with classroom teacher. Delivering intervention in the general education classroom, but off to the side, not part of the general education classroom activity Delivering intervention in Middle and High School classroom in which you shared planning and teaching with the classroom teacher Delivering intervention in Middle and High School classroom independent of the classroom teacher Consultation with school personnel

The SLP's caseload, year of graduation and number of years worked in the schools were included in the model as continuous variables. In contrast, the SLP's clinical training experiences during graduate school were dummy coded (0=No, 1=Yes) in regards to whether or not he/she had experienced intervention in this setting during graduate school. These variables were then evaluated with the model fit ( $\alpha = .05$ ) using the most often reported amount of time for each grade level and disability as the reference category. Likelihood ratio tests were completed to



determine if the variables contributed significantly ( $\alpha = .01$ ) to the SLPs' decisions regarding the amount of time or place children participated in intervention. This determination was based upon a change in model fit, the -2 log likelihood value. If the independent variables were observed to be significant ( $\alpha = .01$ ) within the Likelihood ratio tests, they were evaluated further. An alpha level of .01 was selected to be used for the Likelihood ratio test as well as with the Parameter Estimates due to the large number of analyses that were conducted at a more conservative alpha level.

#### *Service Delivery by Grade*

SLPs reported information regarding the amount of time and place that intervention was provided for students on their caseload in conjunction with the student's grade level. The grade levels that were included were preschool, kindergarten, first, second, third, fourth, fifth, junior high/middle school (sixth through eighth), and high school (ninth through twelfth). For the grade levels evaluated, SLPs were asked to report the amount of time children with the most severe disability participated in intervention. The variables that were included when evaluating the amount of time students participated in therapy were caseload size, the SLP's year of graduation, and the number of years the SLP had worked in the schools. In addition to these three variables, the SLP's clinical training experiences were included in the analysis for the place that intervention was provided. The SLPs' responses were then evaluated using multinomial logistic regression to determine if there was a significant relationship between their decisions regarding the amount of time and place students participate in intervention and these variables.

*Most Severe for Grade by Time.* For each of the children on their caseload in the requested grade levels, SLPs were to report the amount of time their most severe student participated in intervention. The variables included in the analysis for time are listed in Table 25. The results for the Full Model in Table 27 indicated that for children in preschool, kindergarten, first and third grade the variables included in the full model (i.e., year of graduation with a master’s degree, years worked in the public schools and adjusted caseload) contributed significantly to the ability to predict the amount of time that students would participate in intervention (See Table 27).

Table 27  
Full Model Fitting Information by Most Severe Grade for Time

Grade Level	-2 Log Likelihood	Chi-Square	df	Sig.
Preschool	1579.29	36.65	12	.000*
Kindergarten	1518.08	37.10	12	.000*
First	1542.04	30.66	12	.002*
Second	1541.41	19.43	12	.079
Third	1553.70	21.83	12	.040*
Fourth	1391.61	12.88	12	.378
Fifth	1502.73	8.67	12	.731
Junior High/Middle School	1178.10	6.57	15	.969
High School	800.351	11.11	15	.745

Note. Asterisk indicates significant value.

In order to evaluate these factors in more detail, a likelihood ratio test was completed for the children who have the most severe disability in each grade. Variables which were significant at a .01 level or lower are reported in Table 28. For the preschool child on the SLP's caseload with the most severe disability, the SLP's caseload had a significant impact on the amount of time the children participated in intervention. For the kindergarten student with the most severe disability, the year that the SLP obtained his/her Master's degree and the number of years he/she worked in the schools contributed significantly to the amount of time the students were provided therapy. For the other grades previously found to be significant in the Full Model (first and third grade), the variables which were included in the model (See Table 25) were not found to be significant at the .01 level.

Table 28  
Likelihood Ratio Tests: Most Severe Grade for Time

Grade Level	-2 Log Likelihood	Chi-Square	df	Sig.
Preschool				
Adjusted Caseload	1608.83	29.54	4	.000
Kindergarten				
Yr. of grad	1533.53	15.44	4	.004
Yrs. worked in school	1538.53	20.45	4	.000

The variables that were observed to be significant within the Likelihood Ratio test were then assessed in more detail using Parameter Estimates. In evaluating the amount of time that the most severe preschoolers were more likely to participate in intervention, the reference category to which the other time options were compared was 2-3 times a week for 20-30 minutes. This was chosen because it was selected more often by the reporting SLPs. Table 29 reports the regression weight (B), the standard error (SE), and the odds ratio ( $exp(b)$ ). The results in Table 29 illustrate that the adjusted caseload was significant for SLPs choosing 1 time a week for 20-30 minutes and SLPs who selected 2 or more times a week for 45-60 minutes. Odds ratios,  $exp(b)$ , above 1.0 indicate a higher likelihood of selecting the comparison category (e.g., 1 time a week for 20-30 minutes), and odds ratios below 1.0 predict a higher probability of membership in the reference category (e.g., 2-3 times a week for 20-30 minutes). Therefore, for students in preschool with the most severe disability, the SLP was more likely (1.017 times) to select 1 time a week for 20-30 minutes as his/her adjusted caseload increased a unit. In this case, a unit increase in the adjusted caseload is the addition of one more child. So, a clinician with a caseload of 80 is 30.51 times more likely to select 1 time a week for 20-30 minutes over 2-3 times a week for 20-30 minutes as compared to an SLP with a caseload of 50. Similarly, as the caseload increased, SLPs were 0.981 times more likely to select 2-3 times a week for 20-30 minutes as compared to two or more times a week for 45-60 minutes.

Table 29 also shows the likelihood of SLPs selecting 1 time a week for 45-60 minutes as compared to 2-3 times a week for 20-30 minutes for their most severe

kindergartener. In this case, as the SLP's year of graduation increased he/she was 0.915 times more likely to select 2-3 times a week for 20-30 minutes. As the number of years that the SLP had worked in the schools increased, the SLP was 0.852 times more likely to select 2-3 times a week for 20-30 minutes as compared to one time a week for 45-60 minutes.

Table 29  
Parameter Estimates: Child with Most Severe Disability in a Grade for Time

	B	SE	<i>exp(b)</i>
Preschool <sup>a</sup>			
1 time a week for 20-30 min.			
Adjusted Caseload	.017**	.005	1.017
2 or more times a week for 45-60 min.			
Adjusted Caseload	-.020**	.006	.981
Kindergarten <sup>a</sup>			
1 time a week for 45-60 min.			
Yr. of grad	-.089**	.031	.915
Yrs. worked in school	-.161**	.043	.852

Note. \*\* Indicates significance level of .001. <sup>a</sup> Indicates the reference category is 2-3 times a week for 20-30 minutes. The variables included in this model are listed in Table 25. B is regression weight, SE is standard error, and *exp(b)* is the odds ratio.

*Most Severe for Grade by Place.* When evaluating the place that SLPs were most likely to provide intervention, the variables included in the model were the SLP's year of graduation, number of years worked in the school and their adjusted caseload. In addition, the places in which the SLP had participated in providing intervention during his/her graduate school training were included (See Table 26).

Table 30  
Full Model Fitting Information: Child with Most Severe Disability in a Grade for Place

Disability	-2 Log Likelihood	Chi-Square	df	Sig.
Preschool	1720.20	103.01	55	.000*
Kindergarten	2050.72	83.30	55	.008*
First	2010.66	64.29	55	.183
Second	1857.08	86.24	55	.005*
Third	1714.01	75.46	55	.035*
Fourth	1586.92	64.92	55	.169
Fifth	1551.29	70.43	55	.079
Junior High/ Middle School	966.109	67.25	55	.124
High School	659.99	51.82	55	.597

Note. Asterisk indicates significant value.

For the most severe students in preschool, kindergarten, second, and third grade the variables included in the analysis contributed significantly to the SLP's choice for where to provide intervention (See Table 30). However, only for the most severe preschooler were the SLP's adjusted caseload size and year of graduation

significant predictors at the .01 level (See Table 31). Furthermore, the results in Table 32 indicate that as the adjusted caseload increased SLPs were 1.021 times more likely to provide intervention in groups outside of the classroom, 1.031 times more likely to select the resource room, and 1.026 times more likely to utilize place not listed within the survey for their most severe preschooler.

Table 31  
Likelihood Ratio Tests: Child with Most Severe Disability in a Grade for Place

Disability	-2 Log Likelihood	Chi-Square	df	Sig.
Preschool				
Adjusted Caseload	1744.15	23.95	5	.000
Yr. of grad.	1736.39	16.18	5	.006

Table 32  
Parameter Estimates: Child with Most Severe Disability in a Grade for Place

	B	SE	<i>exp(b)</i>
Preschool <sup>a</sup>			
Group outside the classroom			
Adjusted Caseload	.021**	.006	1.021
Resource room			
Adjusted Caseload	.030*	.011	1.031
Other			
Adjusted Caseload	.026**	.008	1.026

Note. The variables included in this analysis are specified in Table 26. <sup>a</sup> Reference category is 1 on1 outside the classroom. \* Indicates significance level of .01. \*\* Indicates significance level of .001. B is regression weight, SE is standard error, and *exp(b)* is the odds ratio.

*Moderate Severity for Grade by Time.* The three variables included in the model for the child with a moderate disability in each grade were the SLP's year of graduation, number of years worked in the school, and his/her adjusted caseload (See Table 25). When including these variables in the model, the results presented in Table 33 indicated that the Full Model was significant for a child with a moderate disability in preschool, junior high/middle school, and high school.

Table 33  
Full Model Fitting Information: Child with Moderate Disability in a Grade for Time

Grade Level	-2 Log Likelihood	Chi-Square	df	Sig.
Preschool	1392.25	28.55	12	.005*
Kindergarten	1319.66	19.77	12	.071
First	1360.28	17.42	15	.294
Second	1359.88	12.57	15	.636
Third	1396.53	13.43	12	.338
Fourth	1422.27	13.87	12	.309
Fifth	1417.91	20.61	15	.150
Junior High/ Middle School	1089.95	28.08	15	.021*
High School	618.83	29.49	15	.014*

Note. Asterisk indicates significant value.

The adjusted caseload was the only significant variable at the .01 level for the child with a moderate disability in preschool, junior high and high school (See Table 34). Furthermore, the parameter estimates in Table 35 indicated that as the SLPs



caseload increased, a child with a moderate disability in preschool was 1.014 times more likely to select 1 time a week for 20-30 minutes or a different amount of time than what was provided within the survey. In contrast, as the adjusted caseload increased, the SLP was 0.976 times more likely to select 2-3 times a week for 20-30 minutes. For students in junior high, the SLP was 0.978 times more likely to select 1 time a week for 20-30 minutes as their caseload increased a child as compared to 2-3 times a week for 20-30 minutes. The SLP was also more likely to provide intervention one time a week for 20-30 minutes as compared to 2 or more times a week for 45-60 minutes (0.964 times) as well as 1 time a week for 45-60 minutes (0.975 times). In regards to high school students with a moderate disability, the likelihood of selecting one time a week for 20-30 minutes increased 0.978 times as compared to 2-3 times a week for 20-30 minutes and 0.898 times as compared to two or more times a week for 45-60 minutes as the SLP's adjusted caseload increased.

Table 34  
Likelihood Ratio Tests: Child with Moderate Disability in a Grade for Time

Grade Level	-2 Log Likelihood	Chi-Square	df	Sig.
Preschool				
Adjusted Caseload	1417.13	24.87	4	.000
Junior High/ Middle School				
Adjusted Caseload	1113.81	23.86	5	.000
High School				
Adjusted Caseload	646.79	27.85	5	.000

Table 35  
 Parameter Estimates: Child with Moderate Disability in a Grade for Time

	B	SE	<i>exp(b)</i>
Preschool <sup>a</sup>			
1 time a week for 20-30 min.			
Adjusted Caseload	.014**	.005	1.014
2 or more times a week for 45-60 min.			
Adjusted Caseload	-.024**	.009	.976
Other			
Adjusted Caseload	.022	.008	1.022
Junior High/ Middle School <sup>b</sup>			
2-3 times a week for 20-30 min.			
Adjusted Caseload	-.022**	.007	.978
1 time a week for 45-60 minutes			
Adjusted Caseload	-.025**	.008	.975
2 or more times a week for 45-60 min.			
Adjusted Caseload	-.037**	.012	.964
High School <sup>b</sup>			
2-3 times a week for 20-30 min.			
Adjusted Caseload	-.023**	.009	.978
2 or more times a week for 45-60 min.			
Adjusted Caseload	-.107**	.029	.898

Note. Variables included in this model are included in Table 25. <sup>a</sup> The reference category is 2-3 times a week for 20-30 minutes. <sup>b</sup> The reference category is 1 time a week for 20-30 minutes. \* Indicates significance level of .01. \*\* Indicates significance level of .001. B is regression weight, SE is standard error, and  $exp(b)$  is the odds ratio.

*Moderate Severity for Grade by Place.* When evaluating the place that intervention was provided for a child with a moderate disability in the observed grades, the results reported in Table 36 of the Full Model indicated that the variables included (SLP's year of graduation, the number of years worked in the school, adjusted caseload, and clinical training experiences) were not significant contributors to the decision as to where a child with a moderate disability participated in intervention who was in preschool, kindergarten, third, and fifth grade. While these variables contributed to the full model significantly for a child with a moderate disability in first, second, and fourth grade, the variables were not significant at the .01 level for the Likelihood Ratio tests.

Table 36  
 Full Model Fitting Information: Child with Moderate Disability in a Grade for Place

Grade	-2 Log Likelihood	Chi-Square	df	Sig.
Preschool	1693.57	54.71	55	.486
Kindergarten	1563.43	64.04	55	.189
First	1350.185	74.31	55	.042*
Second	1281.19	75.08	55	.037*
Third	1195.73	71.66	55	.065
Fourth	1225.42	75.54	55	.034*
Fifth	1215.51	49.82	55	.672
Junior High/ Middle School** High School**				

Note. Asterisk indicates significant value. \*\* Model could not be run because of low occurrence of observed frequency.

*Least Severe for Grade by Time.* In regards to the amount of time that a child with the least severe disability in a grade participated in therapy, the variables (See Table 25) included in the Full Model were significant factors for the child with a least severe disability in kindergarten, fourth, and fifth grades as well as junior high and high school (See Table 37).

Table 37

Full Model Fitting Information: Child with Least Severe Disability in a Grade for Time

Grade Level	-2 Log Likelihood	Chi-Square	df	Sig.
Preschool	1360.76	23.37	15	.077
Kindergarten	1500.78	29.42	15	.014*
First	1627.39	24.16	18	.150
Second	1592.35	22.42	18	.214
Third	1611.93	19.00	15	.214
Fourth	1543.86	39.05	15	.001*
Fifth	1473.24	43.68	15	.000*
Junior High/ Middle School	940.52	22.90	12	.029*
High School	540.37	24.51	12	.017*

Note. Asterisk indicates significant value.

Table 38 illustrates that for the child with the least severe disability in kindergarten, fourth, and fifth grade as well as high school the only variable which contributed at the modified significance level of .01 was adjusted caseload. The parameter estimates for the adjusted caseload are provided in Table 39. SLPs that had a child with the least severe disability in kindergarten, fourth grade, fifth grade, and high school were more likely (0.987, 0.946, 0.975, and 0.949 times respectively) to select one time a week for 20-30 minutes as compared to 2-3 times a week for 20-30 minutes. In addition, a child in kindergarten with the least severe disability was 0.946 times more likely to participate in intervention one time a for 20-30 minutes as

compared to two or more times a week for 45-60 minutes as the SLP's caseload increased. Similarly, the least severe fifth grade student as 0.941 times more likely to take part in therapy one time a week for 20-30 minutes as compared to one time a week for 45-60 minutes as the SLP's caseload size grew. Consultation was 1.013 times more likely to be chosen for the least severe fourth grade student as the caseload increased as well.

Table 38  
Likelihood Ratio Tests: Child with Least Severe Disability in a Grade for Time

Grade Level	-2 Log Likelihood	Chi-Square	Df	Sig.
Kindergarten				
Adjusted Caseload	1523.40	22.62	5	.000
Fourth				
Adjusted Caseload	1570.47	26.62	5	.000
Fifth				
Adjusted Caseload	1503.59	30.35	5	.000
High School				
Adjusted Caseload	555.82	15.45	4	.004

Table 39

## Parameter Estimates: Child with Least Severe Disability in a Grade by Time

	B	SE	<i>exp(b)</i>
Kindergarten <sup>a</sup>			
2-3 times a week for 20-30 min.			
Adjusted Caseload	-.013**	.005	.987
2 or more times a week for 45-60 min.			
Adjusted Caseload	-.056**	.017	.946
Fourth <sup>a</sup>			
2-3 times a week for 20-30 min.			
Adjusted Caseload	-.016*	.006	.984
Consultation			
Adjusted Caseload	.013*	.005	1.013
Fifth <sup>a</sup>			
2-3 times a week for 20-30 min.			
Adjusted Caseload	-.025**	.007	.975
1 time a week for 45-60 min.			
Adjusted Caseload	-.061*	.023	.941
High School <sup>a</sup>			
2-3 times a week for 20-30 min.			
Adjusted Caseload	-.052**	.016	.949

Note. Variables included in this model are included in Table 25. <sup>a</sup>The reference category is 1 time a week for 20-30 minutes. \* Indicates significance level of .01. \*\* Indicates significance level of .001. B is regression weight, SE is standard error, and *exp(b)* is the odds ratio.

*Least Severe for Grade by Place.* In regards to the place that students with the least severe disability in varying grades were reported to participate in intervention, the variables included in the model (See Table 26) that were included in the model were significant for kindergarten, first grade, and fifth grade (See Table 40).

Table 40  
Full Model Fitting Information: Child with Least Severe Disability in a Grade for Place

Disability	-2 Log Likelihood	Chi-Square	df	Sig.
Preschool	1508.58	58.30	55	.355
Kindergarten	1424.21	90.67	55	.002*
First	1344.47	84.62	55	.006*
Second**				
Third**				
Fourth**				
Fifth	1270.74	86.73	55	.004*
Junior High/ Middle School	868.38	60.95	55	.271
High School	580.10	68.31	55	.107

Note. Asterisk indicates significant value. \*\* Model could not be fun because of low occurrence of observed frequency.



The SLP's year of graduation was the single variable that was significant at the .01 level for kindergarten students with the least severe disability (See Table 41). Further analysis in Table 42 indicated that as the SLP's year of graduation increased, he/she was 0.882 times more likely to utilize group therapy outside of the classroom as compared to a place not listed on the survey (other).

Table 41  
Likelihood Ratio Tests: Child with Least Severe Disability in a Grade for Place

Disability	-2 Log Likelihood	Chi-Square	df	Sig.
Kindergarten				
Yr. of grad.	1440.56	16.35	5	.006

Table 42  
Parameter Estimates: Child with Least Severe Disability in a Grade for Place

	B	SE	<i>exp(b)</i>
Kindergarten <sup>a</sup>			
Other			
Yr. of grad.	-.126**	.033	.882

Note. Variables included in this model are listed in Table 26. <sup>a</sup> Reference category is group outside the classroom. \* Indicates significance level of .01. \*\* Indicates significance level of .001. B is regression weight, SE is standard error, and *exp(b)* is the odds ratio.

### *Service Delivery in Regards to Disability*

The participating SLPs also provided information regarding the amount of time and the place children with the eight most commonly occurring disabilities on their caseload as reported on the ASHA Schools Survey (2008) according to the severity of their disability. The variables that were included in the model for the multinomial logistic regression for both the amount of time and the place that intervention was provided were the same as when evaluating their services according to grade level (See Tables 25 and 26 respectively). As with the previous analyses, an alpha level of 0.05 was utilized for the Full Model. However, a more stringent alpha of 0.01 was utilized for the Likelihood Ratio Tests and Parameter Estimates in an attempt to decrease the likelihood of Type I error.

*Most Severe Disability and Time.* In regards to the amount of time that students participated in intervention, the variables included in the Full Model were significant for children with a severe articulation disorder, PDD, pragmatics disorder or reading disorder (See Table 43).

Table 43  
Full Model Fitting Information: Child with Severe Disability for Time

Disability	-2 Log Likelihood	Chi-Square	df	Sig.
AAC	1911.31	23.79	15	.069
Articulation	2465.93	27.38	15	.026*
Learning Disability	2194.41	24.33	18	.145
MR/DD	2246.96	23.15	15	.081
PDD	2631.65	26.74	15	.031*
Pragmatics	2585.04	26.04	15	.038*
Reading	1573.02	31.34	15	.008*
SLI	2122.68	22.32	15	.100

Note. Asterisk indicates significant value.

The results of the Likelihood Ratio Tests (See Table 44) determined that the number of years that the SLP worked in the schools contributed significantly in regards to the amount of time students participated in intervention for children with the most severe articulation disorder and reading disorder. In addition, the year that the SLP earned his/her master's degree also impacted the amount of time that the child with the most severe articulation disorder participated in therapy. Evaluating

these variables further, however, resulted in significant results at the .01 level for an amount of time other than the choices provided on the survey (See Table 45).

Specifically, as the year that the SLP earned his/her master's degree increased, the SLP's odds of choosing 2-3 times a week increased 0.938 times. In addition, as the years the SLP worked in the school increased the likelihood of the SLP selecting 2-3 times a week for 20-30 minutes increased 0.939 times.

Table 44  
Likelihood Ratio Tests: Child with Most Severe Disability for Time

Disability	-2 Log Likelihood	Chi-Square	df	Sig.
Articulation				
Yr. earned MA	2482.81	16.88	5	.005
Yrs. worked in school	2481.28	15.35	5	.009
Reading				
Yrs. worked in school	1588.58	15.56	5	.008

Table 45

## Parameter Estimates: Child with Most Severe Disability for Time

	B	SE	<i>exp(b)</i>
Articulation <sup>a</sup>			
Other			
Yr. earned			
MA degree	-.064**	.018	.938
Yrs. worked			
in school	-.063*	.020	.939

Note. Variables included in this model are listed in Table 25. <sup>a</sup> The reference category is 2-3 times a week for 20-30 minutes. \* Indicates significance level of .01. \*\* Indicates significance level of .001. B is regression weight, SE is standard error, and *exp(b)* is the odds ratio.

*Most Severe Disability and Place.* The SLPs provided information regarding the place that the most severe student with each of the eight disabilities participated in intervention. Table 46 indicates that for children with the most severe articulation disorder, learning disability, and PDD these variables contributed significantly to the Full Model.

Table 46  
Full Model Fitting Information: Child with Most Severe Disability for Place

Disability	-2 Log Likelihood	Chi-Square	df	Sig.
AAC	1926.00	44.17	55	.852
Articulation	2408.37	116.65	55	.000*
Learning Disability	2026.71	77.039	55	.027*
MR/DD	2498.72	51.12	55	.624
PDD	2882.62	98.07	55	.000*
Pragmatics	2486.05	72.23	55	.059
Reading	1419.61	69.00	55	.097
SLI	2056.09	67.39	55	.122

Note. Asterisk indicates significant value.

For the child with the most severe articulation disorder, the SLP’s caseload size significantly impacted the choice regarding the place to provide intervention (See Table 47). In addition, whether or not the SLP had experience with one-on-one training outside the classroom impacted where the student with the most severe PDD participated in therapy.

Table 47  
Likelihood Ratio Tests: Child with Most Severe Disability for Place

Disability	-2 Log Likelihood	Chi-Square	df	Sig.
Articulation				
Adjusted Caseload	2466.59	58.22	5	.000
PDD				
Training 1 on 1 outside the classroom	2900.60	17.99	5	.003

In particular, the children with the most severe articulation disorder were 1.014 times more likely to participate in intervention in a group outside of the classroom as the caseload increased, 1.015 more likely to participate in intervention in the resource room or 1.020 more likely to have intervention in a setting other than that listed on the survey. In addition, as the SLP’s caseload increased the student was 0.950 times more likely to receive intervention one-on-one outside of the classroom as compared to the general education classroom (See Table 48).

For students with PDD at the most severe severity level, the odds of the SLP providing intervention within the resource room as compared to one-on-one outside the classroom increased 0.161 times if the SLP had training one-on-one outside the classroom. Similarly, if the SLP had participated in training one-on-one outside the classroom, the odds of the student participating in intervention one-on-one outside the classroom increased 0.414 times as compared to a group outside of the classroom (See Table 48).



Table 48  
 Parameter Estimates: Child with Most Severe Disability for Place

	B	SE	<i>exp(b)</i>
Articulation <sup>a</sup>			
Group outside the classroom			
Adjusted Caseload	.014**	.004	1.014
In the classroom			
Adjusted Caseload	-.051**	.011	.950
Resource room			
Adjusted Caseload	.015*	.006	1.015
Other			
Adjusted Caseload	.020**	.005	1.020
PDD <sup>a</sup>			
Resource Room			
Training 1 on1 outside the classroom	-1.829**	.515	.161
Group outside the classroom			
Training 1 on1 outside the classroom	-.882**	.333	.414

Note. Variables included in this model are available in Table 26. <sup>a</sup> Reference category is 1 on1 outside the classroom. \* Indicates significance level of .01. \*\* Indicates significance level of .001. B is regression weight, SE is standard error, and *exp(b)* is the odds ratio.

*Moderate Disability and Time.* The variables listed in Table 25 did not contribute significantly to their choice for the amount of time to provide intervention. The results in Table 49 indicate that for all eight disabilities evaluated, the SLP's decision regarding the amount of time to provide intervention was not significantly impacted ( $\alpha=.05$ ) by the variables included in the Full Model.

Table 49  
Full Model Fitting Information: Child with Moderate Disability for Time

Disability	-2 Log Likelihood	Chi-Square	df	Sig.
Articulation	2164.26	14.68	15	.474
AAC	1444.55	23.29	15	.078
Learning Disability	2123.26	16.49	15	.350
MR/DD	1888.12	18.35	15	.245
PDD	2349.03	23.40	15	.076
Pragmatics	2416.11	17.33	15	.300
Reading	1568.03	15.74	15	.400
SLI	2043.10	14.24	15	.507

Note. Asterisk indicates significant value.

*Moderate Disability and Place.* The variables included in the Full Model for the place that intervention was provided to the students (See Table 26) with a moderate disability were significant for children with a moderate articulation disorder, learning disability, PDD, and pragmatics disorder (See Table 50).

Table 50  
Full Model Fitting Information: Child with Moderate Disability for Place

Disability	-2 Log Likelihood	Chi-Square	df	Sig.
AAC	1604.32	55.70	55	.448
Articulation	1938.03	102.43	55	.000*
Learning Disability	1713.82	82.92	55	.009*
MR/DD	2013.27	57.29	55	.390
PDD	2455.57	81.43	55	.012*
Pragmatics	2114.24	77.04	55	.027*
Reading**				
SLI**				

Note. Asterisk indicates significant value. \*\* Model could not be run because of low occurrence of observed frequency.

Table 51 indicates that for children with a moderate articulation disorder the SLP's adjusted caseload impacts the place that intervention is provided. Specifically, as the SLP's adjusted caseload increased the student was 0.971 times more likely to have therapy in a group outside the classroom as compared to one-on-one outside of the classroom. Similarly, the probability of having intervention in a group outside of the classroom increased 0.959 times in comparison to therapy in the general education classroom as the SLP's adjusted caseload increases (See Table 52).

In addition, clinical training during graduate school in which the SLP had participated in shared teaching with a middle school teacher also impacted where a child with PDD at a moderate severity level took part in therapy (See Table 51). SLPs who had taken part in a shared teaching experience with a middle school teacher during graduate school training were 6.039 times more likely to provide intervention within the resource room and 2.639 times more likely to take part in therapy one-on-one outside the classroom as compared to a group outside the classroom (See Table 52).

Table 51  
Likelihood Ratio Tests: Child with Moderate Disability for Place

Disability	-2 Log Likelihood	Chi-Square	df	Sig.
Articulation				
Adjusted Caseload	1989.03	51.25	5	.000
PDD				
Shared teaching with Middle School Teacher	2471.73	16.16	5	.006

Table 52  
 Parameter Estimates: Child with Moderate Disability for Place

	B	SE	<i>exp(b)</i>
Articulation <sup>a</sup>			
1 on1 outside the classroom			
Adjusted Caseload	-.029**	.006	.971
In the classroom			
Adjusted Caseload	-.041**	.010	.959
PDD <sup>a</sup>			
Resource Room			
Shared teaching with Middle School Teacher			
	1.798**	.565	6.039
1 on1 outside the classroom			
Shared teaching with Middle School Teacher			
	.970**	.372	2.639

Note. The variables included in this model are available in Table 26. <sup>a</sup> Reference category is Group outside the classroom. \* Indicates significance level of .01. \*\* Indicates significance level of .001. B is regression weight, SE is standard error, and *exp(b)* is the odds ratio.

*Least Severe Disability and Time.* The Full Model was significant for the students with the least severe diagnosis of PDD (See Table 53).

Table 53  
Full Model Fitting Information: Child with Least Severe Disability for Time

Disability	-2 Log Likelihood	Chi-Square	df	Sig.
Articulation	2429.26	13.12	15	.593
AAC	1350.65	13.89	15	.534
Learning Disability	2189.46	21.87	15	.111
MR/DD	1833.66	11.91	15	.686
PDD	2331.14	26.78	15	.031*
Pragmatics**				
Reading**				
SLI	2174.45	24.26	15	.061

Note. Asterisk indicates significant value. \*\* Unable to complete analyses due to low occurrence of observed frequency.

The year in which the SLP obtained his/her master's degree was a significant predictor for a student with the least severe PDD (See Table 54). As the SLP's year of graduation increased, the SLP was 0.917 times more likely to select one time a week for 20-30 minutes as compared to an amount of time not listed on the survey (other) (See Table 55).

Table 54

## Likelihood Ratio Tests: Child with Least Severe Disability for Time

Disability	-2 Log Likelihood	Chi-Square	df	Sig.
PDD				
Yr. earned MA	2346.23	15.086	5	.010

Table 55

## Parameter Estimates: Child with Least Severe Disability for Time

	B	SE	<i>exp(b)</i>
PDD <sup>a</sup>			
Other			
Yr. earned MA degree	-.086	.029	.917

Note. The variables included in this model are available in Table 25. <sup>a</sup> The reference category is 1 time a week for 20-30 minutes. B is regression weight, SE is standard error, and *exp(b)* is the odds ratio.



*Least Severe Disability and Place.* While the least severe students with an articulation disorder, PDD, or pragmatics disorder did have results that were significant in the Full Model (See Table 56) the Likelihood Ratio Tests for the variables which were included (See Table 26) were not significant at the .01 alpha level as required for further analysis.

Table 56  
Full Model Fitting Information: Child with Least Severe Disability for Place

Disability	-2 Log Likelihood	Chi-Square	df	Sig.
AAC	1374.57	56.60	55	.415
Articulation	2278.46	74.55	55	.041*
Learning Disability	1851.01	66.27	55	.142
MR/DD	1783.60	50.02	55	.665
PDD	2172.37	75.90	55	.032*
Pragmatics	2050.39	80.31	55	.015*
Reading**				
SLI	1807.91	72.06	55	.061

Note. Asterisk indicates significant value. \*\* Model could not be run because of low occurrence of observed frequency.

### *Summary of Results*

SLPs reported that their decisions in regards to the time and place that intervention was provided were most influenced by the child characteristics. Table 57 summarizes their top three considerations. In regards to both time and place, the SLPs identified the nature and severity of the child's disorder most often. However, little variation was observed in amount of time and place that intervention was reported. For instance, children with severe disabilities and children with moderate disabilities were both most likely to participate in intervention 2-3 times a week for 20-30 minutes. This result did not change when accounting for the child's grade level or type of disability. In regards to the place, students were most often seen in groups outside of the classroom regardless of their grade or disability (See Table 57).

Additional analysis of the workplace and SLP factors was conducted using multinomial logistic regression. In regards to time of services, adjusted caseload was found to be a significant factor most often (See Table 57). Overall, the data indicated that as adjusted caseload increased, the students were 0.898 to 1.031 times more likely to participate in interventions for smaller amounts of time.

In regards to the place of intervention, the multinomial logistic regression indicated that adjusted caseload size was again a factor (0.882 times to 1.031 times). Table 57 also indicates that the SLP's clinical training experiences also significantly impacted decisions regarding the place for intervention. For instance, SLPs who had experience with shared teaching with a middle school teacher during their graduate

school training were six times more likely to provide intervention within the resource room.

Table 57  
Summary of Results

Question 1	What is the opinion of SLPs with respect to the impact of SLP, workplace, and child factors when making decisions about time and place for service delivery?
	<p>Time- All child factors</p> <ol style="list-style-type: none"> <li>1. nature and severity of the child's disorder</li> <li>2. child's communication needs in relation to the general education curriculum</li> <li>3. curriculum child's strengths, needs, and emerging abilities</li> </ol> <p>Place- All child factors</p> <ol style="list-style-type: none"> <li>1. nature and severity of the child's disorder</li> <li>2. child's communication needs in relation to the general education curriculum</li> <li>3. child's strengths, needs, and emerging abilities</li> </ol>
Question 2	What are the child factors (severity, grade level, and disability) associated with time and place of service delivery?
	<p>Time</p> <ul style="list-style-type: none"> <li>• Children with severe disabilities and children with moderate disabilities: 2-3 times a week for 20-30 minutes</li> <li>• Children with least severe disability: 1 time a week for 20-30 minutes</li> </ul> <p>Place</p> <ul style="list-style-type: none"> <li>• Group intervention outside of the classroom</li> </ul>
Question 3	Which of the SLP and workplace factors are the best fit for the SIDM model?
	<p>Time</p> <ul style="list-style-type: none"> <li>• Adjusted caseload</li> <li>• SLP's year of graduation with Master's degree</li> <li>• Number of years worked in the schools</li> </ul> <p>Place</p> <ul style="list-style-type: none"> <li>• Adjusted caseload</li> <li>• SLP's year of graduation with Master's degree</li> <li>• Clinical training experiences</li> </ul>

## Discussion

Providing intervention in the schools requires extensive skills and knowledge on the part of the SLP. Following diagnosis, the SLP has to determine which approach to use as well as where and for how long to provide services. These decisions are sometimes, although not typically, determined by the SLP alone. As Table 14 indicated, 33.6% of the SLPs independently determined the place and time for providing intervention as compared to 49.1% who utilized the input of the team when making these service delivery decisions.

The results of this study reflect the complexity of the decision-making process for SLPs. There was disparity between what SLPs stated were the most important considerations when determining the time and place for intervention and their actual practice. Using the SIDM model components as factors that are important considerations for service delivery decisions, one can begin to understand the SLP's decision-making with respect to child, workplace and SLP characteristics. Specifically, SLPs indicated that child characteristics were the most important factors for deciding when and how often to see children on their caseload. This being the case, one would expect that children with different disabilities and children with different levels of severity would be seen for different number amounts of time and different places depending on the needs of the child. It might be expected that for a student with a severe disability, more intensive services in a one-on-one setting would result in greater gains as compared to a lesser amount of in a group setting where the child would likely have fewer practice opportunities. In contrast, a child with a

disability that is less severe may likely benefit from intervention for less time within his/her natural setting (e.g., the general education classroom) in order to generalize the skills that have been targeted. Similarly, it is possible that for children who are younger, an SLP might want to provide more intensive interventions in an attempt to quickly remediate the child's speech and/or language skills so that she/he would no longer necessitate services. However, this was not what the SLP reported data revealed. Instead, children with severe disabilities as well as those with moderate disabilities were most likely to participate in intervention 2-3 times a week for 20-30 minutes in groups outside of the classroom regardless of their disorder or grade. For children with the least severe disability, services were again most often provided in groups outside of the classroom but for one time a week for 20-30 minutes. Thus, there was a lessening of time of intervention, but only for children with the least severe disability. However, the place of intervention stayed the same regardless of severity, grade, or disability type. These findings are consistent with the ASHA School Surveys (2006, 2008) as well as the NOMS data (ASHA, 2002b) which indicated that the majority of intervention is provided outside of the general education classroom in groups for 2-3 times a week for 20-30 minutes.

The findings suggest that other factors within the SIDM model, such as workplace characteristics or SLP characteristics may be influencing the SLP's decisions as little variation was seen across grade levels, disability and severity levels. Further analysis of the workplace characteristics within the SIDM model indicated that the SLP's caseload size impacted the amount of time and the place that

intervention was offered. This finding is consistent with that of Dowden et al. (2006) and provides more specific information on the impact of caseload size upon decision-making. Specifically, the current study identified that in some instances the caseload size affected the probability of the child participating in certain amounts of intervention and in some locations. For instance, preschool children with a severe disability were 1.017 times more likely to participate in intervention one time a week for 20-30 minutes as compared to 2-3 times a week for 20-30 minutes for each additional child on the SLP's caseload. In general, the current study found that as the SLP's caseload increased in size, the children were more likely to participate in intervention for lesser amounts of time. In regards to place, children were less likely to participate in one-on-one intervention outside of the classroom as the SLP's caseload increased. These results indicate that larger caseloads result in less intervention time and intervention in larger group settings for students participating in speech and language intervention.

The type of services provided by a school SLP also were influenced by SLP factors such as the year in which he/she graduated and the number of years he/she has worked within the schools. For instance, the more recent the SLP's year of graduation, intervention was 0.915 times more likely to be provided 2-3 times a week for 20-30 minutes as compared to 1 time a week for 45-60 minutes for a kindergarten child with the most severe disability. Similarly, SLPs were 0.882 times more likely to select 'other' as the place where intervention was provided for the least severe kindergartener as compared to group intervention outside of the classroom. Also, the

more years experience an SLP had resulted in the most severe kindergartner being 0.852 times more likely to participate in therapy 2-30 times a week for 20-30 minutes as compared to 1 time a week for 45-60 minutes.

These results indicate that SLPs who have graduated more recently as well as those who have worked longer in the schools are more likely to provide intervention 2-3 times a week for 20-30 minutes in group setting outside of the classroom. It is possible that SLPs with less experience are involved in learning how to work within their new environment. Therefore, they may be less likely to provide intervention in a manner that is not considered typical by his/her co-workers. In regards to the SLPs with more experience, the results of the current study also indicate that SLPs with the greatest amount of experience are less likely to vary the amount of time and place for intervention. Similar to the newly trained SLPs, the SLPs who have worked longer may have a greater focus on adapting to their evolving role within the educational system, the increasing technological demands, and the increasing amounts of paperwork.

Further, there was some limited evidence that the clinical experiences that an SLP had during his/her graduate school experience impacted the types of decisions made later when he/she is working in the schools. For instance, SLPs who had a shared teaching experience with a middle school or high school teacher during graduate school were more than six times more likely to provide therapy in the resource room and more than 2.5 times more likely to provide therapy one-on-one outside of the classroom as compared to group intervention outside of the classroom

for a child with moderate PDD. This finding would imply that the type of clinical training experiences an SLP has impacts the place that he/she provides intervention later.

There are four possible explanations for why the time and place of service delivery was similar for many of the children on the SLPs' caseloads. First, SLPs may believe that this amount of time and place is appropriate for a child to make appropriate gains. There was some limited confirmation of this explanation from the email questionnaires in which two SLPs indicated that 2-3 times a week for 20-30 minutes in groups outside of the classroom was sufficient. Unfortunately, there are no studies that have evaluated the claim that 2-3 times a week for 20-30 minute sessions in group settings outside the classroom is an effective service delivery model. Therefore, there is a need for efficacy studies to evaluate whether students who are currently receiving speech and language services within the schools are making adequate progress not only on their goals but also improving their performance within the general education classroom.

A second explanation for the lack of variation observed in regards to the time and place of speech and language services could be that SLP decisions are made based on their training. This explanation is supported by two findings. First, clinical training for a majority of the respondents was individual and group intervention outside of the classroom, Second SLPs reported providing the majority of intervention in groups or individually outside of the classroom regardless of the child's grade, disability, or severity of the disorder. However, further statistical



analysis found that the decisions for SLPs who had experienced shared teaching with a middle school teacher or individual intervention were significantly less likely to select the same place for intervention for their students with PDD as compared to other SLPs. It is possible that current training practices are not adequately preparing students to provide intervention in multiple settings and for varying amounts of time. It is unlikely that university programs can ensure that SLPs are provided an opportunity to experience every possible place and amount of intervention that could be utilized within the schools during field studies or student teaching experiences. However, clinical supervisors could supply students more varied clinical experiences under their own supervision by offering therapy within a student's school. In addition, more direct instruction within the coursework regarding how to provide intervention for varying times and places may be needed. Furthermore, students may benefit from the opportunity to reflect on the appropriateness of their clinical training experiences within a clinical processes course, a course on professional issues or through the direct guidance of clinical instructors. The ability to critically reflect upon the efficacy of the intervention which was provided during onsite training (e.g., field studies or student teaching experience) could assist students in making more appropriate intervention decisions later. The impact of changes such as those described on the provision of intervention by SLPs also needs to be evaluated to determine which components result in changes in current practice.

A third explanation for the findings is that the overall goal of SLP services within the schools is compensation and not remediation. Olswang and Bain (1991)

describe two ways in which an SLP can remediate a child's speech or language disorder. The first is to provide intervention to alter the underlying problem. Another way in which the SLP can improve a child's speech and language skills is to target specific linguistic behaviors. The third potential goal for intervention which Olswang and Bain (1991) describe is to focus on compensation. The objective with this intervention would be to teach strategies which offset the child's language disability. If the SLP is working toward helping the child be successful in his/her classroom, the observed amounts of time and place reported by SLPs in this study may be sufficient to do so. The limited empirical research which is currently available focuses on the remediation of a child's speech and/or language skills (Cirrin and Gillam, 2007; McCauley & Fey, 2006). These studies often provide services in an intense manner for a short period of time and have been shown to elicit significant gains in the child's speech and language skills. It is possible that SLPs within the schools are instead providing students compensatory strategies so he/she can be successful within the general education classroom. However, if this is the case, there again need to be studies to evaluate this practice and determine whether or not students do make adequate gains on the classroom curriculum.

Lastly, it is possible that the SLPs' decisions regarding the type of intervention is based upon the child's characteristics. In contrast, the selection for how often and where to provide therapy is based upon the team's input. The current study indicated that almost half of the SLPs made their decision regarding the amount of time and place to provide intervention after receiving input from the team. In

contrast, approximately one-third of the SLPs made the choice for time and place independently. If this is the case, then SLPs may not be basing their decisions on the needs of the child. Rather, they may adjust the amount of time and place of intervention to better fit the input of their co-workers. When questioned further within the email survey, SLPs did report the difficulty of scheduling given the demands of the school schedule and the input of their co-workers. Given these preliminary findings in regards to the possible impact of a child's team on the time and place intervention is provided, future research needs to evaluate this variable further in order to better understand its full impact.

#### *Limitations*

The current study is limited in its findings in that the response rate was 23% for the online survey and 40% for the email interview. In contrast, the ASHA School Surveys (2004, 2006, 2008) have had response rates of 69.7%, 64.9%, and 64% respectively. However, according to Sax, Gilmartin, and Bryant (2003) response rates of 19.8% could be expected for a web-only survey in which the participant has no incentives. In addition, Dillman et al. (2009) indicate that response rates are only one way in which to measure the reliability and validity of a survey's results. Furthermore, Dillman et al. (2009) state that the completed sample size is more critical in determining whether the results represent the population. In the case of the present study, the completed sample size needed for the 95% confidence interval with a margin of error +/- 3% was 1,087.

Despite the response rate being lower than the Schools Survey (ASHA, 2008), the current study is similar to ASHA's 2008 Schools Survey demographic composition. The percentage of SLPs from suburban, rural and urban schools is comparable to ASHA (2008). In addition, the mean adjusted caseload is the relatively the same as the ASHA Schools Survey (2008). Unlike the 2008 ASHA Schools Survey, the current study was able to acquire participants from each state as well as Washington, D.C. In order for the study to reflect practices within the school setting nationally, it was important to account for the variations which can be observed between states by providing the opportunity for SLPs from each state to respond.

In addition to the limited response rate, the current study required SLPs to select the amount of time and the place for delivery of speech and language services from predetermined choices. It is possible, that the survey was not sensitive to the types of variations in service delivery that SLPs utilize when making their choices regarding how often and where to provide intervention. However, SLPs were provided the opportunity to select "other" when answering the questions. Therefore, variations not captured within the predetermined choices should have been noted.

#### *Future Research*

Prior to the current study, there was no research that had been conducted regarding the time and place that services were being provided within the schools which took into consideration the role of child, workplace, and SLP characteristics. In addition to evaluating the factors within the SIDM model, this study has provided data about how often students participate in intervention depending on their grade,

their disability, and the severity of their disorder. The results of this study have given rise to several future research studies. First, SLPs may have chosen the same time and place for intervention for a majority of their students because, in their experience, they have found this service delivery to be sufficient to make progress toward a child's IEP goal(s). To determine if this is accurate, studies need to be conducted to examine student progress to determine if intervention for 2-3 times a week for 20-30 minutes results in change on a student's goals. It may be that this time and place is sufficient, but that it takes a longer period of time to achieve language competency. That is, it may take two years to meet goals that might take a shorter period of time if more intensive therapy was provided. Studies that compare different times and different places of therapy and their outcome are needed to determine the effects of these variables. Currently, most published research which has been demonstrated to be effective has been conducted for intense amounts of time over a short period (Cirrin & Gillam, 2007; Throneburg et al., 2000). The results of the current study indicated that block scheduling is rarely utilized in the schools. Future efficacy studies need to be conducted by individuals who are not providing the intervention in an effort to reduce potential bias. In addition, these assessments should be multifaceted. For instance, assessment should include an evaluation of the student's progress according to SLP documentation, standardized speech and/or language tests, language sample, and performance in the classroom (e.g., state assessment scores).

Lastly, continued evaluation of the SIDM model needs to be conducted. The other factors which were included in the model such as administrative support and the

SLP's relationship with co-workers should be evaluated more thoroughly. Little variation was observed regarding administrative support and the SLP's relationship with co-workers. However, upon further probing within the email survey, SLPs discussed difficulties providing therapy due to these two factors. This lack of continuity between the survey and email interview indicates a need to more thoroughly evaluate these variables in order to begin to understand the degree to which they impact SLP decisions regarding time and place. In addition, a more direct analysis of the factors contained within the SIDM model may find that there are additional components not currently present in the SIDM model that affect the decisions that SLPs make regarding their service delivery.

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## Appendix A

### Definitions of Child Characteristics

**The child's strengths, needs, and emerging abilities.** – The skills that are targeted in relation to the typical developmental process, those that are mastered, and the areas of deficit that require intervention when deciding the amount of time and place that intervention is provided.

**The need for peer modeling.** – The SLP's consideration regarding the child's necessity to observe and evaluate the skills of peers as part of his/her individualized education plan.

**The child's communication needs in relation to his/her general education curriculum.** – Evaluation of the child's current goals and determination as to where and how often to provide intervention must integrate the general education curriculum as mandated by IDEA (2004).

**The nature and severity of the child's disorder.** – The type of disability and the degree to which it impedes the child's ability to successfully learn and participate in the general education classroom should impact the frequency that a child receives intervention as well as where the intervention is provided.

**The motivation and attitude of the child.** – The child's willingness to participate, practice, and evaluate his/her own skills can impact decisions regarding the best place, duration and frequency of intervention. Related issues such as the child's level of comfort during intervention can also impact these choices.

**The child's age and developmental level.** – Consideration by the SLP regarding the child's ability to productively engage in the activities as it is impacted by the child's age and skill level.

## Appendix B

### Number of Participants to be Selected by State

State	Population	% US Pop.	No. Needed for Sample
Alabama	4,447,100	0.016	156
Alaska	626,932	0.002	22
Arizona	5,130,632	0.018	180
Arkansas	2,673,400	0.009	94
California	33,871,648	0.120	1188
Colorado	4,301,261	0.015	151
Connecticut	3,405,565	0.012	119
Delaware	783,600	0.003	27
Florida	15,982,378	0.057	560
Georgia	8,186,453	0.029	287
Hawaii	1,211,537	0.004	42
Idaho	1,293,953	0.005	45
Illinois	12,419,293	0.044	435
Indiana	6,080,485	0.022	213
Iowa	2,926,324	0.010	103
Kansas	2,688,418	0.010	94
Kentucky	4,041,769	0.014	142
Louisiana	4,468,976	0.016	157
Maine	1,274,923	0.005	45
Maryland	5,296,486	0.019	186
Massachusetts	6,349,097	0.023	223
Michigan	9,938,444	0.035	348
Minnesota	4,919,479	0.017	173
Mississippi	2,844,658	0.010	100
Missouri	5,595,211	0.020	196
Montana	902,195	0.003	32
Nebraska	1,711,263	0.006	60
Nevada	1,998,257	0.007	70
New Hampshire	1,235,786	0.004	43
New Jersey	8,414,350	0.030	295
New Mexico	1,819,046	0.006	64
New York	18,976,457	0.067	665
North Carolina	8,049,313	0.029	282
North Dakota	642,200	0.002	23
Ohio	11,353,140	0.040	398
Oklahoma	3,450,654	0.012	121

State	Population	% US Pop.	No. Needed for Sample
Oregon	3,421,399	0.012	120
Pennsylvania	12,281,054	0.044	431
Rhode Island	1,048,319	0.004	37
South Carolina	4,012,012	0.014	141
South Dakota	754,844	0.003	26
Tennessee	5,689,283	0.020	199
Texas	20,851,820	0.074	731
Utah	2,233,169	0.008	78
Vermont	608,827	0.002	21
Virginia	7,078,515	0.025	248
Washington	5,894,121	0.021	207
West Virginia	1,808,344	0.006	63
Wisconsin	5,363,675	0.019	188
Wyoming	493,782	0.002	17
Washington D.C.	572,059	0.002	20

Appendix C

Survey of  
Speech-Language Services  
In the School

As a school speech-language pathologist, you have many demands upon your time and skills. In an effort to better understand these demands, we would appreciate your response to the statements and questions below. Your name will not be associated with publication or reporting of these data. Your answers will provide us with insight into your service delivery choices. During the course of this questionnaire, you will be asked questions regarding the composition of your caseload. Please have this information readily available. The questionnaire will take 10 to 15 minutes to complete.

**Section I: Demographic Information**

1. What year did you graduate with your Master's degree in Speech-Language Pathology? \_\_\_\_\_
  
2. How many years have you worked as a Speech-Language Pathologist within the schools? \_\_\_\_\_

3. Please mark all of the places in which you participated in clinical training as part of your university clinic, field study site, or externship during your graduate school experience.

- Delivering one-on-one intervention outside the classroom
- Delivering group intervention outside the classroom
- Delivering intervention in the resource room
- Delivering intervention in a self-contained classroom
- Delivering classroom-based intervention for preschoolers
- Delivering classroom-based intervention with shared teaching in elementary classroom
- Delivering intervention in elementary classroom in which did not work directly with classroom teacher.
- Delivering intervention in the general education classroom, but off to the side, not part of the general education classroom activity
- Delivering intervention in Middle and High School classroom in which you shared planning and teaching with the classroom teacher
- Delivering intervention in Middle and High School classroom independent of the classroom teacher
- Consultation with school personnel

Definitions:

Outside the Classroom: Providing students intervention in a place that is not in the general education classroom but is not a self-contained classroom or resource room (e.g., the SLP's office or classroom, the hallway, or a conference room)

In the Classroom: Providing students intervention within the general education classroom and in conjunction with the activities being completed by their peers as well as occurring in the same area of the room as their peers (not at a table away from the class completing differing activities as his/her peers).

4. Please indicate the amount of instruction and feedback you received from your supervisor during your clinical fellowship year (CFY).

- No suggestions or feedback for improvement
  - General suggestions for improvement (e.g., goal writing, intervention strategies)
  - Specific suggestions for improvement in your intervention on five children or less (e.g., intervention goals or place for intervention)
  - Specific suggestions for improvement in your intervention on six or more children (e.g., intervention goals or place for intervention)
  - Other
-

5. Please indicate any of the following types of professional development which you have completed in the last 5 years NOT including graduate training.

- Read journals
- Attended state conference(s)
- Attended national conference(s)
- Attended seminar
- Completed college course
- District training
- On-line programs
- Teleseminars

6. Which of the following best describes the area which your school district serves?

- Rural
- Suburban
- Urban

7. Please specify the number of students on your caseload who are in the following grades:

Preschool	_____
Elementary	_____
Middle School/Junior High	_____
High School	_____
TOTAL	_____

8. Please check the appropriate description regarding your current employment status as a school SLP.

- Full-time
- Part-time (anything less than 100%)

9. For any of the children that you provide intervention, do you use block scheduling?

Block scheduling is defined as when the child is seen 4 to 5 times a week for 3 to 6 weeks followed by a break for the same amount of time.

- Yes
- No



10. Please select the teaming model that best matches the one used at your primary school.

- Multidisciplinary – Team members provide services independent of one another with a single person responsible for final decisions. There is little to no collaboration or communication between service providers. Similar to the medical model.
- Interdisciplinary – Team members, including the family, provide services independent of one another with shared and equal decision making ability. These teams often utilize a coordinator for each child, and team members will collaborate with one another.
- Transdisciplinary – Services are provided by one or two professionals with other professionals providing consultation and training. A case coordinator is utilized, and the family is involved throughout the process.
- Other

11. Which of the following statements best describes how you determine the amount of time and the place a child will participate in speech and language intervention?

- I, the speech-language pathologist, determine the best place and for how long intervention is provided based upon my knowledge and the severity of the child's disability.
- The child's team members work together to determine the best place and for how long speech and language intervention is provided.
- I, the speech-language pathologist, determine the best place and for how long intervention will be provided after receiving input from other team members.

12. Please specify the number of children seen in group intervention sessions during a typical week. \_\_\_\_\_

13. Please specify the number of students seen in individual intervention sessions during a typical week. \_\_\_\_\_

14. Please specify the number of students on your caseload seen in the following places.

- \_\_\_\_\_ General education classroom within class setting
- \_\_\_\_\_ General education classroom in small group or individually
- \_\_\_\_\_ Outside the classroom (e.g., speech room)
- \_\_\_\_\_ Resource room
- \_\_\_\_\_ Self-contained classroom
- \_\_\_\_\_ Other

Definitions: Outside the Classroom: Providing students intervention in a place that is not in the general education classroom but is not a self-contained classroom or resource room (e.g., the SLP's office or classroom, the hallway, or a conference room)

In the Classroom: Providing students intervention within the general education classroom and in conjunction with the activities being completed by their peers as well as occurring in the same area of the room as their peers (not at a table away from the class completing differing activities as his/her peers).

15. Please specify the typical amount of time spent on the following activities each week at work.

- \_\_\_\_\_ Direct intervention for IEP students
- \_\_\_\_\_ Consultation
- \_\_\_\_\_ Meetings (pre-referral, IEP, assessment)
- \_\_\_\_\_ Paperwork
- \_\_\_\_\_ Pre-referral intervention (Tier II interventions, interventions for children not yet on caseload)
- \_\_\_\_\_ Supervising speech therapy assistant
- \_\_\_\_\_ Professional development
- \_\_\_\_\_ Other

16. Please select the person that is most likely to conduct on-site observations of your intervention/assessments as part of your school contract.

- \_\_\_\_\_ Nobody observes me
- \_\_\_\_\_ Special education supervisor (not Speech-Language Pathologist)
- \_\_\_\_\_ Building administrator (e.g., principal, assistant principal)
- \_\_\_\_\_ Speech-Language Pathologist (district supervisor)
- \_\_\_\_\_ Speech-Language Pathologist (peer)
- \_\_\_\_\_ Other

17. How many different classrooms have students on your caseload? For example, an SLP who sees five first graders who are in the same classroom would have only one. In contrast, an SLP with five first graders in two different classrooms would have two. \_\_\_\_\_

18. How many teachers do you consult with regarding students on your caseload during the typical week? \_\_\_\_\_

19. For how many classrooms do you provide intervention in the general education classroom during the typical week? \_\_\_\_\_

20. During a typical week, for how many students do you provide intervention that are not on your caseload (e.g., Tier II services or children who are in the evaluation process)? \_\_\_\_\_

21. How much time during the typical week do you spend providing intervention to students in the process of being evaluated (Tier II services)? \_\_\_\_\_

22. Does your administration in the school allow you to provide speech and language services for the AMOUNT OF TIME necessary to improve the child's skills?  
Yes    No    Sometimes

23. Does your administration in the school allow you to provide speech and language services in the PLACE necessary to improve the child's skills?  
Yes    No    Sometimes

24. For the students on your caseload, for how many did you have to adjust the amount of time due to a student's level of motivation? \_\_\_\_\_

25. For the students on your caseload, for how many did you have to adjust the PLACE you provided intervention due to a student's level of motivation?  
\_\_\_\_\_

26. For the students on your caseload, how many were impacted in regards to the AMOUNT OF TIME intervention is provided due to a need for peer modeling?  
\_\_\_\_\_

27. For the students on your caseload, how many were impacted in regards to the PLACE intervention is provided due to a need for peer modeling? \_\_\_\_\_

**Section II: Time**

28. Please select the top consideration in regards to the child's characteristics when deciding the AMOUNT OF TIME to provide intervention for students on your caseload.

- \_\_\_\_\_ The child's communication needs in relation to his/her general education curriculum.
- \_\_\_\_\_ The nature and severity of the child's disorder.
- \_\_\_\_\_ The child's strengths, needs, and emerging abilities.
- \_\_\_\_\_ The motivation and attitude of the child.
- \_\_\_\_\_ The child's age and developmental level.
- \_\_\_\_\_ The need for peer modeling.

29. Please select the top consideration in regards to the workplace characteristics when deciding the AMOUNT OF TIME to provide intervention for students on your caseload.

- \_\_\_\_\_ Caseload size
- \_\_\_\_\_ Administrative support
- \_\_\_\_\_ Workload size
- \_\_\_\_\_ Team Input

30. Please select the top consideration from the following when deciding the AMOUNT OF TIME to provide intervention for students on your caseload.

- \_\_\_\_\_ Relationship with school personnel
- \_\_\_\_\_ Clinical training
- \_\_\_\_\_ Years worked
- \_\_\_\_\_ Professional development

31. Please select the top THREE considerations from the following when deciding the AMOUNT OF TIME to provide intervention for students on your caseload.

- \_\_\_\_\_ Caseload size
- \_\_\_\_\_ Relationship with school personnel
- \_\_\_\_\_ The child's communication needs in relation to his/her general education curriculum.
- \_\_\_\_\_ The nature and severity of the child's disorder.
- \_\_\_\_\_ The child's strengths, needs, and emerging abilities.
- \_\_\_\_\_ The child's age and developmental level.
- \_\_\_\_\_ Team Input
- \_\_\_\_\_ Administrative support
- \_\_\_\_\_ The need for peer modeling.
- \_\_\_\_\_ Years worked
- \_\_\_\_\_ The motivation and attitude of the child.
- \_\_\_\_\_ Professional development
- \_\_\_\_\_ Workload size
- \_\_\_\_\_ Clinical training

32. For the following grades, please select the time that you or your assistant deliver intervention for the child on your caseload with the MOST SEVERE DISABILITY in each of the grade levels. Please provide answers ONLY for those grades represented on your caseload

Grade Level	1 time a week for 20-30 min.	2-3 times a week for 20-30 min.	1 time a week for 45-60 min.	2 or more times a week for 45-60 min.	*Block Scheduling	Consultation	Other	No Child in this Grade on Caseload
PreK								
K								
1 <sup>st</sup>								
2 <sup>nd</sup>								
3 <sup>rd</sup>								
4 <sup>th</sup>								
5 <sup>th</sup>								
Middle School/ Junior High								
High School								

\*Block scheduling is defined as when the child is seen 4 to 5 times a week for 3 to 6 weeks followed by a break for the same amount of time.

33. For the following grades, please select the time that you or your assistant deliver intervention for the child on your caseload with a MODERATE DISABILITY in each of the grade levels. Please provide answers ONLY for those grades represented on your caseload.

Grade Level	1 time a week for 20-30 min.	2-3 times a week for 20-30 min.	1 time a week for 45-60 min.	2 or more times a week for 45-60 min.	*Block Scheduling	Consultation	Other	No Child in this Grade on Caseload
PreK								
K								
1 <sup>st</sup>								
2 <sup>nd</sup>								
3 <sup>rd</sup>								
4 <sup>th</sup>								
5 <sup>th</sup>								
Middle School/ Junior High								
High School								

\*Block scheduling is defined as when the child is seen 4 to 5 times a week for 3 to 6 weeks followed by a break for the same amount of time.

34. For the following grades, please select the time that you or your assistant deliver intervention for the child on your caseload with the LEAST SEVERE DISABILITY in each of the grade levels. Please provide answers ONLY for those grades represented on your caseload.

Grade Level	1 time a week for 20-30 min.	2-3 times a week for 20-30 min.	1 time a week for 45-60 min.	2 or more times a week for 45-60 min.	*Block Scheduling	Consultation	Other	No Child in this Grade on Caseload
PreK								
K								
1 <sup>st</sup>								
2 <sup>nd</sup>								
3 <sup>rd</sup>								
4 <sup>th</sup>								
5 <sup>th</sup>								
Middle School/ Junior High								
High School								

\*Block scheduling is defined as when the child is seen 4 to 5 times a week for 3 to 6 weeks followed by a break for the same amount of time.



35. For each of the following disabilities please select the time that you or your assistant deliver intervention for the child on your caseload with the MOST SEVERE DISABILITY Please answer for ONLY those disabilities represented on your caseload.

Disability	1 time a week for 20-30 min.	2-3 times a week for 20-30 min.	1 time a week for 45-60 min.	2 or more times a week for 45-60 min.	*Block Scheduling	Consultation	Other	No Child in this Grade on Caseload
Artic/phon disorder								
Autism/ PDD								
Prag/ Social								
Learning disability								
Mental retardation/ developmental disability (MR/DD)								
Nonverbal/ AAC								
Reading and writing (literacy)								
Specific language impairmt (SLI)								

\*Block scheduling is defined as when the child is seen 4 to 5 times a week for 3 to 6 weeks followed by a break for the same amount of time.

36. For each of the following disabilities please select the time that you or your assistant deliver intervention for the child on your caseload with a MODERATE DISABILITY. Please answer for ONLY those disabilities represented on your caseload.

Disability	1 time a week for 20-30 min.	2-3 times a week for 20-30 min.	1 time a week for 45-60 min.	2 or more times a week for 45-60 min.	*Block Scheduling	Consultation	Other	No Child in this Grade on Caseload
Artic/phon disorder								
Autism/ PDD								
Prag/ Social								
Learning disability								
Mental retardation/ developmental disability (MR/DD)								
Nonverbal/ AAC								
Reading and writing (literacy)								
Specific language impairment (SLI)								

\*Block scheduling is defined as when the child is seen 4 to 5 times a week for 3 to 6 weeks followed by a break for the same amount of time.

37. For each of the following disabilities please select the time that you or your assistant deliver intervention for the child on your caseload with the LEAST SEVERE DISABILITY. Please answer for ONLY those disabilities represented on your caseload.

Disability	1 time a week for 20-30 min.	2-3 times a week for 20-30 min.	1 time a week for 45-60 min.	2 or more times a week for 45-60 min.	*Block Scheduling	Consultation	Other	No Child in this Grade on Caseload
Artic/phon disorder								
Autism/ PDD								
Prag/ Social								
Learning disability								
Mental retardation/ developmental disability (MR/DD)								
Nonverbal/ AAC								
Reading and writing (literacy)								
Specific language impairmt (SLI)								

\*Block scheduling is defined as when the child is seen 4 to 5 times a week for 3 to 6 weeks followed by a break for the same amount of time.

**Section III: Place**

38. Please select the top consideration in regards to the child's characteristics when deciding WHERE to provide intervention for students on your caseload.

- \_\_\_\_\_ The child's communication needs in relation to his/her general education curriculum.
- \_\_\_\_\_ The nature and severity of the child's disorder.
- \_\_\_\_\_ The child's strengths, needs, and emerging abilities.
- \_\_\_\_\_ The motivation and attitude of the child.
- \_\_\_\_\_ The child's age and developmental level.
- \_\_\_\_\_ The need for peer modeling.

39. Please select the top consideration in regards to the workplace characteristics when deciding the PLACE to provide intervention for students on your caseload.

- \_\_\_\_\_ Caseload size
- \_\_\_\_\_ Administrative support
- \_\_\_\_\_ Workload size
- \_\_\_\_\_ Team Input

40. Please select the top consideration from the following when deciding the PLACE to provide intervention for students on your caseload.

- \_\_\_\_\_ Relationship with school personnel
- \_\_\_\_\_ Clinical training
- \_\_\_\_\_ Years worked
- \_\_\_\_\_ Professional development

41. Please select the top THREE considerations from the following when deciding the PLACE to provide intervention for students on your caseload.

- \_\_\_\_\_ Caseload size
- \_\_\_\_\_ Relationship with school personnel
- \_\_\_\_\_ The child's communication needs in relation to his/her general education curriculum.
- \_\_\_\_\_ The nature and severity of the child's disorder.
- \_\_\_\_\_ The child's strengths, needs, and emerging abilities.
- \_\_\_\_\_ The child's age and developmental level.
- \_\_\_\_\_ Team Input
- \_\_\_\_\_ Administrative support
- \_\_\_\_\_ The need for peer modeling.
- \_\_\_\_\_ Years worked
- \_\_\_\_\_ The motivation and attitude of the child.
- \_\_\_\_\_ Professional development
- \_\_\_\_\_ Workload size
- \_\_\_\_\_ Clinical training

42. For the following grades, please select the place that you or your assistant provide intervention for the child with a SEVERE DISABILITY in each of the grade levels.  
Please provide answers ONLY for those grades represented on your caseload.

**Definitions:**

**Outside the Classroom:** Providing students intervention in a place that is not in the general education classroom but is not a self-contained classroom or resource room (e.g., the SLP's office or classroom, the hallway, or a conference room)

**In the Classroom:** Providing students intervention within the general education classroom and in conjunction with the activities being completed by their peers as well as occurring in the same area of the room as their peers (not at a table away from the class).

<b>Grade Level</b>	<b>1-on-1 Outside the Classroom</b>	<b>Group Outside the Classroom</b>	<b>Self-contained Classroom</b>	<b>In the Classroom</b>	<b>Resource Room</b>	<b>Other</b>	<b>No Child in this Grade on Caseload</b>
PreK							
K							
1 <sup>st</sup>							
2 <sup>nd</sup>							
3 <sup>rd</sup>							
4 <sup>th</sup>							
5 <sup>th</sup>							
Middle School/ Junior High							
High School							

43. For the following grades, please select the place that you or your assistant provide intervention for the child with a MODERATE DISABILITY in each of the grade levels. Please provide answers ONLY for those grades represented on your caseload.

**Definitions:**

**Outside the Classroom:** Providing students intervention in a place that is not in the general education classroom but is not a self-contained classroom or resource room (e.g., the SLP's office or classroom, the hallway, or a conference room)

**In the Classroom:** Providing students intervention within the general education classroom and in conjunction with the activities being completed by their peers as well as occurring in the same area of the room as their peers (not at a table away from the class completing differing activities as his/her peers).

<b>Grade Level</b>	<b>1-on-1 Outside the Classroom</b>	<b>Group Outside the Classroom</b>	<b>Self-contained Classroom</b>	<b>In the Classroom</b>	<b>Resource Room</b>	<b>Other</b>	<b>No Child in this Grade on Caseload</b>
PreK							
K							
1 <sup>st</sup>							
2 <sup>nd</sup>							
3 <sup>rd</sup>							
4 <sup>th</sup>							
5 <sup>th</sup>							
Middle School/ Junior High							
High School							

44. For the following grades, please select the place that you or your assistant provide intervention for the child with the LEAST SEVERE DISABILITY in each of the grade levels. Please provide answers ONLY for those grades represented on your caseload.

**Definitions:**

**Outside the Classroom:** Providing students intervention in a place that is not in the general education classroom but is not a self-contained classroom or resource room (e.g., the SLP's office or classroom, the hallway, or a conference room)

**In the Classroom:** Providing students intervention within the general education classroom and in conjunction with the activities being completed by their peers as well as occurring in the same area of the room as their peers (not at a table away from the class).

<b>Grade Level</b>	<b>1-on-1 Outside the Classroom</b>	<b>Group Outside the Classroom</b>	<b>Self-contained Classroom</b>	<b>In the Classroom</b>	<b>Resource Room</b>	<b>Other</b>	<b>No Child in this Grade on Caseload</b>
PreK							
K							
1 <sup>st</sup>							
2 <sup>nd</sup>							
3 <sup>rd</sup>							
4 <sup>th</sup>							
5 <sup>th</sup>							
Middle School/ Junior High							
High School							



45. For each of the following disabilities please select the place that you or your assistant deliver intervention for the child on your caseload with the MOST SEVERE DISABILITY listed below. Please answer for ONLY those disabilities represented on your caseload.

**Definitions:**

**Outside the Classroom:** Providing students intervention in a place that is not in the general education classroom but is not a self-contained classroom or resource room (e.g., the SLP's office or classroom, the hallway, or a conference room)

**In the Classroom:** Providing students intervention within the general education classroom and in conjunction with the activities being completed by their peers as well as occurring in the same area of the room as their peers (not at a table away from the class).

<b>Grade Level</b>	<b>1-on-1 Outside the Classroom</b>	<b>Group Outside the Classroom</b>	<b>Self-contained Classroom</b>	<b>In the Classroom</b>	<b>Resource Room</b>	<b>Other</b>	<b>No Child in this Grade on Caseload</b>
Artic/phon disorder							
Autism/PDD							
Prag/ Social							
Learning disability							
Mental retardation/developmental disability (MR/DD)							
Nonverbal/ AAC							
Reading and writing (literacy)							
Specific language impairment (SLI)							

46. For each of the following disabilities please select the place that you or your assistant deliver intervention for the child on your caseload with a MODERATE DISABILITY listed below. Please answer for ONLY those disabilities represented on your caseload.

**Definitions:**

**Outside the Classroom:** Providing students intervention in a place that is not in the general education classroom but is not a self-contained classroom or resource room (e.g., the SLP's office or classroom, the hallway, or a conference room)

**In the Classroom:** Providing students intervention within the general education classroom and in conjunction with the activities being completed by their peers as well as occurring as in the same area of the room as their peers (not at a table away from the class).

<b>Grade Level</b>	<b>1-on-1 Outside the Classroom</b>	<b>Group Outside the Classroom</b>	<b>Self-contained Classroom</b>	<b>In the Classroom</b>	<b>Resource Room</b>	<b>Other</b>	<b>No Child in this Grade on Caseload</b>
Artic/phon disorder							
Autism/PDD							
Prag/ Social							
Learning disability							
Mental retardation/developmental disability (MR/DD)							
Nonverbal/ AAC							
Reading and writing (literacy)							
Specific language impairmt (SLI)							

47. For each of the following disabilities please select the place that you or your assistant deliver intervention for the child on your caseload with the LEAST SEVERE DISABILITY listed below. Please answer for ONLY those disabilities represented on your caseload.

**Definitions:**

**Outside the Classroom:** Providing students intervention in a place that is not in the general education classroom but is not a self-contained classroom or resource room (e.g., the SLP's office or classroom, the hallway, or a conference room)

**In the Classroom:** Providing students intervention within the general education classroom and in conjunction with the activities being completed by their peers as well as occurring in the same area of the room as their peers (not at a table away from the class).

<b>Grade Level</b>	<b>1-on-1 Outside the Classroom</b>	<b>Group Outside the Classroom</b>	<b>Self-contained Classroom</b>	<b>In the Classroom</b>	<b>Resource Room</b>	<b>Other</b>	<b>No Child in this Grade on Caseload</b>
Artic/phon disorder							
Autism/PDD							
Prag/ Social							
Learning disability							
Mental retardation/developmental disability (MR/DD)							
Nonverbal/ AAC							
Reading and writing (literacy)							
Specific language impairment (SLI)							

48. Would you be willing to complete a brief (15-20 minutes) phone interview to elaborate on some of the answers you provided in the above questionnaire?

- Yes
- No

If yes, please indicate the best way to contact you to schedule the interview (e.g., phone number and/or email address)

---

Thank you very much for taking the time to complete the questionnaire.

## Email Interview Questions

1. Please review the following question from the online survey which you completed and then provide feedback regarding your answer.

Please indicate any of the following types of professional development which you have completed in the last 5 years NOT including graduate training.

- Read journals
- Attended state conference(s)
- Attended national conference(s)
- Attended seminar
- Completed college course
- District training
- On-line programs
- Teleseminars

Could you tell me the items you selected?

What topics did they pertain to and how did it relate to your job?

What were the motivating factors for you choosing these activities?

2. As an SLP, there are many factors that impact the type of services you provide students on your caseload. On the survey, three categories of factors were identified: child, workplace and SLP. The items in each of these are listed below as well as additional questions asking you to explain your answers in more detail.

Child Factors

- Child's communication needs
- Nature and severity of the child's disorder
- Child's strengths, needs and emerging abilities
- Child's motivation and attitude
- Child's age and developmental level
- Child's need for peer modeling

Workplace Factors

- Caseload size
- Administrative support
- Workload size
- Team input

SLP Factors

- SLP's relationship with school personnel
- SLP's clinical training
- Number of years the SLP worked in the public schools
- SLP's professional development

The results of the current study indicated that SLPs report the 3 most important factors in deciding the AMOUNT OF TIME that children participate in intervention as being (1) the nature and severity of the child's disorder (2) the child's communication needs and (3) the child's strengths and needs. However, when looking at the AMOUNT OF TIME that students across different grades and disabilities participated in intervention there were few differences across severity levels. Overall, children were seen 2-3 times a week for 20-30 minutes regardless of their grade, disability and severity level.

How would you explain this finding?

Do other factors not listed above impede your ability to provide intervention? If so, what are these factors?

How often do these other factors impact your ability to provide intervention?

3. As an SLP, there are many factors that impact the type of services you provide students on your caseload. On the survey, three categories of factors were identified: child, workplace and SLP. The items in each of these are listed below as well as additional questions asking you to explain your answers in more detail.

Child Factors

- Child's communication needs
- Nature and severity of the child's disorder
- Child's strengths, needs and emerging abilities
- Child's motivation and attitude
- Child's age and developmental level
- Child's need for peer modeling

Workplace Factors

- Caseload size
- Administrative support
- Workload size
- Team input

SLP Factors

- SLP's relationship with school personnel
- SLP's clinical training
- Number of years the SLP worked in the public schools
- SLP's professional development

The results of the current study indicated that SLPs report the 3 most important factors in deciding the PLACE in which children participate in intervention as being (1) the nature and severity of the child's disorder (2) the child's communication needs and (3) the child's strengths and needs. However, when looking at the PLACE that students across different grades and disabilities participated in intervention there was little variation across severity levels. Overall, children were seen in groups outside of the classroom.

How would you explain this finding?

Do other factors impede your ability to provide intervention? If so, what are these factors?

How often do these other factors impact your ability to provide intervention?



4. The following questions pertain to your supervisor.

What is the job title of the person who supervises you and does he/she observe you providing intervention during the school year?

If your supervisor does not observe you, is there a person within your school district or educational service center who does observe you providing intervention or conducting assessments each school year (e.g., the school principal, the special education director, or another SLP)?

What types of observations do they conduct?

How often are you observed?

What type of feedback do you receive?

Could you give me some specific examples of how these observations have improved your ability to provide intervention effectively?

5. Recent changes in IDEA and NCLB have affected schools greatly and how school personnel interact. Could you describe your role within the school now?

Has your role in the school changed? If so, how?

Please briefly explain your district's use of Response to Intervention (RTI) and your role within that process.

What affect has Response to Intervention (RTI) had on your workload?

## Appendix D

### HSCL Approval

4/24/2008  
HSCL #17352

Jayne Brandel  
Speech-Language-Hearing  
3001 Dole Center

The Human Subjects Committee Lawrence reviewed your research update application for project

17352 Brandel/Loeb (SPLH) A Survey of Speech-Language Services in Public Schools

and approved this project under the expedited procedure provided in 45 CFR 46.110 (f) (7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

Since your research presents no risk to participants and involves no procedures for which written consent is normally required outside of the research context HSCL may waive the requirement for a signed consent form (45 CFR 46.117 (c) (2)). Your information statement meets HSCL requirements. The Office for Human Research Protections requires that your information statement must include the note of HSCL approval and expiration date, which has been entered on the form sent back to you with this approval.

1. At designated intervals until the project is completed, a Project Status Report must be returned to the HSCL office.
2. Any significant change in the experimental procedure as described should be reviewed by this Committee prior to altering the project.
3. Notify HSCL about any new investigators not named in original application. Note that new investigators must take the online tutorial at [http://www.rcr.ku.edu/hsc/hsp\\_tutorial/000.shtml](http://www.rcr.ku.edu/hsc/hsp_tutorial/000.shtml).
4. Any injury to a subject because of the research procedure must be reported to the Committee immediately.
5. When signed consent documents are required, the primary investigator must retain the signed consent documents for at least three years past completion of the research activity. If you use a signed consent form, provide a copy of the consent form to subjects at the time of consent.
6. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.

Please inform HSCL when this project is terminated. You must also provide HSCL with an annual status report to maintain HSCL approval. Unless renewed, approval lapses one year after approval date. If your project receives funding which requests an annual update approval, you must request this from HSCL one month prior to the annual update. Thanks for your cooperation. If you have any questions, please contact me.

Sincerely,

David Hann  
HSCL Coordinator

cc: Diane Loeb

## Invitation to Participate

**To:** [Email]

**From:** [jbrandel@ku.edu](mailto:jbrandel@ku.edu)

---

**Subject:** Invitation to participate

**Body:** April 16, 2008

My name is Jayne Brandel, and I am a doctoral student at the University of Kansas. Before returning to study for a doctoral degree, I worked as an SLP in the public schools for two years. As a school speech-language pathologist, there are many demands upon your time and skills. My dissertation is focusing on these demands and how they impact service delivery. I hope that you can take ten to fifteen minutes from your busy schedule to help me.

I would greatly appreciate your response to the questionnaire that is linked to this email. Your name will not be associated with publication or reporting of these data. It is possible, however, with internet communications, that through intent or accident someone other than the intended recipient may see your response. Your answers will provide us with insight into your service delivery choices. Please connect to the link: <http://www.surveymonkey.com/s.aspx> to complete my questionnaire. By doing so, you are agreeing to participate.

If you have any questions about your rights as a research participant, you may contact the Human Subjects Committee Lawrence Campus (HSCL) office at 785-864-7429 or 785-864-7385 or write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, email [dhann@ku.edu](mailto:dhann@ku.edu) or [mdenning@ku.edu](mailto:mdenning@ku.edu).

During the course of this questionnaire, you will be asked questions regarding the composition of your caseload. Please have this information readily available. If you do not wish to receive further emails from us, please click the link below, and you will be automatically removed from our mailing list.  
<http://www.surveymonkey.com/optout.aspx>

Thank you!

Jayne Brandel, M.A., CCC-SLP  
[jbrandel@ku.edu](mailto:jbrandel@ku.edu)  
785-864-0658

Faculty Supervisor:  
Diane Frome Loeb, Ph.D., CCC-SLP  
[dianelo@ku.edu](mailto:dianelo@ku.edu)  
785-864-0638

## Second Reminder

**To:** [Email]

**From:** jbrandel@ku.edu

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**Subject:** School Intervention Survey

**Body:** My name is Jayne Brandel, and I recently sent you an email requesting your assistance on my dissertation. I am a doctoral student at the University of Kansas. Before returning to study for a doctoral degree, I worked as an SLP in the public schools for two years. As a school speech-language pathologist, there are many demands upon your time and skills. My dissertation is focusing on these demands and how they impact service delivery. I hope that you can take ten to fifteen minutes from your busy schedule to help me.

I would greatly appreciate your response to the questionnaire that is linked to this email. Your name will not be associated with publication or reporting of these data. It is possible, however, with internet communications, that through intent or accident someone other than the intended recipient may see your response. Your answers will provide us with insight into your service delivery choices. Please connect to the link: <http://www.surveymonkey.com/s.aspx> to complete my questionnaire. By doing so, you are agreeing to participate.

If you have any questions about your rights as a research participant you may contact the Human Subjects Committee Lawrence Campus (HSCL) office at 864-7429 or 864-7385 or write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, email dhann@ku.edu or mdenning@ku.edu.

During the course of this questionnaire, you will be asked questions regarding the composition of your caseload. Please have this information readily available. If you do not wish to receive further emails from us, please click the link below, and you will be automatically removed from our mailing list.

<http://www.surveymonkey.com/optout.aspx>

Thank you!

Jayne Brandel, M.A., CCC-SLP

jbrandel@ku.edu

785-864-0658

Faculty Supervisor:

Diane Frome Loeb, Ph.D., CCC-SLP

dianelo@ku.edu

785-864-0638

## Final Reminder

**To:** [Email]

**From:** [jbrandel@ku.edu](mailto:jbrandel@ku.edu)

**Subject:** Please complete by May 23<sup>rd</sup>

**Body:** May 18, 2008

My name is Jayne Brandel, and I am a doctoral student at the University of Kansas. Before returning to study for a doctoral degree, I worked as an SLP in the public schools for two years. As a school speech-language pathologist, there are many demands upon your time and skills. My dissertation is focusing on these demands and how they impact service delivery. I hope that you can take ten to fifteen minutes from your busy schedule to help me. I will not be gathering data after Friday, May 23<sup>rd</sup> because the school year will be ending for many of you.

I would greatly appreciate your response to the questionnaire that is linked to this email. Your name will not be associated with publication or reporting of these data. It is possible, however, with internet communications, that through intent or accident someone other than the intended recipient may see your response. Your answers will provide us with insight into your service delivery choices. Please connect to the link: <http://www.surveymonkey.com/s.aspx> to complete my questionnaire. By doing so, you are agreeing to participate.

If you have any questions about your rights as a research participant, you may contact the Human Subjects Committee Lawrence Campus (HSCL) office at 785-864-7429 or 785-864-7385 or write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, email [dhann@ku.edu](mailto:dhann@ku.edu) or [mdenning@ku.edu](mailto:mdenning@ku.edu).

During the course of this questionnaire, you will be asked questions regarding the composition of your caseload. Please have this information readily available. If you do not wish to receive further emails from us, please click the link below, and you will be automatically removed from our mailing list.

<http://www.surveymonkey.com/optout.aspx>

Thank you!

Jayne Brandel, M.A., CCC-SLP  
[jbrandel@ku.edu](mailto:jbrandel@ku.edu)  
785-864-0658

Faculty Supervisor:

Diane Frome Loeb, Ph.D., CCC-SLP  
[dianelo@ku.edu](mailto:dianelo@ku.edu)

785-864-0638 further emails from us, please click the link below, and you will be automatically removed from our mailing list.

<http://www.surveymonkey.com/optout.aspx>