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## **Scope of *OJMSHA***

The Online Journal of MSHA is a peer-reviewed interprofessional journal publishing articles that make clinical and research contributions to current practices in the fields of Speech-Language Pathology and Audiology. The journal is also intended to provide updates on various professional issues faced by our members while bringing them the latest and most significant findings in the field of communication disorders.

The journal welcomes academicians, clinicians, graduate and undergraduate students, and other allied health professionals who are interested or engaged in research in the field of communication disorders. The interested contributors are highly encouraged to submit their manuscripts/papers to [msha@shomemsha.org](mailto:msha@shomemsha.org). An inquiry regarding specific information about a submission may be emailed to Jayanti Ray ([jray@semo.edu](mailto:jray@semo.edu)).

Upon acceptance of the manuscripts, a PDF version of the journal will be posted online. Our first issue is expected to be published in August. This publication is open to both members and nonmembers. Readers can freely access or cite the article.

**The Online Journal of Missouri Speech-Language-Hearing Association**

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# Story Presentation Effects on the Narratives of Preschool Children From Low and Middle Socioeconomic Homes

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## Abstract

The purpose of this study was to examine whether preschool children from low and middle socioeconomic status (SES) homes differ in their production of fictional story retells under two different presentation conditions. Story retells were elicited from 56 children, 28 from low-SES homes and 28 from mid-SES homes, in northeast Kansas preschools, once with an oral-only story model and once with a picture-supported oral story model. Analyses with mixed design ANOVAs indicated both groups told more complete stories under the picture-supported presentation of the story model than with the oral-only model in terms of inclusion of story grammar units and evaluative information as well as in terms of lexical complexity. In addition, reduced literary and lexical complexity was evident in the retells of the group of children from low-SES homes. These findings suggest that visual supports are beneficial in making story elements more salient for preschoolers from both low and middle SES homes. These findings also reveal the discrepancy in the narrative skills of children from these two SES groups. Implications for future research are discussed.

**Keywords:** narratives, preschool children, socioeconomic status, discourse analysis

## Introduction

The ability to retell a narrative in kindergarten is a significant predictor of later academic success (Fazio, Naremore, & Connell, 1996). Children with early language delay exhibit continuing weaknesses in story grammar structure, lexical complexity, and evaluative information in their narratives (Manhardt & Rescorla, 2002). However, the participants in the Manhardt and Rescorla (2002) study came from middle to upper-middle class homes and focused on the narrative skills of eight- and

nine-year-old children with expressive language delays. Fazio, Naremore, and Connell (1996) tracked children living in poverty who were at risk for specific language impairment from kindergarten to third grade on different language measures. Less is known about the emerging fictional narrative skills of preschool children across the language continuum from low socioeconomic status (SES) homes. This research examines the narratives of preschool children from low and middle SES homes in terms of lexical complexity and diversity when elicited under two retell conditions.

## What Are Narratives

Narratives are the temporal sequencing of real or imaginary events (McCabe, 1991). Bruner (1990) described narrative as one of the most universal and potent discourse forms in communication, requiring the speaker to not only convey information about what happens, but also to express the reason for events, order events in a certain way, compose events logically in terms of human relationships, and interpret events through a personal perspective. This evaluative role has been deemed equally important as the informative role in narratives (Labov, 1972). These evaluative comments reveal the speaker's reason for telling the narrative and what the listener should think about characters, place, and events within the story, or, simply stated, the point of the narrative. Bamberg and Damrad-Frye (1991) noted that evaluative comments also function as sequential links between story events, adding to story coherence. Bamberg and Damrad-Frye (1991) found that even young children place events and characters in perspective and emphasize their relative importance (e.g., Baby Bear was *really sad*). As they get older, children increasingly use evaluative comments to organize the sequence of events into a comprehensive, coherent sequence of events (e.g., Goldilocks ran away fast *because* she saw the bears by the bed).

Successful narratives are a complex integration of the domains of language skills, including vocabulary, syntax, morphology, and pragmatics (McCabe & Rollins, 1994), requiring that all aspects of language be honed at the discourse level. Narrative production must be



expressed in a form or style which is predictable for the listener to anticipate and comprehend the discourse (Heath, 1986). Therefore, the speaker must be sensitive and responsive to the needs of the listener. Children learn how to represent sequenced events and evaluative comments in extended decontextualized discourse in a form recognized by their culture with parental and caregiver prompts in conversation. Adults request information and shape utterances (and later written passages) from children for increased clarity, specificity, and referential sufficiency, beginning with parents and their toddlers and continuing with teachers and their students (Levy, 2003; Peterson & McCabe, 1994).

Hudson and Shapiro (1991) examined the narratives of preschool children and found that young children were more adept at structuring their personal narratives than structuring general event scripts or fictional stories. By three years old, the children could report the events of routine occurrences such as dressing and eating, including more actions and more complexity with age. Fictional stories were found to be the most difficult due to the complex requirements for a coherent story, such as knowledge about the event, event schemas in general, and general social knowledge (e.g., motivations, interactions, personality types).

### ***The Academic Impact of Narrative Skills***

Narratives are representative of the language demanded of the classroom because they are less contextualized than most conversation and are principally rule-governed (Leap, 1993). Daily in school, stories are read and written, and personal and fictional experiences are shared, making narrative a fundamental component of achievement for both reading and writing (Snow & Dickenson, 1999). Narratives are utilized in the classroom for instructional purposes across subjects, a means for children to learn public speaking, a support for writing, and a method for developing arguments and thinking in general (McCabe, 1997). They play a central role in education, both as a tool of instruction and as the foundation of event knowledge, to foster cognitive growth (Peterson, 1994). The ability to relate a coherent narrative in kindergarten has

been determined to predate and predict successful progress in school literacy acquisition (Catts, Fey, Tomblin, & Zhang, 2002; Dickinson & McCabe, 2001; Feagans, 1982; Griffin, Hemphill, Camp, & Wolf, 2004) and is deemed to be one of the important oral language competencies necessary to become a skilled reader (Rollins, McCabe, & Bliss, 2000). Upon initial entry into school, children are expected to be responsive to narrative prompts, and their narratives are expected to be informative and decontextualized. Children entering Grade 1 unable to produce adequate narratives may exhibit difficulty with transitioning to written texts (Peterson, 1993). For children from poverty, Fazio, Naremore, and Connell (1996) found that the best predictor of academic success in second grade was the ability to retell a story in kindergarten.

Moreover, Griffin, Hemphill, Camp, and Wolf (2004) found that the ability of five-year-old children to use evaluative devices to mark the significance of events in their fictional narratives was predictive of their reading comprehension skills as eight-year-olds, and the ability of the five-year-olds to control story grammar organization in oral narratives predicted their written narrative skills as eight-year-olds, again highlighting the need for supporting the development of essential oral competencies before kindergarten age.

### ***Narrative Elicitation***

Narrative elicitation tasks can take many forms, including story retells and original story generation tasks, all with varying amounts of pictorial cues and verbal prompts (McCabe & Bliss, 2003). The story retell format consists of the repetition of a story after a verbal model spoken by an adult or played on audiotape. This retelling can be after an oral-only model or include picture supports. Picture stimuli can be a single picture, a sequence of pictures, or a wordless picture book.

Elicitation characteristics have been demonstrated to significantly influence a child's production of a narrative (Schneider, 1996; Schneider & Dubé, 2005; Spinillo & Pinto, 1994). Spinillo and Pinto (1994) compared the narratives of four-, six-, and eight-year-old Italian and British children resulting from four

story generation tasks. Presentation conditions were found to result in significant variations on the children's inclusion of story grammar elements and cross-cultural similarities, including older children telling more complete narratives under all conditions than their younger peers.

Using the wordless storybook *Oops* (Mayer, 1977), Schneider (1996) compared the narratives of sixteen white Canadian children with language impairments between the ages of 5;7 and 9;9 elicited under four conditions: (1) original story while viewing pictures, (2) story retell with an oral model followed by pictures, (3) story retell with oral model and simultaneously shown pictures, and (4) story retell with oral model only. Each participant was randomly presented with all four stories, one in each condition. The stories were evaluated for measures of content (e.g., number of story grammar units, different/relevant information) and measures of length (e.g., mean length of utterance in morphemes, number of words). For these children with language impairment, pictures appeared to be a distraction from the processing and telling of the story, not a memory aid. However, younger children without language impairment may respond differently to picture stimuli, with pictures acting more as a memory support than impedance.

Schneider and Dubé (2005) expanded the earlier work of Schneider (1996) to explore presentation effects for story retells with typically-developing, ethnically-diverse, and SES-diverse Canadian children in kindergarten and second grade. Again using the picture book *Oops* (Mayer, 1977), stories were elicited under three conditions: (1) story retell with oral model only, (2) story retell with simultaneous oral and picture models, and (3) original story while viewing pictures. The children's stories were coded for story grammar content but not for measures of story length. The children in second grade provided more story grammar units in the retell conditions than their younger peers. Both age groups of children were sensitive to elicitation condition, presenting more story information under the retell conditions than the picture-only story generation condition. Both groups used more story

grammar units in the picture-supported retell than the oral-only retell condition, more especially by the children in kindergarten, though the differences between the picture-supported and oral-only retell conditions were not significant. The two grade groups did not differ when telling stories with pictures only.

Taken together, the results from Schneider (1996) and Schneider and Dubé (2005) suggest that retell conditions are more sensitive than story generation conditions for eliciting a longer, more complete narrative sample from children. Though not statistically significant, the Schneider and Dubé (2005) study also suggests that, while children in the early elementary grades with typically-developing language appear to have overall similar story retell skills with respect to story grammar regardless of whether pictorial support is provided, kindergarten children with typically-developing language may have benefitted somewhat more from picture support in a retell condition than the children in second grade. There have been no studies with even younger children to determine if story retelling with or without pictorial support would lead to differences in their story telling skills. Also, SES was not controlled for in these studies, so it is unknown if differences were present due to the results of low-SES.

These studies indicate story presentation effects vary depending on the age of child and type of stimuli used. These different presentation characteristics of narrative tasks may also differentiate children from low income homes from their peers from middle income homes. The present research investigates whether preschool-aged children benefit from pictorial support during story retells and whether this support is affected by the child's socio-economic status. Original story generation tasks were not investigated because the previous research has demonstrated that younger children's stories are much less complex in this condition than in a retell condition.

### ***Methods of Narrative Skills Assessments***

Methods of narrative skills assessment range from relatively informal and more loosely structured conditions for personal narratives to more formal, structured conditions for academic

recounts of events and storytelling (Gillam & Pearson, 2004; McCabe & Rollins, 1994; Strong, 1998). The narratives from these diverse formats have been examined both in terms of elements of microstructure (Fey, Catts, Proctor-Williams, Tomblin, & Zhang, 2004; Fiesta & Peña, 2004; Gazella & Stockman, 2003; Justice, Bowles, Kaderavek, Ukrainetz, Eisenberg, & Gillam, 2006; Liles, 1985; Munoz, Gillam, Peña, & Gulley-Faehnle, 2003; Paul & Smith, 1993; Sleight & Prinz, 1985) and macrostructure (Boudreau & Hedberg, 1999; Haywood, Gillam, & Lien, 2007; McCabe & Rollins, 1994; McFadden & Gillam, 1996; Munoz et al., 2003; Ripich & Griffith, 1988). These different analyses each provide singular information about the narratives. Microstructural analysis examines syntactic, lexical, and morphological complexity. Macrostructural analysis examines the inclusion of story grammar elements and episodes. Glenn and Stein (1980) developed a system which determined the presence of episodic elements such as setting, characters, problem, plan, and resolution. The scoring of the number of story grammar units provides a direct measure of the amount of basic content included by children in their stories (Schneider & Dubé, 2005).

In addition, macrostructural assessment of narratives includes analysis of evaluative elements (Bamberg & Damrad-Frye, 1990; Labov & Waletzky, 1967; McCabe & Rollins, 1994; Ukrainetz & Gillam, 2009). Bamberg & Damrad-Frye (1990) combined the most common categories from the previous research by Labov and Waletzky using a discourse-analytical approach with that of Peterson & McCabe using a form-function relationships approach, resulting in five categories of linguistic devices, which included references to feelings and cognitive states, the direct and indirect reported speech of characters, distancing devices or 'hedges', references to negative actions and states of mind, and causal connectors.

### ***How Poverty Impacts Children's Narrative Skills***

Children raised in poverty face many challenges, including successful academic achievement (Hart & Risley, 1995, 2006;

Roseberry-McKibben, 2008). In the United States in 2008, eighteen percent of children below the age of 18 years lived below the federal poverty threshold of \$21,200 for a family of four (National Center for Children in Poverty, 2008). Impoverished families from low socioeconomic status (SES) live in more isolation than mainstream families, resulting in less access to child care, information, and emotional support (Roseberry-McKibbin, 2008). The home disadvantages of reduced access to verbal interactions and literacy experiences may result in lower language skills in school for children from low-SES homes (Zevenbergen & Whitehurst, 2003).

Hart and Risley (1995) documented the language of children from high- and low-SES homes from the start of their language development until the age of three years. The language of their caregivers was also recorded and analyzed. The children's language skills were then measured at age 3 and at ages 9 to 10 (third grade). In this seminal longitudinal study, Hart and Risley (1995) found that, although the poorest families gave their children sufficient input to acquire language, there was a dramatic difference in amount of talk directed to their children, which led to dramatic differences in vocabulary and complexity of language. By their third birthdays, a child from a high-SES home had been exposed to approximately 30 million more words and, as a result, more complex and varied language, and a child raised in low-income homes, regardless of race or ethnicity, had a smaller vocabulary and simpler language. For these three- and four-year-old low, middle, and high SES children, Walker, Greenwood, Hart, and Carta (1994) found that SES-related differences in the children's language prior to school entry were predictive of measures of verbal ability, receptive and expressive language, and academic achievement in each subsequent year of elementary school.

The culture of poverty can impact all families, regardless of ethnic origin, race, religion, native language, or any other group distinction (Roseberry-McKibbin, 2008). For example, lack of funds can affect the types of personal world experiences and assumptions about the narrative task that a child has. A child in poverty has fewer opportunities for trips to

places such as restaurants, zoos, museums, farms, and the library, so fewer chances for discovering the settings and schemas of activities in these locations. There may be less time for reading and story sharing, so fewer chances for rehearsing storytelling skills (Hart & Risley, 1995; Roseberry-McKibbin, 2008). With fewer contexts and practice opportunities, the child from an impoverished home will not be able to generate a comparable narrative performance as the more affluent child (Gutiérrez-Clellen & Quinn, 1993). Without adequate exposure to input and practice support, the child may not be able to learn adequate narrative skills for academic success.

In a study targeting the interaction between narratives and poverty, Fazio, Naremore, and Connell (1996) found that story retelling in kindergarten was found to be the best single predictor of academic status in second grade. Because poverty can play a depressing role in children's acquisition of language skills, including narrative skills, children from low-SES homes may receive lower scores on language tests which mimic the scores of children with language impairments, resulting in difficulties in diagnosis of, and the potential under-identification of, children with language learning impairments as well as the possible false identification of some children with typically developing language as language impaired (Fazio, Naremore, & Connell, 1996).

Children's use of evaluative devices in their fictional narratives may be impacted by SES as well. In a study of first and fourth grade children from upper and lower SES homes, Shiro (2003) found no significant differences in the use of evaluative devices in the children's personal narratives for either age group or SES status, consistent with the findings of Peterson and McCabe (1983). However, for both SES groups, the children from lower SES homes were found to use not only significantly fewer evaluative devices but also fewer types of evaluative devices in their fictional narratives than their peers from upper SES homes. Shiro (2003) concluded that narrative abilities in one narrative type do not necessarily transfer to another.

The present study examined whether story retells could be a culturally sensitive

measure of narrative skills for children regardless of SES and whether story retell condition differentially impacts the narrative skills of preschool-aged children from low-SES homes compared with those of preschool-aged children from mid-SES homes.

### ***Rationale and Research Question***

Previous research has demonstrated that children at different ages and in diverse groups produce narratives in distinctive ways depending on story presentation prompts (McCabe & Bliss, 2003; Schneider, 1996; Schneider & Dubé, 2005; Spinillo & Pinto, 1994). Other research has demonstrated that children who live in poverty are at risk for delays in learning language skills, including narrative skills, which are the culmination of coordinating and using all aspects of language on the discourse level (Hart & Risley, 1995; Roseberry-McKibbin, 2005). The consideration of narrative abilities in assessment and intervention with very young children who are at risk for language learning difficulties is crucial given the importance of narrative in future academic and social success (Boudreau, 2008). Given the sensitivity of children at different ages to story presentation conditions, the possible capacity of narrative retelling to predict academic success in later school years, and the importance of early identification of language needs for academic success, this research was designed to determine the most efficacious means for eliciting a story retell from a preschool child regardless of socioeconomic status.

Building on previous research with older children, the goal was to compare the narrative skills of younger children from low-SES homes and mid-SES homes, using two presentation methods to elicit fictional story retells.

1. Do the narratives of preschool children differ depending upon the type of story retell condition (i.e., story retells with picture support and story retells without picture support) used to elicit the child's story?
2. Do the narrative skills (i.e., number of story grammar units, the amount of evaluative information, and the lexical complexity) of preschool children differ

depending on low and middle socioeconomic status?

It was predicted that preschool children would retell more complete stories when picture support was paired with an oral model and that children from low-SES homes would not retell stories with as much literary and lexical complexity as their peers from mid-SES homes.

## Method

### Participants

The research was approved by the institutional review board at the University of Kansas. A total of 56 children, ages 4;0 to 5;3 (years; months), half from low-SES homes and half from mid-SES homes, served as participants. The children attended preschools in five small towns (population range of between 570 to 1190 people) in a rural county of northeast Kansas. Participants were located by the researcher obtaining permission from the Northeast Kansas Community Action Program (NEK-CAP) Head Start Program and school districts within the county which had Four-Year-Old At-Risk Preschool Programs to recruit subjects. Flyers were sent home with students, and the researcher was available during parent-teacher conference times to answer questions. Children for the mid-SES group were peer models in the Head Start and Four-Year-Old At-Risk Classrooms.

The 2009 guidelines for poverty thresholds by family income in relation to family size (U.S. Census, 2010) were followed to place children in the low-SES group. Children in families with higher incomes than poverty but below \$100,000 per year were placed in the mid-SES group. Participants did not present with gross neurological, cognitive, emotional, or sensory conditions, such as visual or hearing impairments, autism, or developmental delays. English was the sole language at home and at preschool, and all children had passed routine school hearing screenings, per parent report. Other testing included the Clinical Evaluation of Language Fundamentals- Preschool, Second Edition (CELF-P-2; Wiig, Secord, & Semel, 2004), a measure of receptive and expressive language skills, and the Nonverbal Matrices

subtest of the Kaufman Brief Intelligence Test, Second Edition (KBIT-2; Kaufman & Kaufman, 2004), a measure of nonverbal intelligence.

Table 1 presents child characteristics for gender, age, and standardized tests.

### Procedure

The author created stories using the wordless picture book *OOPS* (Mayer, 1977), which was chosen because of use in previous research (Schneider, 1996; Schneider & Dubé, 2005). *OOPS* depicts the misadventures of a female hippopotamus whose small actions create unintentional catastrophic reactions. These events are represented in individual episodes which are parallel in terms of story components. Episodes are short, so demands on memory, attention, and behavior may be reduced. These stimuli were used to elicit narratives under two conditions: oral-only story retell and oral story retell with pictures. Four pictures for three story episodes were copied, attached in a folder, and laminated. Story models were written and balanced for lexical complexity, as measured by number of C-Units, number of dependent clauses, number of dialogue statements, number of words, number of different word roots, MLU in words, and MLU in morphemes. Each story included exemplars of every story grammar unit and evaluative element to be assessed. One episode was used only as an introductory story for the story-telling situation, and the other two were randomly presented, evenly distributed to be in initial position half of the time, in the two experimental conditions of oral-only retell and picture-supported retell. The two retell conditions were thus counterbalanced to control for sequencing effects.

### Task Administration

Each child was seen individually for two sessions in a quiet room. The first session included the testing with the standardized measures. In the second session, an Olympus model VN-100 digital voice recorder was used to present the introductory and experimental story models to insure consistent presentation. A puppet acted as a “naïve listener” for the children’s stories to limit the possibility of the child assuming shared knowledge and omitting

**TABLE 1. Participant characteristics.**

|                                   | Low-SES Group<br><u>N=28</u> |        |        | Mid-SES Group<br><u>N=28</u> |        |        |               |          |          |
|-----------------------------------|------------------------------|--------|--------|------------------------------|--------|--------|---------------|----------|----------|
| Gender                            | 13 male, 15 female           |        |        | 18 male, 10 female           |        |        |               |          |          |
|                                   | Mean                         | Range  | SD     | Mean                         | Range  | SD     | <i>t</i> (54) | <i>p</i> | <i>D</i> |
| Age (months)                      | 54.32                        | 48-60  | 3.963  | 56.61                        | 48-63  | 4.541  |               |          |          |
| KBIT-2 –<br>Matrices Subtest      | 99.54                        | 86-113 | 7.441  | 103.86                       | 90-124 | 8.352  | 2.044         | .046     | -0.546   |
| CELF-P-2 –<br>Core Language       | 94.79                        | 71-112 | 10.304 | 104.61                       | 86-127 | 9.651  | 3.681         | .001     | -0.992   |
| CELF-P-2 –<br>Receptive Language  | 89.96                        | 61-111 | 12.231 | 96.86                        | 77-111 | 8.086  | 2.488         | .016     | -0.666   |
| CELF-P-2 –<br>Expressive Language | 94.71                        | 69-119 | 11.489 | 103.50                       | 85-126 | 9.155  | 3.165         | .003     | -0.846   |
| CELF-P-2 –<br>Language Content    | 91.89                        | 65-112 | 10.347 | 98.21                        | 81-114 | 8.426  | 2.507         | .015     | -0.670   |
| CELF-P-2 –<br>Language Structure  | 93.00                        | 63-120 | 14.150 | 103.86                       | 94-121 | 12.552 | 3.564         | .001     | -0.953   |

*Note.* For the subtest of the KBIT-2 and for all categories of the CELF-P-2, higher score advantage is for the mid-SES group.

information when retelling the story to the examiner. The introductory story was first played and informally discussed. Narratives were then elicited from the child under the two elicitation conditions. The session was audio-recorded with a GE model 3-5027 portable cassette recorder with external microphone.

### **Prompts**

Prompts were allowed to encourage children to begin and to continue telling their stories. Neutral subprompts, such as “okay” and “uh-huh”, have been found to be effective in encouraging children to continue a narrative without the adult directing it, since no response may unintentionally signal the child to discontinue speaking (McCabe & Rollins, 1994). The number of prompts used in each retelling was tallied. A mixed design ANOVA analysis revealed no significant ( $p < .05$ ) differences for

group, elicitation condition, or an interaction between these factors. In other words, children in both groups were provided with similar numbers of prompts in both experimental conditions, so stories should not differ due to the number of received prompts.

### **Measures**

Three types of measures were used to analyze the children's stories. The macrostructural measures of story grammar units and evaluative elements examined the retells in terms of hierarchical organization, and microstructural measures of lexical productivity examined retells in terms of internal linguistic structures (Justice et al., 2006). These two types of analyses represent two distinct variables of narrative competence used to construct a story (Liles, Duffy, Merritt, & Purcell, 1995).



The children's audio-taped stories were transcribed following the conventions of the Systematic Analysis of Language Transcripts program (SALT, Miller & Chapman, 2006) by the author. Exophoric comments (e.g., "My Mom reads to me"; "I'm done now"; "OK") were removed. Twenty percent of the children's retells were transcribed separately by a student majoring in speech-language pathology and checked for agreement. Agreement was 95.115%. The transcriptions were coded for story grammar units and evaluative elements. Twenty percent of the transcriptions were also coded by a doctoral student in speech-language pathology to determine reliability. Agreement was 93.57% for story grammar units and 94.64% for evaluative elements.

Coding for story grammar units (SGUs) was based on Stein and Glenn (1979) categories of setting, initiating event, internal response, internal plan, attempt, consequence of attempt, and reaction of character, with the modifications made by Schneider (1996), which separated the scoring for "setting" into "first character", "second character", and "location", and included the reactions of both characters, not just the first. Stories were coded for the presence of each SGU, and the number of SGUs included per episode was counted. A SGU was accepted even if it differed from the story model (e.g., "She goed away" instead of "She ran into another store").

Coding for evaluative elements (EEs) was based on Bamberg & Damrad-Frye's (1990) categories of the most common evaluative devices used by children at this age group, which included noting characters' emotions and cognition, direct and indirect speech, hedges, negative qualifiers, and causal connectors. Stories were coded for the presence and number of EEs included per episode. An EE was counted as present even if it differed from the story (e.g., "Her scared" instead of "She was embarrassed").

For analysis of lexical complexity, retells were segmented into C-units. A C-unit is an independent main clause and its dependent

constituents which cannot be divided further without a loss to the essential meaning of the utterance (Miller & Chapman, 2006). Lexical measures included the total number of utterances in C-units (TNU), total number of words (TNW), mean length of utterance in words (MLU-W), mean length of utterance in morphemes (MLU-M), and number of different word roots (NDW). These were computed by the author using SALT (Miller & Chapman, 2006).

## Results

The data were analyzed using mixed design ANOVAs using PASW Statistics 18, Release Version 18.0.0 (D3 SPSS, Inc., 2009). Dependent variables were the number of story grammar units and the number of evaluative elements as measures of macrostructure, and the number of C-units, the total number of words, the number of different word roots, the MLU in words, and the MLU in morphemes as measures of microstructure. These are reported separately. When the data for the outcome variables were screened for outliers, the data from one participant from the low-SES group presented as an outlier for story grammar units and evaluative elements in both elicitation conditions and for some of the lexical measures in both elicitation conditions as well, resembling more the data from the higher scoring participants from the mid-SES group. Z-scores were calculated for this child's data for story grammar units and evaluative elements in both elicitation conditions. The z-scores were around three standard deviations above the mean for all four categories and not representative of the low-SES group. The three-sigma rule, which maintains that 99.7% of all values lie within three standard deviations of the mean for a normal distribution and an event which lies outside that range is improbable (Upton & Cook, 2008), was applied, the outlier was considered not representative of the low-SES group, and the data were removed. There was not an equivalent outlier from the mid-SES group, so no data were removed from that group.

**TABLE 2. Proportion of story grammar units by group and elicitation condition.**

|               | Oral-only elicitation condition |       | Picture+oral elicitation condition |       | Total both elicitation conditions |
|---------------|---------------------------------|-------|------------------------------------|-------|-----------------------------------|
|               | Mean                            | SD    | Mean                               | SD    | Mean                              |
| Low SES group | 2.22                            | 1.826 | 3.81                               | 1.618 | 3.019                             |
| Mid SES group | 3.29                            | 2.034 | 4.64                               | 1.569 | 3.964                             |
| Total Mean    | 2.76                            | 1.990 | 4.24                               | 1.633 |                                   |

**TABLE 3. Proportion of evaluative elements by group and elicitation condition.**

|               | Oral-only elicitation condition |       | Picture+oral elicitation condition |       | Total both elicitation conditions |
|---------------|---------------------------------|-------|------------------------------------|-------|-----------------------------------|
|               | Mean                            | SD    | Mean                               | SD    | Mean                              |
| Low SES group | 0.81                            | 1.111 | 1.78                               | 1.311 | 1.296                             |
| Mid SES group | 1.82                            | 1.722 | 2.43                               | 1.597 | 2.125                             |
| Total Mean    | 1.33                            | 1.528 | 2.11                               | 1.487 |                                   |

**TABLE 4. Proportion of C-Units by group and elicitation condition.**

|               | Oral-only elicitation condition |       | Picture+oral elicitation condition |       | Total both elicitation conditions |
|---------------|---------------------------------|-------|------------------------------------|-------|-----------------------------------|
|               | Mean                            | SD    | Mean                               | SD    | Mean                              |
| Low SES group | 3.00                            | 2.038 | 5.63                               | 2.186 | 4.315                             |
| Mid SES group | 4.32                            | 2.957 | 6.29                               | 2.623 | 5.304                             |
| Total Mean    | 3.67                            | 2.611 | 5.96                               | 2.419 |                                   |

A significant main effect was found for elicitation for inclusion of story grammar units,  $F(1,53)=42.557$ ,  $p=.000$ ,  $\eta_p^2=.445$ ,  $d = 0.81$ ,

with the  $\eta_p^2$  (partial eta squared) value indicating that approximately 45% of the variance in the model can be accounted for by elicitation



condition (Ferguson, 2009) and the Cohen's  $d$  value (Cohen, 1992) indicating a large effect size. More SGUs were included in the picture-supported condition than the oral-only, as shown on Table 2. A significant main effect for group was found,  $F(1,53)=24.590$ ,  $p=.029$ ,  $\eta_p^2=.087$ ,  $d = 0.617$  (medium to large effect size). Fewer SGUs were used by the children in the low-SES group than by the children in the mid-SES group, also shown on Table 2.

A significant main effect for elicitation was found for the inclusion of evaluative elements,  $F(1,53)=15.266$ ,  $p=.000$ ,  $\eta_p^2=.224$ ,  $d = 0.517$  (medium effect size). Children told stories with more EEs in the picture-supported condition than in the oral-only, as shown on Table 3. A significant main effect for group was found,  $F(1,53)=5.996$ ,  $p=.018$ ,  $\eta_p^2=.102$ ,  $d = 0.673$  (medium to large effect size). Fewer EEs were included by the children in the low-SES group than by the children in the mid-SES group, also shown on Table 3. A significant main effect for elicitation was found for the number of C-units produced,  $F(1,53)=46.134$ ,  $p=.000$ ,  $\eta_p^2=.465$ ,  $d = 0.910$  (large effect size). Children retold stories with a greater TNU in the picture-supported condition than in the oral-only, as shown on Table 4. However, a significant main effect for group was not found,  $F(1,53)=2.922$ ,  $p=.093$ . Children in both SES groups told stories with about the same TNU, also shown on Table 4.

There was a significant main effect for elicitation for the total number of words used,  $F(1,53)=40.361$ ,  $p=.000$ ,  $\eta_p^2=.432$ ,  $d = 0.828$  (large effect size). Children told stories with a greater TNW in the picture-supported condition than in the oral-only, as shown on Table 5.

There was a significant main effect for group,  $F(1,53)=9.642$ ,  $p=.003$ ,  $\eta_p^2=.154$ ,  $d = .853$  (large effect size). The children in the low-

SES group told stories with a lower TNW than the children in the mid-SES group, also shown on Table 5.

There was a significant main effect for elicitation for the number of different words used,  $F(1,53)=39.581$ ,  $p=.000$ ,  $\eta_p^2=.428$ ,  $d = 0.819$  (large effect size). Children told stories with a greater NDW in the picture-supported condition than in the oral-only, as shown on Table 6. There was a significant main effect for group,  $F(1,53)=13.632$ ,  $p=.001$ ,  $\eta_p^2=.205$ ,  $d = 1.014$  (large effect size). The children in the low-SES group told stories with a lower NDW than the children in the mid-SES group used, also shown on Table 6.

There was a significant main effect for elicitation for MLU in words,  $F(1,53)=6.761$ ,  $p=.012$ ,  $\eta_p^2=.113$ ,  $d = 0.393$  (small to medium effect size). Children told stories with a greater MLU-W in the picture-supported condition than in the oral-only, as shown on Table 7. There was a significant main effect for group,  $F(1,53)=25.882$ ,  $p=.000$ ,  $\eta_p^2=.328$ ,  $d = 1.398$  (large effect size). The children in the low-SES group retold stories with a lower MLU-W than the children in the mid-SES group, also shown on Table 7.

There was a significant main effect for elicitation for MLU in morphemes,  $F(1,53)=4.990$ ,  $p=.030$ ,  $\eta_p^2=.086$ ,  $d = 0.349$  (small to medium effect size). Children told stories with a greater MLU-M in the picture-supported condition than in the oral-only, as shown on Table 8. There was a significant main effect for group,  $F(1,53)=24.423$ ,  $p=.000$ ,  $\eta_p^2=.315$ ,  $d = 1.358$  (medium to large effect size). The children in the low-SES group retold stories with a lower MLU-M than the children in the mid-SES group, also shown on Table 8.

**TABLE 5. Proportion of the total number of words by group and elicitation condition.**

|               | Oral-only elicitation condition |        | Picture+oral elicitation condition |        | Total both elicitation conditions |
|---------------|---------------------------------|--------|------------------------------------|--------|-----------------------------------|
|               | Mean                            | SD     | Mean                               | SD     | Mean                              |
| Low SES group | 12.52                           | 11.534 | 25.78                              | 12.662 | 19.148                            |
| Mid SES group | 23.50                           | 17.135 | 36.18                              | 16.986 | 29.839                            |
| Total Mean    | 18.11                           | 15.542 | 31.07                              | 15.780 |                                   |

**TABLE 6. Proportion of the number of different words by group and elicitation condition.**

|               | Oral-only elicitation condition |        | Picture+oral elicitation condition |       | Total both elicitation conditions |
|---------------|---------------------------------|--------|------------------------------------|-------|-----------------------------------|
|               | Mean                            | SD     | Mean                               | SD    | Mean                              |
| Low SES group | 9.67                            | 7.483  | 17.37                              | 7.313 | 13.519                            |
| Mid SES group | 17.07                           | 10.066 | 24.11                              | 8.075 | 20.589                            |
| Total Mean    | 13.44                           | 9.570  | 20.80                              | 8.361 |                                   |

**TABLE 7. Proportion of MLU in words by group and elicitation condition.**

|               | Oral-only elicitation condition |       | Picture+oral elicitation condition |       | Total both elicitation conditions |
|---------------|---------------------------------|-------|------------------------------------|-------|-----------------------------------|
|               | Mean                            | SD    | Mean                               | SD    | Mean                              |
| Low SES group | 3.790                           | 1.282 | 4.433                              | 1.160 | 4.111                             |
| Mid SES group | 5.223                           | 1.617 | 5.715                              | .958  | 5.469                             |
| Total Mean    | 4.520                           | 1.619 | 5.085                              | 1.235 |                                   |

**TABLE 8. Proportion of MLU in morphemes by group and elicitation condition.**

|               | Oral-only elicitation condition |       | Picture+oral elicitation condition |       | Total both elicitation conditions |
|---------------|---------------------------------|-------|------------------------------------|-------|-----------------------------------|
|               | Mean                            | SD    | Mean                               | SD    | Mean                              |
| Low SES group | 4.281                           | 1.461 | 4.900                              | 1.264 | 4.590                             |
| Mid SES group | 5.799                           | 1.819 | 6.298                              | 1.083 | 6.048                             |
| Total Mean    | 5.054                           | 1.808 | 5.612                              | 1.362 |                                   |

**Summary of Results**

Differences were found in the story retells of the preschoolers for both elicitation condition and group membership. The children from both SES groups retold stories with significantly more story grammar units and more evaluative elements and with greater lexical complexity when picture supports were provided along with the oral story model. Also, the children from the mid-SES homes told stories which included a higher number of SGUs and EEs as well as higher measures of TNW, NDW, MLU-W, and MLU-M than the children from the low-SES homes. The only measure which was not found to be a significant discriminator of group membership was the lexical measure of C-units. No interaction between group membership and elicitation condition was found.

**Discussion**

The children produced story retells with more literary and lexical complexity under the picture-supported presentation condition than the oral-only condition, with all measures found to be significant indicators of group differences, as was predicted. More structural sophistication has been noted in the personal narratives than the fictional narratives of preschool children, with some researchers suggesting that children at this age have a comparative advantage when reporting fact over fiction (Hudson & Shapiro, 1991; McCabe & Rollins, 1994). The current research suggests that, with the support of pictures and neutral prompts, preschool children may be more ready and able to retell fictional stories than previously thought. The

discrepancy between performance in the oral-only condition and the picture-supported condition suggests that, for this younger population, the requisite narrative structures may not be as developed or as readily accessible in long term memory as to allow information in an oral story model to be placed within their mental representation and retold as well as older children do. Pictures can assist in this process of representation and mental retrieval to assign story grammar and evaluative elements within their stories and maintain them during retelling. The preschool years appear to be an optimal time to provide models for learning story elements which in turn supports remembering details when the child hears a new story.

Preschool children from low-SES homes were found to retell stories with less literary and lexical complexity than their peers from mid-SES homes. The story retells of children from low-SES homes appear to reflect their overall lower language skills as compared with their peers from mid-SES homes. These results reflect the reduced vocabulary, grammar, and narrative skills of the children in the low-SES homes, who have been documented to be at-risk for language delay due to SES factors (Hart & Risley, 1995, 1999; Hoff, 2003; Roseberry-McKibben, 2008). SES differences which were seen in preschoolers' personal narratives (Peterson, 1994) are also found here in their fictional story retells. The lack of significant findings for the number of C-units in the children's stories suggests that the children are all using equivalent numbers of utterances to tell their stories. However, the utterances of the

children from low-SES homes include fewer story elements and less new evaluative information, and they have reduced vocabulary and grammatical complexity, as compared with the utterances of the children from mid-SES homes. To support the future academic success of children from low-SES homes, these narrative skills should be improved with timely instruction and opportunities for mediated practice.

These differences in the children's retells were predicted partially based on research into narratives and SES. In an examination of the personal narratives of preschool children, Peterson (1994) found that the children from low-SES homes were able to tell personal narratives which were as long and informationally dense as the children from mid-SES homes, but their narratives had fewer complex linguistic markers and were not as well sequenced. However, the narratives were told to the examiner, and unlimited direct prompts were allowed. Extensive prompting was required for the children from low-SES homes to produce narratives of equivalent length and information. The current research controlled prompts in story retells which impacted the amount of information the children included in their stories as well as their linguistic complexity. Shiro (2003) found SES differences in the number of EEs included by school-aged children in their personal narratives and story retells about videos that had just been watched. In the current study, SES differences were apparent for EEs for younger children for story retells as well. This research adds to the previous knowledge base.

### ***Limitations of the Present Study***

All of the participants in this study live in a rural, predominantly European American area. The lack of diversity in this setting contributes to internal validity, so caution should be used in generalizing results to children from urban or more culturally-diverse backgrounds. More research should be directed to exploring potential differences between SES groups in other geographic and more culturally-diverse areas.

Additionally, the stories used in this research were chosen due to their use in previous research with older children. The

stories do not place even emphasis on all literary elements and possibly may have influenced which story elements were included in the children's stories. Also, the stories do not necessarily reflect contemporary lifestyles and may represent dated story schemas. Future studies should utilize stories designed to exemplify equally all story elements and to present more contemporary situations.

Lastly, the parent questionnaire used in this research requested a very limited amount of information about the child and family. Demographic information was not gathered on the child's birth order, number of siblings, age of parents, family stability (e.g., divorce, nuclear or blended family), or child care arrangements (e.g., mother at home, family member, day care facility). A child's full language experience cannot be predicted through measures of income alone. Individual variations impact a child's available language input and support for practicing language. Hart and Risley (1999) found that the amount of language experiences provided to the child before the child is three years old accounts for the verbal-intellectual competence of the child rather than socioeconomic, educational, or ethnic factors. Factors such as family stability and child care arrangements could strongly impact the amount of language experiences the child has available and a child's language development (Peterson, 1994). For example, a child from a low-SES home may spend most waking hours being cared for by grandparents in a mid-SES bracket. Conversely, a child from a mid-SES home may be cared for by busy older siblings while parents are at work. Future research should utilize a more in-depth questionnaire to provide additional insight into factors which may impact children's stories, such as recent changes in finances and child care arrangements.

### ***Directions for Future Research***

The use of spoken stories with accompanying pictures appears to be an effective method for assessing the emerging fictional story retell skills of preschool children. The use of stories which are balanced in terms of story elements and lexical complexity would be useful to monitor progress of story skills development over time. Future research could

develop several equivalent stories for this purpose as well as stories which are progressively more difficult for use with children as skills progress. A story retell takes a few minutes per child, making this assessment a quick and potentially effective tool for regular monitoring of developing story retelling skills.

A longitudinal study of children would observe story retell skills development over time and determine whether story retells in preschool provide a predictive nature for future academic success, as has been found for kindergarten children. This information could be decisive along within a framework of dynamic assessment in the identification of preschool children who truly are in need of increased explicit exposure to literary elements and scaffolding when practicing their own stories.

### Conclusions

The current research adds to the knowledge base on the influences of presentation condition and on the effects of socioeconomic status on the story retells of preschool children. The use of pictures with an oral model was found to elicit better quality story retells than an oral-only model in terms of literary and lexical complexity. Language abilities, as well as memory representation and retrieval, may be supported because the pictures provide more for the children to talk about, resulting in more opportunities to use vocabulary, grammar, and discourse skills.

In addition, preschoolers from mid-SES homes were found to produce story retells with greater narrative and lexical complexity than peers from low-SES homes. These differences were found for measures of story structure, evaluative information, and lexical complexity, but not for the number of utterances the children were producing. This indicates that although all the children had something to say and were speaking about the same amount, the children from mid-SES homes had greater advantages in their story telling than did their peers from low-SES homes, possibly due to increased exposure to book reading and opportunities for language interactions. As a result, they already had an idea of the patterns of stories and so were able to listen for the story information to put into the pattern, and then use these regularities to help

remember the information to place within the pattern. Given the importance of narrative within the school curricula, more research should be pursued on how best to assist preschool children from low-SES homes to learn these patterns of fictional narrative and provide opportunities for them to practice listening and retelling stories.

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### References

- Bamberg, M., & Damrad-Frye, R. (1991). On the ability to provide evaluative comments: Further explorations of children's narrative competencies. *Journal of Child Language*, 18, 689-710.
- Boudreau, D. M. (2008). Narrative abilities: Advances in research and implications for clinical practice. *Topics in Language Disorders*, 28 (2), 99-114.
- Boudreau, D. M., & Hedberg, N. L. (1999). A comparison of early literacy skills in children with specific language impairment and their typically developing peers. *American Journal of Speech-Language Pathology*, 8, 249-260.
- Bruner, J. (1990). *Acts of meaning*. Cambridge, MA: Harvard University Press.
- Catts, H.W., Fey, M.E., Tomblin, J.B., & Zhang, Z. (2002). A longitudinal investigation of reading outcomes in children with language impairments. *Journal of Speech, Language, and Hearing Research*, 45, 1142-1157.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112 (1), 115-159.
- Dickinson, D., & McCabe, A. (2001). Bringing it all together: The multiple origins, skills, and environmental supports of

- early literacy. *Learning Disabilities Research and Practice*, 16, 186-202.
- Fazio, B. B., Naremore, R. C., & Connell, P. J. (1996). Tracking children from poverty at risk for specific language impairment: A three year longitudinal study. *Journal of Speech and Hearing Research*, 39, 611-624.
- Feagans, L. (1982). The development and importance of narratives for school adaptation. In L. Feagans, & D. Farran (Eds.), *The language of children reared in poverty: Implications for evaluation and intervention* (pp. 95-116). New York: Academic Press.
- Ferguson, C.J. (2009). An effect size primer: A guide for clinicians and researchers. *Professional Psychology: Research and Practice*, 40(5), 532-538.
- Fey, M. E., Catts, H. W., Proctor-Williams, K., Tomblin, J. B., & Zhang, X. (2004). Oral and written story composition skills of children with language impairment. *Journal of Speech and Hearing Research*, 47, 1301-1308.
- Fiesta, C. E., & Peña, E. D. (2004). Narrative discourse in bilingual children: Language and task effects. *Language, Speech, and Hearing Services in Schools*, 35, 155-168.
- Gazella, J., & Stockman, I. J. (2003). Children's story retelling under different modality and task conditions: Implications for standardizing language sampling procedures. *American Journal of Speech-Language Pathology*, 12, 61-72.
- Gillam, R. B., & Pearson, N. (2004). *Test of Narrative Language*. Austin, TX: Pro-Ed.
- Glenn, C.G., & Stein, N.L. (1980). *Syntactic structures and real world themes in stories generated by children* (Technical report). Urbana, IL: University of Illinois, Center for the Study of Reading.
- Griffin, T. M., Hemphill, L., Camp, L., & Wolf, D. P. (2004). Oral discourse in the preschool years and later literacy skills. *First Language*, 24, 123-147.
- Gutierrez-Clellen, V. F., & Quinn, R. (1993). Assessing narratives of children from diverse cultural/linguistic groups. *Language, Speech, and Hearing Services in Schools*, 24, 2-9.
- Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore: Brookes.
- Hart, B., & Risley, T.R. (1999). *The social world of children learning to talk*. Baltimore: Brookes.
- Hayward, D. V., Gillam, R. B., & Lien, P. (2007). Retelling a script-based story: Do children with and without language impairments focus on script and story elements? *American Journal of Speech-Language Pathology*, 16, 235-245.
- Heath, S. B. (1986). Taking a cross-cultural look at narratives. *Topics in Language Disorders*, 7 (1), 84-94.
- Hoff, E. (2003). The specificity of environmental influence: Socioeconomic status affects early vocabulary development via maternal speech. *Child Development*, 74(5), 1368-1378.
- Hudson, J. A., & Shapiro, L. A. (1991). From knowing to telling: The development of children's scripts, stories, and personal narratives. In C. Peterson & A. McCabe (Eds.), *Developing narrative structure* (pp. 89-136). Hillsdale, NJ: Erlbaum Associates Inc.
- Justice, L. M., Bowles, R. P., Kaderavek, J. N., Ukrainetz, T. A., Eisenberg, S. L., & Gillam, R. B. (2006). The index of narrative microstructure: A clinical tool for analyzing school-age children's narrative performances. *American Journal of Speech-Language Pathology*, 15, 177-191.
- Kaufman, A. S., & Kaufman, N. L. (2004). *Kaufman Brief Intelligence Test, Second Edition*. Circle Pines, MN: American Guidance Services.
- Labov, W. (1972). *Language in the inner city*. Philadelphia: University of Pennsylvania Press.
- Labov, W., & Waletzky, J. (1967). Narrative analysis: Oral versions of personal experience. In J. Helm (ed.), *Essays on*

- the verbal and visual arts*. Seattle: University of Washington Press.
- Leap, W. L. (1993). *American Indian English*. Salt Lake City, UT: University of Utah Press.
- Levy, E. T. (2003). The roots of coherence in discourse. *Human Development*, 46, 169-188.
- Liles, B. Z. (1985). Cohesion in the narratives of normal and language-disordered children. *Journal of Speech and Hearing Research*, 28, 123-133.
- Liles, B. Z., Duffy, R. J., Merritt, D. D., & Purcell, S. L. (1995). Measurement of narrative discourse ability in children with language disorders. *Journal of Speech and Hearing Research*, 38, 415-425.
- Manhardt, J., & Rescorla, L. (2002). Oral narrative skills of late talkers at age 8 and 9. *Applied Psycholinguistics*, 23, 1-21.
- Mayer, M. (1977). *Oops*. New York: Dial Press.
- McCabe, A. (1991). Preface: Structure as a way of understanding. In A. McCabe & C. Peterson (Eds.), *Developing Narrative Structure* (pp. i-xvii). Mahway, NJ: Lawrence Erlbaum Associates.
- McCabe, A. (1997). Cultural background and storytelling: A review and implications for schooling. *The Elementary School Journal*, 97 (5), 453-473.
- McCabe, A., & Bliss, L. S. (2003). Patterns of narrative discourse: A multicultural, life span approach. Boston, MA: Allyn & Bacon.
- McCabe, A., & Rollins, P. R. (1994). Assessment of preschool narrative skills. *American Journal of Speech-Language Pathology*, 3, 45-56.
- McFadden, T. U., & Gillam, R. B. (1996). An examination of the quality of narratives produced by children with language disorders. *Language, Speech, and Hearing Services in the Schools*, 27, 48-56.
- Miller, J., & Chapman, R. (2006). *Systematic Analysis of Language Transcripts: Clinical V9*. Madison: University of Wisconsin.
- Munoz, M. L., Gillam, R. B., Peña, E. D., & Gulley-Faehnle, A. (2003). Measures of language development in fictional narratives of Latino children. *Language, Speech, and Hearing Services in Schools*, 34, 332-342.
- National Center for Children in Poverty. (2008). Low-income children in the United States: National and state trend data, 1997-2007. Retrieved from [http://www.nccp.org/publications/pdf/text\\_851.pdf](http://www.nccp.org/publications/pdf/text_851.pdf)
- Paul, R., & Smith, R. L. (1993). Narrative skills in 4-year-olds with normal, impaired, and late-developing language. *Journal of Speech and Hearing Research*, 36, 592-598.
- Peterson, C. (1993). Identifying referents and linking sentences cohesively in narration. *Discourse Processes*, 16, 507-524.
- Peterson, C. (1994). Narrative skills and social class. *Canadian Journal of Education*, 19 (3), 251-266.
- Peterson, C., & McCabe, A. (1983). *Developmental psycholinguistics: Three ways of looking at a child's narrative*. New York: Plenum Press.
- Peterson, C., & McCabe, A. (1994). A social interactionist account of developing decontextualized narrative skill. *Developmental Psychology*, 30 (6), 937-948.
- Ripich, D. N., & Griffith, P. L. (1988). Narrative abilities of children with learning disabilities and nondisabled children: Story structure, cohesion, and propositions. *Journal of Learning Disabilities*, 21, 165-173.
- Rollins, P. R., McCabe, A., & Bliss, L. (2000). Culturally sensitive assessment of narrative skills in children. *Seminars in Speech and Language*, 21 (3), 223-234.
- Roseberry-McKibbin, C. (2008). *Increasing language skills of students from low income backgrounds: Practical strategies for professionals*. San Diego, CA: Plural Publishing.
- Schneider, P. (1996). Effects of pictures versus orally presented stories on story retellings by children with language



- impairment. *American Journal of Speech-Language Pathology*, 5, 86-96.
- Schneider, P., & Dubé, R. (1997). Effect of pictorial versus oral story presentation on children's use of referring expressions in retell. *First Language*, 17 (51), 283-302.
- Schneider, P., & Dubé, R. V. (2005). Story presentation effects on children's retell content. *American Journal of Speech-Language Pathology*, 14, 52-60.
- Shiro, M. (2003). Genre and evaluation in narrative development. *Journal of Child Language*, 30, 165-195.
- Sleight, C. C., & Prinz, P. M. (1985). Use of abstracts, orientations, and codas in narration by language-disordered and nondisordered children. *Journal of Speech and Hearing Disorders*, 50, 361-371.
- Snow, C. E., & Dickinson, D. K. (1990). Social sources of narrative skills at home and at school. *First Language*, 10, 87-103.
- Spinillo, A. G., & Pinto, G. (1994). Children's narratives under different conditions: A comparative study. *British Journal of Developmental Psychology*, 12, 177-193.
- Stein, N. L., & Glenn, C. G. (1979). An analysis of story comprehension in elementary school children. In R.O. Freedle (Ed.), *New directions in discourse processing, Vol. 2: Advances in discourse processing*. Norwood, N.J.: Ablex.
- Strong, C. J. (1998). *The Strong Narrative Assessment Procedure*. Eau Claire, WI: Thinking Publications.
- Ukrainetz, T. A., & Gillam, R. B. (2009). The expressive elaboration of imaginative narratives by children with specific language impairment. *Journal of Speech, Language, and Hearing Research*, 52, 883-898.
- United States Census Bureau. (2010). Poverty threshold table. Retrieved from [www.census.gov/hhes/www/poverty/threshld/thresh09/html](http://www.census.gov/hhes/www/poverty/threshld/thresh09/html)
- Upton, G., & Cook, I. (2008). *Dictionary of Statistics*. Oxford: Oxford University Press.
- Walker, D., Greenwood, C., Hart, B., & Carta, J. (1994). Prediction of school outcomes based on early language production and socioeconomic factors. *Child Development*, 59, 606-621.
- Wiig, E., Secord, W. A., Semel, A. (2004). *Clinical Evaluation of Language Fundamentals – Preschool-Second Edition*. San Antonio, TX: Pearson.
- Zevenbergen, A. A., & Whitehurst, G. J. (2003). Dialogic reading: A shared picture book reading intervention for preschoolers. In A. Van Kleeck, S. Stahl, & E. Bauer (Eds.), *On Reading Books to Children* (pp. 183-184). Mahwah, New Jersey: Erlbaum Associates.

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## Evidence-Based Practice, Assessment, and Intervention Approaches for Children with Developmental Dyslexia

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### Abstract

Dyslexia is known as a reading disorder primarily affecting phonological processing and decoding abilities. It is known as a language-based disability, and the predominant cognitive feature of dyslexia is that it arises from a phonological processing deficit that affects the processing of speech sounds in words. According to the *Diagnostic Manual of Mental Disorders*, or *DSM-5*, it is categorized as a learning disorder that impairs the decoding skills in reading and can ultimately affect students' academic achievement. Dyslexia can also contain many comorbidities, such as language and learning disorders, which can make it difficult to treat, manage, assess and diagnose. The purpose of this paper is to provide the main components and characteristics for dyslexia in school-aged children and adolescents and to provide evidence-based assessment strategies and intervention programs for speech-language pathologists and other related professionals. Standardized assessment is most appropriate in evaluating school-age children with dyslexia, and the use of various intervention strategies serve as an effective tool to remediate these reading deficits.

**Keywords:** dyslexia, phonological processing, literacy instruction, RTI

### Overview of Developmental Dyslexia

According to Snowling and Hulme (2012), dyslexia, or decoding difficulty, as stated in the *Diagnostic and Statistical Manual of Mental Disorders Fifth Edition, DSM-5* (2013), refers to children who exhibit difficulty in distinguishing the relationships between spelling patterns of words and their pronunciations and through inaccurately reading aloud. The predominant cognitive feature of dyslexia is that it arises from a phonological deficit that affects

the processing of speech sounds in words (Snowling & Hulme, 2012b). According to Snowling (2012), dyslexia is defined as a disorder that primarily affects reading and spelling development and is associated with phonological processing impairment, verbal processing speed, and verbal short-term memory deficits. It is a neurodevelopmental disorder that affects the development of reading accuracy and fluency, along with spelling skills. Dyslexia is often accompanied by other disorders that affect learning and educational attainment (Snowling, 2012). This disorder can inhibit a child's learning and educational attainment due to the reading deficits it creates.

According to Snowling and Hulme (2012), dyslexia is categorized as a learning disorder, as stated in the *DSM-5* (2013), and it is an impairment that affects the development of decoding skills in reading. Decoding relies primarily on letter knowledge and phonological skills. Difficulties pertain to reading accuracy and reading with adequate speed or fluency. Without accommodations, dyslexia interferes with academic achievement and activities of daily living that require these reading skills. Dyslexia can contain many comorbidities, such as language and learning disorders, which can obscure its identification, assessment, and diagnosis (Snowling & Hulme, 2012a).

According to Wajuhian and Naidoo (2012), the term dyslexia is used interchangeably with developmental dyslexia and specific reading disability. It is derived from the Greek prefix *dys*, meaning hard or difficult, and the root *lexia*, from the word *lexicos*, which pertains to words. Therefore, dyslexia means a difficulty with words. The realm of dyslexia consists of varied definitions, but the general consensus of researchers regards it as having a linguistic basis. Dyslexia is known as a mild neurological disorder that impedes a person's ability to interpret symbols or written language and is independent of intelligence (Wajuhian & Naidoo, 2012). Even though dyslexia varies in definitions across researchers, the definition has been examined by a rich history of research spanning over 100 years.

## History of dyslexia

According to Wajuihian and Naidoo (2012), historical accounts vary among sources, but dyslexia was first explained as "word blindness." According to Chakavarty (2009), the concept of dyslexia was first introduced by a German physician in Berlin, Germany, in 1887 (Wajuihian & Naidoo, 2012). The neurological basis of dyslexia was first described independently by Scottish ophthalmologist James Hinshelwood in 1895 and British physician Morgan, in 1896 (Wajuihian & Naidoo, 2012). In 1927, Samuel Orton, a neuropsychiatrist, inferred that dyslexia consisted of the lack of development of cerebral dominance that led to "direction confusion," for example, mistaking "d" for "b." He also introduced the term strephosymbolia, meaning "twisted symbol" (Wajuihian & Naidoo, 2012). Dyslexia was reported in 1975 by Rutter and Yule, and, in 1994, Stanovich questioned the utility of the discrepancy definition of dyslexia. The contemporary view defines dyslexia as a phonological deficit (Snowling, 2012).

Extensive research and study over the past 50 years has expanded the knowledge base of dyslexia. Much more is now known regarding its nature, etiology, and assessment. For many years, dyslexia was classified as a specific reading disability that affected children with reading impairments below what was to be expected on the basis of the child's age and IQ. This is known as the discrepancy approach for classifying children with learning disabilities. According to Snowling and Hulme (2012), the implementation of the discrepancy approach has declined in recent years due to little evidence of differences in etiology and prognosis for children with learning difficulties who have a higher or lower IQ. Furthermore, in terms of reading comprehension, those with higher IQs are likely to perform better (Snowling & Hulme, 2012b).

Even though researchers have been studying dyslexia for over 100 years, and numerous professional organizations throughout the world have attempted to develop a concrete definition, there is a strong agreement among researchers that a useful and clear definition does not exist (Youman & Mather, 2013). Developmental dyslexia presents a definitive

challenge in the realms of literacy and language for young children and adolescents, but through the effective use and implementation of evidence-based assessment strategies and literacy intervention programs, one can overcome dyslexia. The purpose of this literature review is to inform the speech-language pathologist of evidence-based research of the main components and characteristics for developmental dyslexia in school-aged children, as well as to provide evidence-based assessment strategies and intervention programs in order to successfully implement service delivery and management treatment programming. Dyslexia has been heavily researched in current years, and much more has been found recently regarding its prevalence rates.

## Prevalence of Dyslexia

Among the literature on dyslexia, there is a consensus among researchers that support a prevalence rate for dyslexia ranging from 5-17% in school-age children (Scerri & Schulte-Körne, 2010). According to Scerri and Schulte-Körne (2010), dyslexia has a prevalence of at least 5% in school-age children. This prevalence has been determined from epidemiological studies, with substantial numbers from Western populations using different selection criteria and different test languages. Epidemiological studies consist of the evaluation of patterns, causes, and effects of health and disease conditions in defined populations. Katusic et al. conducted a study in 2001 on 5,718 children in a population-based birth cohort in the United States has produced prevalence findings of 5.3-11.8% (Scerri & Schulte-Körne, 2010). The prevalence rate of developmental dyslexia is known to be greater in males than in females, with a ratio of 2:1 (Scerri & Schulte-Körne, 2010). However, this claim is made by a distinction of referral bias, and ever increasing sample sizes from unselected populations make this distinction difficult to validate (Scerri & Schulte-Körne, 2010).

Four epidemiological samples from a single study produced prevalence rates of 18.5-24.6% in boys and 8.3-13% in girls (Scerri & Schulte-Körne, 2010). An extensive prospective study conducted by Flannery et al. in 2000 in the United States of 32,223 children (16,080 boys and 16,143 girls) showed that twice as many

boys were affected than girls. A study of reading ability in nearly 200,000 children across 43 different countries concluded that in every participating country, girls outperformed boys on reading tests (Scerri & Schulte-Körne, 2010). Developmental dyslexia is a common condition with a prevalence ranging from 5-15.5%, depending on the cut-off imposed on the normal distribution of reading ability and the language orthographic rules (Marino et al., 2011).

According to Shaywitz et al. (1990) and Katusic et al. (2001), dyslexia is noted to affect 5-10% of school-aged children and is one of the most common learning disorders (Neuhoff et al., 2012). Dyslexia is the most prevalent and most classified type of learning disability, affecting 80% of those identified as learning-disabled. However, reports on prevalence rates in literature vary. The estimates of the prevalence in school-aged children in the United States range between 5-17%, but, in the United Kingdom, prevalence ranges between 3-6% (Wajuhian & Naidoo, 2012).

Dyslexia was first thought to affect boys and girls at comparable rates, but a review of four large scale epidemiological studies conducted by Rutter et al. (2012) concluded that dyslexia is significantly more common in boys than in girls. There is a large variability in the prevalence of dyslexia due to differences in diagnostic criteria, definition, age, language, and culture as described by authorities (Wajuhian & Naidoo, 2012). According to Fletcher, Lyon, Fuchs, and Barnes (2007), in the United States, prevalence rates have been estimated to be between 10-15% of all school children (Youman & Mather, 2013). The prevalence rates for dyslexia are significant, and it is known as a common disorder. As a result, it is important to know the causes of developmental dyslexia in order to effectively treat it.

### **Etiology of Developmental Dyslexia**

In the realm of specific developmental disorders such as dyslexia, there has been much scrutiny in defining these causes in recent years. One of the emerging models on the etiology of dyslexia indicated that it has multiple causes. Many other cognitive models have focused on a single cause of a phonological deficit (Pennala et al., 2010). According to Peterson and

Pennington (2012), dyslexia was first introduced as a visual processing deficit by Samuel Orton (1925). This visual processing deficit was known as the "reversal error," in which individuals would write "d" for "b" or "was" for "saw." Vellutino (1979) noted that these reversal errors were identified with the print in one's own language. Therefore, this conclusion established that dyslexia is a linguistic problem rather than visual (Peterson & Pennington, 2012). Much research has been conducted since then that has shown dyslexia as a language-based disorder of phonological processing. This claim is known as the phonological theory of dyslexia. The phonological theory of dyslexia refers to the ability to attend and manipulate linguistic sounds. This ability is important to make letter-sound correspondences in the processing of phonological coding. If there are problems with this processing, accurate and fluent word recognition can be perturbed (Peterson & Pennington, 2012). Even though dyslexia is claimed to be a linguistic disorder, there has been a renewed interest in a visual explanation for it. Nittrouer and Pennington (2012) noted that this phonological theory is the most plausible view of dyslexia's underlying cause, although many questions still remain (Peterson & Pennington, 2012).

The phonological theory of dyslexia has been viewed as a single deficit for the disorder for many years. Much evidence has shown that phonological deficits are characteristic in individuals with dyslexia, but a single phonological deficit has been noted not to be sufficient to be viewed as the cause for dyslexia (Peterson & Pennington, 2012). This is the case that many children with other disorders of language development, such as speech sound disorder and language impairment. These children have normal reading abilities despite phonological deficits. This supports what is known as the multiple deficit hypothesis. The multiple deficit hypothesis contends that phonological deficit could arise from sensory or general learning problems. The phonological deficit may cause reading trouble, but other deficits are associated with other reasons (Peterson & Pennington, 2012). A study conducted by Bishop and colleagues (2009) in children with language impairment displayed

that children with language impairment did not develop dyslexia even though their early phonological skills had been poor. The study also found that those children with language impairment only and children with language impairment and dyslexia groups had poor phonological awareness. Those with dyslexia and language impairment were also known to have deficits with rapid serial naming (Peterson & Pennington, 2012).

### ***Genetic causes***

Developmental dyslexia is a highly inheritable disorder, and linkage studies have classified numerous parts of the genome that are likely to produce dyslexia susceptibility genes. Association studies, along with the chromosomal translocation break points, have resulted in the findings of these candidate genes along part of the genome (Scerri & Schulte-Körne, 2010). The key component of these genes is their involvement in neuronal migration. The anatomical abnormalities in dyslexic brains are known as ectopias and are the direct result of irregular neuronal migration (Scerri & Schulte-Körne, 2010). According to Van Bergen et al. (2012), in quantitative genetic studies, results have shown a strong hereditary basis for dyslexia. Reading ability and disability is noted as the end product of many genes interacting with the environment (Van Bergen et al., 2012). According to Neuhoﬀ et al. (2012), dyslexia presents itself as a disorder with a complex and heterogeneous genetic basis. Four genes are correlated with dyslexia, which are included in the development of the cerebral neocortex, either in terms of axonal guidance or neuronal migration. The genetic defects associated with dyslexia are displayed in cortical brain regions that are part of a complex neuronal network for reading (Neuhoﬀ et al., 2012). The brain areas involved are the temporo-parietal cortices, the occipito-temporal cortices, and the inferior frontal cortex. All these areas of the brain appear to be activated differentially in persons with dyslexia (Neuhoﬀ et al., 2012). The reduction of activity in the left temporo-parietal region corresponds with phonological processing (e.g., rhyme detection and segmentation) and word reading. Abnormal activity was also noted in left-occipital temporal

areas to words and pseudoword stimuli, which proposes a visual word processing deficit (Neuhoﬀ et al., 2012). Although it has been noted that dyslexia consists of neurobiological and genetic factors, dyslexia presents risk factors within the family.

### **Risk Factors, Signs, and Symptoms**

Much evidence has been found to support that dyslexia tends to run in families. In studies where one parent is dyslexic, approximately 33-66% of children have been reported to become dyslexic (Van Bergen et al., 2012). Six to sixteen percent of children diagnosed with dyslexia do not have parents with the disorder. Children with a family history of dyslexia are more likely to pass it on to their children than those who do not have such genetic and familial risk factors. Dyslexia is primarily inherited, and due to genetic defects, children with dyslexia demonstrate more weaknesses in literacy. Their underlying cognitive skills are weaker compared to those without a family history of dyslexia. Van Bergen et al. (2012) concluded in his study that examining familial risk children with dyslexia after two years of reading instruction, 30% of the children with family history of dyslexia developed the disorder, compared to only 3% of the children without such a history (Van Bergen et al., 2012). These risk factors suggest that dyslexia can be inherited or experienced within a family.

Dyslexia has been associated with difficulties in phonological processing (Pennala et al., 2010). Problems in phonological processing also result in speech perception difficulties and poor speech sound representations. These phonological processing problems cause difficulty in learning and processing of grapheme-phoneme correspondences. Higher-level speech and phonological problems are derived from a more basic auditory impairment that is not limited to the processing of speech sounds. Other well-established deficits co-occurring with dyslexia encompass problems with verbal short-term memory and naming speed (Pennala et al., 2010).

Frequently, children with dyslexia have difficulties with reading, despite having normal

hearing, cognitive, and neurological profiles. A general consensus is that the disorder is associated with the core deficit in phonology and with impairments in perceiving or representing the spoken form of language (Desroches et al., 2013). Children with dyslexia have marked deficits of their perception of auditory phonemes and their knowledge of the phonological structure of spoken words. Dyslexia is related to difficulties in reading development and processing phonology in speech. Phonological errors are correlated with deficits on a range of spoken language tasks. Children with dyslexia are noted to be poor at tasks measuring their phonological awareness, which is their ability to analyze words in constituent speech sounds. They show poor performance on tasks such as phoneme elision, blending and segmentation, rhyming, and alliteration (Desroches et al., 2013). Knowing the symptoms of dyslexia can help professionals make their case for a diagnosis.

### Diagnosis and Prognosis

According to Jan et al. (2011), reading and spelling tasks are predictive precursors to this disorder; however, some children may have poor reading and spelling similar to dyslexic children but cannot be labeled as them. These opposite observations have helped guide clinicians to infer a rough model of dyslexia that can be called an "interim diagnostic tool." This tool helps clinicians make their diagnoses in a manageable amount of time before investigating more reasons for future intervention. An interim diagnostic tool includes the heterogeneity in dyslexia etiology. This resource evaluates those children that have been identified as struggling readers through reading and spelling tasks in order to pinpoint the specific nature of the underlying cause of reading impairments and to prescribe appropriate interventions (Jan et al., 2011).

Dyslexia's diagnosis is typically in the domain of education and psychology. Psychologists conduct psychometric assessments, which involve evaluation of cognitive, reading and orthographic skill, and phonological awareness (Wajuihian & Naidoo, 2012). Dyslexia shows reading fluency deficits that persist into adulthood (Christodoulou et al.,

2014). According to Schulte-Körne (2010), some of the core symptoms of dyslexia continue into adulthood. A diagnosis of dyslexia has several considerations, such as, psychiatric disorder (ADHD), the child's cognitive ability (intelligence), chronic disease (diabetes), negative psychosocial factors (significant distressing factors at school such as bullying), and the child's psychosocial functional level (interaction with others of the same age). Developmental and school history are needed to make a diagnosis of dyslexia. It is very important to acquire the child's development in reading, spelling, counting, and other school subjects from teachers (Schulte-Körne, 2010).

Schulte-Körne (2010) suggests that writing samples should be taken to examine writing ability, and that questionnaires and clinical interviews be taken to evaluate emotional development, anxieties, and depression. A diagnosis of dyslexia warrants that a child's reading and spelling performance must be below average. This constitutes on reading and spelling tests' scores having a percentile rank of below 16, which corresponds to one standard deviation below the mean (Schulte-Körne, 2010). Diagnosis of dyslexia should not be based on reading and spelling test scores alone. The child's psychosocial development, support and treatment received, the child's integration into school, classmate and friend relations, and the family situation in terms of stress and support influence diagnostic decisions (Schulte-Körne, 2010). Early identification and prevention of spelling and reading disorders are essential to consider.

### Prevention

According to Schulte-Körne (2010), dyslexia often has a chronic progression of symptoms along with psychosocial limitations and psychological stress, which makes preventing reading and spelling difficulties important. In terms of primary prevention, activities to build linguistic abilities have developed. An early support program named, *Hear, Listen, and Learn* has been used in kindergarten. It is used in small groups of children a half-year before school begins and is led by a kindergarten teacher. Its focus involves language games, rhyme recognition, clapping

syllables, and sound recognition (Schulte-Körne, 2010). The program has been known to help prevent written language development difficulties that have been confirmed in long-term studies. This program is known to reduce the risk for those children at risk for dyslexia. Although, *Hear, Listen, and Learn* is only effective when kindergarten teachers are well trained in using the program and highly motivated in teaching it (Schulte-Körne, 2010).

According to Schulte-Körne (2010), family support of linguistic abilities has shown to be an effective for many years. The *Let's Read* program has allowed language support in preschool children by reading aloud together and encouraging knowledge of the alphabet. Within the last half year before children start school, a parent does 15 minutes of activities with the child every day. Three activity books and extensive materials utilize games and tasks involving rhyme recognition and creation, syllables, knowledge of words and sentences, letter-sound associations, and the ends of words and syllables (Schulte-Körne, 2010). These activities are known to be fun for children and prepare them for school by giving them specific tasks. The *Let's Read* program develops children's language and sound recognition abilities through supporting phonological abilities and language skills by reading together. This program is known by two evaluation studies to have improved learning to read and spell (Schulte-Körne, 2010). Management and treatment programming should contain screening in order to indicate if symptoms of dyslexia might be present and to serve as an early identification tool.

### **Early Screening**

Screening is a major component in prevention and early identification of developmental dyslexia. According to Youman and Mather (2013), most United States school districts maintain records on students' reading progress during early grades in order to comply with the No Child Left Behind Act (NCLB). Children who struggle with reading are monitored and receive intervention. A few states have mandated universal screening for dyslexia and other reading disorders as part of progress monitoring in kindergarten through second grade

(Youman & Mather, 2013). The educational code of Texas mandates that all students be tested for dyslexia using a program that is approved by the State Board of Education. According to Youman and Mather (2013), the most common screening procedures include major linguistic and academic areas of dyslexia, such as phonological awareness, single word decoding, reading fluency, and spelling. Students who show a pattern of these difficulties obtain more comprehensive evaluations that are then followed by well-targeted reading interventions (Youman & Mather, 2013).

According to Youman and Mather (2013), other states, such as Louisiana, Washington, Mississippi, South Carolina, Virginia, and Ohio, have laws that require pilot programs and the allocation of funds to promote universal screening for dyslexia throughout the early school years. Kansas and Oklahoma currently have pending legislation for universal screening of dyslexia in public schools. Other remaining states, such as Arkansas, Kentucky, Kansas, Wisconsin, Colorado, and Louisiana, have drafted universal screening legislature that has failed to pass, but revisions and modifications to the current proposals are forthcoming (Youman & Mather, 2013). Missouri has yet to pass any early screening initiatives for children with dyslexia. This early screening initiative in these states is crucial for students with dyslexia because research supports that the most effective interventions are those that are implemented during the beginning stages of literacy instruction (Youman & Mather, 2013). Screening can help lead to diagnosis of a disorder or provide the clinician the information needed in order to pursue assessment.

### **Assessment of Dyslexia**

Screening serves as a precursor to help identify if a diagnosis for dyslexia is needed. Assessments can provide the clinician areas of strengths and weaknesses for children with developmental dyslexia and affirm a diagnosis. Speech-language pathologists primarily use the Comprehensive Test of Phonological Processing - Second Edition (CTOPP-2) as a part of a differential diagnosis for dyslexia. The Comprehensive Test of Phonological Processing



– Second Edition (CTOPP-2). The CTOPP-2 is a very strong diagnostic tool for children with dyslexia. The CTOPP-2 is an individually administered norm-referenced measure designed to assess phonological processing skills related to reading. It evaluates three components: phonological awareness, phonological memory, and rapid naming. These components are measured through subtests that involve phoneme elision and blending, phoneme isolation, short-term memory, rapid naming, and segmentation (Wagner, Torgesen, Rashotte & Pearson, 2013).

According to Meisinger, Bloom, and Hynd (2010), dyslexia has been primarily assessed with measures of single word decoding; however, difficulty with reading fluency has been increasingly acknowledged as an important aspect of reading disabilities. More traditional models of standardized assessment are typically utilized in private clinics, hospitals, and many school settings; however, these standardized assessments and norm-referenced measures may overlook reading fluency. This omission is partly due to the lack of available standardized and norm-referenced measures of reading fluency (Meisinger, Bloom, & Hynd, 2010).

According to Meisinger, Bloom, and Hynd (2010), the majority of commonly used tests of broad reading achievement contain word identification, decoding (pseudoword reading), phonemic decoding (word attack) and reading comprehension measures. They rarely involve measure of reading fluency. Some measures on assessments are titled "reading fluency," but they often do not assess reading fluency as it is typically defined. For example, the reading fluency subtest in the Woodcock-Johnson Tests of Achievement – Third Edition assesses a child's ability to read simple sentences quickly and determine whether simple statements are accurate (Meisinger, Bloom, & Hynd, 2010). This measure may determine valuable information regarding a child's general processing speed or semantic verification processes during a reading task, given the simplicity of the sentences and length of the text. The only commonly used standardized, norm-referenced test of reading fluency currently available for the assessment of children is the Gray Oral Reading Test- Fourth Edition (Meisinger, Bloom, & Hynd, 2010). Assessment

is key in determining the plan for intervention, but counseling and communication among professionals, clients, caregivers, and teachers is essential for successful intervention.

### **Intervention Related to Counseling Clients, Parents, and Teachers**

According to Schulte-Körne (2010), communication and counseling from the clinician to caregivers and teachers is essential for effective treatment for children with dyslexia. Treatment involves defining the disorder and advising parents and teachers. Treatment depends on the severity of dyslexia and psychological symptoms of concurrent disorders. Drug treatment is not effective for dyslexia. Drug treatment is only needed if the dyslexia sufferer is diagnosed with ADHD. Drug treatment for ADHD sufferers can improve learning abilities both inside and outside school. Providing information about the disorder, its causes, and treatment options are relieving to parents (Schulte-Körne, 2010). Diagnosis of dyslexia usually can take years, during which parents have engaged in daily practice on reading activities with their child at home. Hours a day are spent every day on homework on regular dictation exercises. The day consists of the child's frustration and unwillingness to study and much despair over at spelling errors in so many words on samples or tests despite much practice. This stress and frustration often lead to depression in the child and feelings of failure in parents (Schulte-Körne, 2010).

According to Schulte-Körne (2010), clinicians' advising parents about the neurobiological deficits of the child's dyslexia and how it makes it significantly harder for their child to learn than others, relieves parents of much stress. Having the disorder explained to the child also helps relieve his or her stress. Communication with teacher's address psychological stress and how the child can be better integrated at school. Treatment for dyslexia has two known components: treatment of reading and spelling difficulties and any concurrent psychological disorders. Child and adolescent psychotherapy is available to treat psychological disorders. Psychotherapy's focus is to reduce the children's symptoms and improve their individual development (Schulte-

Körne, 2010). Counseling clients, parents, and teachers is an important component in effective treatment in those children and adolescents with dyslexia; furthermore, computer assisted instruction can also help remediate these reading deficits in young children.

### **Computer-Assisted Instruction**

According to Torgesen et al. (2010), a recent examination of nine studies that provided 100 or more sessions of literacy instruction showed a variety of different approaches that could bring acceleration of early reading development in at-risk students. All the successful interventions included provision of intensive instruction in phonemic awareness and phonemic decoding, along with reading practice and comprehension instruction. Instruction was conducted daily one-on-one or in small groups. Empirical research indicates that current computer technology is well suited to provide support for instruction in the word-level reading skills that are challenging for children with dyslexia (Torgesen et al., 2010).

In the study according to Torgesen et al. (2010), one program called *Read, Write, and Type* (RWT) consists of specific teacher lessons that were created to help students prepare for learning and practice on a computer program. The *Read, Write, and Type* program was developed by Jeanine Herron in 1995 to help children attain foundational alphabetic reading skills through writing and spelling activities. RWT is a software program that helps engage children in phonetic spelling and writing through and engaging story line and colorful animation (Torgesen et al., 2010). This program allows the children to express themselves through written language and gives them instruction, phonological awareness practice, letter-sound correspondences, and phonemic decoding. The children do this in the context of learning keyboarding skills (Torgesen et al., 2010).

According to Torgesen et al. (2010), RWT also assists children to learn touch-typing skills without looking at the keyboard. Instructors helped the children not look at the keyboard by covering it with a small box that allowed them to type, but prevented them from seeing the keyboard. The RWT program encourages children to acquire "phonics"

knowledge because they spend much of their time processing written material. Teachers are supplied a series of 40 lessons designed to instruct the skills needed to work on the computer (Torgesen et al., 2010). Teachers would teach the graphemes for 40 phonemes and would have the children practice "typing" words containing these phonemes on paper keyboard prior to working on the computer. Fingering techniques were instructed for typing, and phonemes were taught in the context of rhyming stories and manipulating them during oral phonemic awareness activities. The phonemic awareness activities were practiced on the computer, and the children practiced spelling and typing words that contained new phonemes. The program allows the previous lessons in order to review previous learning (Torgesen et al., 2010).

According to Torgesen et al. (2010), instruction software was created in a program called *The Lindamood Phoneme Sequencing Program for Reading, Spelling, and Speech* (LIPS), which has an extensive history of use as a teacher-led instructional program for students with dyslexia. The LIPS program provided instruction in phonemic awareness and allowed children to learn the articulatory gestures associated with each phoneme. This learning environment was facilitated with phonemic awareness activities such as, phonemes in words using mouth-form pictures, colored blocks, and letters to represent the phonemes in words (Torgesen et al., 2010). Once the children developed reasonable mastery of an initial group of 10 consonants and 3 vowels, they began reading text. The reading in this study took place on the computer through the computerized use of *Poppin Readers* by Smith in 1992. *Poppin Readers* was written in a highly decodable text that followed the instruction use of the LIPS program. Children could read these books on the computer relatively independently by clicking on any word they had trouble, and the computer would pronounce it for them (Torgesen et al., 2010). While computer-assisted instruction is an effective in remediating literacy deficits, other literacy approaches and instruction are important to implement in treating children with dyslexia.



### **Literacy Instruction**

According to Peterson and Pennington (2012), evidence-based treatments for literacy instruction has developed from further knowledge of the neurobiology of dyslexia. The best treatment approaches consist of explicit instruction in phonological awareness, the alphabetic principle and phonics, word analysis, reading fluency, and reading comprehension. Much more is known about reading deficits in younger children than older children. Accuracy difficulties seem easier to treat than issues with fluency. Reading fluency seems harder to treat because it depends more on the students reading experience, which varies by reading ability. For older children that have experienced repeated reading failure, it may be more difficult for them to learn print exposure (Peterson & Pennington, 2012). Some evidence shows that reading fluency problems can be prevented at early age (age range 5-7 years) with appropriate intervention for at least a short term. Professionals should not wait after a child has been diagnosed with dyslexia or experienced repeated reading failures to implement reading treatment. Early intervention for reading deficits is known to be more effective than remediation (Peterson & Pennington, 2012).

According to Peterson and Pennington (2012), treatment of reading failure is most effective in a one-on-one or small group setting. Successful intervention emphasize phonics instruction, phonological awareness, supported reading of a connected text, writing exercises, and comprehension strategies. The gains of literacy intervention differ among individuals, with about half of successfully treated children making improvements in reading ability for at least 1-2 years (Peterson & Pennington, 2012). Phonological awareness, letter name and sound knowledge, and rapid serial naming skills determine treatment response and are essential preschool skills that predict later reading ability. Long-term prognosis of dyslexia is determined by language skill in both children and adults independent of treatment (Peterson & Pennington, 2012). Literacy instruction can help those children with reading difficulties and dyslexia, but response to intervention (RTI) is an essential model for professionals to implement for those students at risk for these reading

difficulties and dyslexia by providing high quality instruction and consistent progress monitoring.

### **Response to Intervention**

According to Tunmer and Greaney (2010), the response to intervention (RTI) approach is one of preventing and identifying reading disability for those at risk students. RTI addresses what dyslexia and reading disability is, what causes it, and the impairment in phonological processing skills required to learn to read. This is done in response to high-quality instruction. The RTI model provides policies of identifying reading disability and dyslexia, for closely monitoring progress in acquiring the word identification and text comprehension skills and strategies known to be causally related to early development, and for implementing researched-based secondary and tertiary intervention practices for those children with persistent literacy deficits (Tunmer & Greaney, 2010).

According to Tunmer and Greaney (2010), RTI focuses on underachievement on reading and reading-related measures and poor response to high quality instruction. This helps professionals in identifying students at risk for reading failure. Evidence-based instruction along with continuous progress monitoring are utilized along three tiers in the RTI model. The at-risk students for dyslexia are those who show little or no progress in reading performance after exposure to multiple tiers of RTI. These children are in need of continued services. This approach allows professionals to identify whether the core phonological deficit is biological or environmental (Tunmer & Greaney, 2010).

According to Tunmer and Greaney (2010), the RTI approach is advantageous due to its flexibility of differentiating intensity of instruction to improve educational outcomes for all at-risk and struggling readers, thus avoiding the all-for-nothing nature of many remedial programs. According to Torgesen (2004), at-risk students and struggling readers must improve their skills at a more rapid rate than their typically developing peers in order to close the gap in reading development. In order to achieve this, the intensity of preventative and remedial instruction must be greater than that of

classroom instruction (Tunmer & Greaney, 2010). According to Vaughn and Linan-Thompson (2003) and Wanzek and Vaughn (2008), the intensity can be increased by reducing group size, increasing session time, or combinations of these. According to Wanzek and Vaughn (2008), more research needs to be conducted in order to determine which approach or combination of approaches to increase intensity of instruction is most effective (Tunmer & Greaney, 2010).

According to Aylward et al. (2003), Shaywitz et al. (2004), and Simos et al. (2007), the RTI model is known for improving reading difficulties in children with dyslexia. This model is supported by emerging studies of neuroimaging showing the neurobiological effects of successful reading interventions for children with severe reading difficulties. Evidence has indicated neurophysiological processes involved in reading. Functional magnetic resonance imaging (fMRI) has been used to study neurological processes and activity before and after remediation of reading impairments by focusing on interventions in intensive training in phonologically based skills and strategies. After successful remediation the neuroimaging studies of struggling readers have demonstrated typical neurological activity of those as typically developing readers (Tunmer & Greaney, 2010).

### **Conclusions and Future Study**

Speech-language pathologists and other related professionals should be knowledgeable of dyslexia, its etiology, prevalence, symptoms, diagnosis, assessment strategies, and intervention approaches in order to help serve those in overcoming dyslexia. Dyslexia is primarily defined as a phonological processing impairment that impacts reading accuracy and fluency and causes difficulty with the decoding of words. Dyslexia is classified under learning disorders, and it displays a prevalence ratio of 2:1 of boys to girls. Dyslexia is primarily neurobiological and genetic in nature, but it can be passed on and experienced through the familial environment. Common symptoms of dyslexia include phonological processing deficits, difficulties with auditory perception of written phonemes, and phonological difficulties

with spoken tasks. Dyslexia's symptoms are known to persist into adulthood.

Diagnosis of dyslexia is the result of careful analysis of assessment, patient case history, and information from the client and caregiver. An evaluation team of medical and related professionals is needed in order to make an accurate diagnosis for dyslexia. In the schools, as a part of an educational team, speech-language pathologists diagnose and treat a learning disability in the area of reading. Most states have adopted or are pushing for an early screening initiative in order to provide early identification of dyslexia. The Comprehensive Test of Phonological Processing-Second Edition (CTOPP-2) is a key diagnostic tool for professionals to use in determining dyslexia symptoms. Reading fluency is mentioned as a key component of dyslexia assessment, and the only assessments that measure reading fluency are the Woodcock Johnson Tests of Achievement-Third Edition and the Gray Oral Reading Test-Fourth Edition. Counseling from professionals, computer-based instruction, literacy instruction, and response to intervention has offered promising measures of treating at-risk and struggling readers with dyslexia. These methods have been used as an effective intervention tools to help with phonological decoding and processing deficits.

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### **References**

- Christodoulou, J., Del Tufo, S., Lymberis, J., Saxer, P., Ghosh, S., Triantafyllou, C., Whitfield-Gabrieli, S., Gabrieli, J. (2014). Brain bases of reading fluency in typical reading and impaired fluency

- in dyslexia. *PLOS One*, 9(7), 1-13. doi: 10.1371/journal.pone.0100552
- Desroches, A., Newman, R., Robertson, E., Joanisse, M., Bacon, S. & Dockrell, J. (2013). Electrophysiological indices of phonological impairments in dyslexia. *Journal of Speech, Language & Hearing Research*, 56(1), 250-264. doi: 10.1044/1092-4388 (2012/10-0351)
- Jan, G., Bouquin-Jeannès, R., Costet, N., Trolès, N., Scalart, P., Pichancourt, D., Faucon, G., Gombert, J.E. (2011). Multivariate predictive model for dyslexia diagnosis. *Annals of Dyslexia*, 61(1), 1-20. doi: 10.1007/s11881-010-038-5
- Marino, C., Mascheretti, S., Riva, V., Cattaneo, F., Rigoletto, C., Rusconi, M., Gruen, J., Giorda, R., Lazazzera, C., & Molteni, M. (2011). Pleiotropic effects of DCDC2 and DYX1C1 genes on language and mathematics traits in nuclear families of developmental dyslexia. *Behavior Genetics*, 41(1), 67-76. doi: 10.1007/s10519-010-9412-7
- Meisinger, E., Bloom, J. & Hynd, G. (2010). Reading fluency: Implications for the assessment of children with reading disabilities. *Annals of Dyslexia*, 60(1), 1-17. doi: 10.1007/s11881-009-0031-z
- Neuhoff, N., Bruder, J., Bartling, J., Warnke, A., Remschmidt, H., Müller-Myhsok, B., Schulte-Körne, G. (2012). Evidence for the late MMN as a neurophysiological endophenotype for dyslexia. *PLOS One*, 7(5), 1-7. doi: 10.1371/journal.pone.0034909
- Pennala, R., Eklund, K., Hämäläinen, J., Martin, M., Richardson, U., Leppanen, P. & Lytinen, H. (2010). Perception of phonemic length and its relation to reading and spelling skills in children with family risk for dyslexia in the first three grades of school. *Journal of Speech, Language & Hearing Research*, 53(3), 710-724. doi: 10.1044/1092-4388 (2009/08-0133)
- Peterson, R.L., & Pennington, B.F. (2012). Developmental dyslexia. *The Lancet*, 379(9830), 1997-2007. doi: 10.1016/S0140-673(12)60198-6
- Scerri, T., & Schulte-Körne, G. (2010). Genetics of developmental dyslexia. *European Child & Adolescent Psychiatry*, 19(3), 179-197. doi: 10.1007/s00787-009-0081-0
- Schulte-Körne, G. (2010). The prevention, diagnosis, and treatment of dyslexia. *Deutsches Ärzteblatt International*, 107(41), 718-727. doi:10.3238/arztebl.2010.0718
- Snowling, M.J. (2012). Changing concepts of dyslexia: Nature, treatment and comorbidity. *Journal of Child Psychology & Psychiatry*, 53(9), 1-3. doi: 10.1111/j.1469-7610.2009.02197.x
- Snowling, M.J., & Hulme, C. (2012a). Annual research review: The nature and classification of reading disorders – a commentary on proposals for DSM-5. *Journal of Child Psychology and Psychiatry*, 53(5), 593-607. doi: 10.1111/j.1469-7610.2011.02495.x
- Snowling, M.J., & Hulme, C. (2012b). Children's reading impairments: From theory to practice. *Japanese Psychological Research*, 55(2), 186-202. doi: 10.1111/j.1468-5884.2012.00541.x
- Torgesen, J., Wagner, R., Rashotte, C., Herron, J., Lindamood, P. (2010). Computer-assisted instruction to prevent early reading difficulties in students at risk for dyslexia: Outcomes from two instructional approaches. *Annals of Dyslexia*, 60(1), 40-57. doi: 10.1007/s11881-009-0032-y
- Tunmer, W. & Greaney, K. (2010). Defining dyslexia. *Journal of Learning Disabilities*, 43(3), 229-243. doi: http://dx.doi.org/10.1177/00221940935009
- Wagner, R.K., Torgesen, J.K., Rashotte, C.A., Pearson, N.A. (2013). Comprehensive Test of Phonological Processing - Second Edition (CTOPP-2). *Journal of Psychoeducational Assessment*, 32(7), 678-681. doi: 10.1177/0734282914525028
- Wajuhian, S.O., & Naidoo, K.S. (2012). Dyslexia: An overview. *Optometry & Vision Development*, 43(1), 24-33.

Retrieved from  
[http://web.b.ebscohost.com.cyrano.ucmo.edu:2048/ehost/pdfviewer/pdfviewer?vid=6&sid=9248fe3f-3079-4783-9316-5dfe9689bfe0%40sessionmgr111&hid=106](http://web.b.ebscohost.com/cyrano.ucmo.edu:2048/ehost/pdfviewer/pdfviewer?vid=6&sid=9248fe3f-3079-4783-9316-5dfe9689bfe0%40sessionmgr111&hid=106)

- Youman, M., & Mather, N. (2013). Dyslexia laws in the USA. *Annals of Dyslexia*, 63(2), 133-153. doi: 10.1007/s11881-012-0076-2
- Van Bergen, E., De Jong, P.F., Plackas, A., Maassen, B., Van Der Leij, A. (2012). Child and parental literacy levels within families with a history of dyslexia. *Journal of Child Psychology & Psychiatry*, 53(1), 28-36. doi: 10.1111/j.1469-7610.2011.02418.x

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## **Advocacy Training: Taking Charge of Your Future**

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How do we teach students in Communication Disorders to be good advocates for their future careers as a speech-language pathologist or audiologist? Advocacy is defined as taking responsibility to influence others to do certain things (Lubinski, Goper, & Frattali, 2007). According to Paul and Cascella (2007), grassroots advocacy “involves efforts of groups of individuals”. The professions of speech-language pathology and audiology present many opportunities to advocate for clients and the professionals in general.

The Code of Ethics of the American Speech-Language-Hearing Association ([www.asha.org](http://www.asha.org)) includes every speech-language pathologist “holding paramount the welfare of persons served professionally.” This mandate implies that SLPs have a responsibility to any child or adult who has a communication disorder, whether that client is on their caseload or not. This responsibility includes action that will enable each client who needs services to access those services. That access requires funding and the majority of funding sources are maintained by legislative action (Silverman, 2003). Henri (2011) indicated that professionals must make advocacy an integral component of their agency or department.

According to the Missouri Speech-Language-Hearing Association’s website “advocacy is essential to our practices. Simply being aware of issues affecting our clients and us is not enough. We must actively engage ourselves in supporting the interests of those we serve in our professions by voicing our questions and concerns to those directly involved in making the decisions that affect us.” According to the American Speech-Language-Hearing Association’s Advocacy in Action (2004),

establishing an effective communication link between advocacy partners is a crucial step in teaching students in the advocacy process. Regular communication is needed to monitor progress on legislation, address any issues that may arise, discuss strategies and maintain momentum for any proposed initiative (ASHA, 2004).

MSHA sponsors an annual Legislative Day in Jefferson City, the capital of Missouri, to give students and professionals an opportunity to meet with legislators to educate them on the professions of speech-language pathology and audiology and to discuss current issues. This event includes a meeting prior to visiting the state’s capital to identify the current issues affecting the professions of speech-language pathology and audiology and current legislation that is being supported or opposed. Prior to this event, an informational meeting was held (and later provided as a webinar) to inform students

Students from the UCM were encouraged to attend this statewide legislative event and were provided transportation to the state capitol. Prior to the legislative event, UCM faculty and staff members also held discussions in classes about important legislative efforts in the state currently proposed.

Prior to the legislative events, students were asked to identify their legislator and one current topic that was of interest to their future profession. After a variety of legislative events, students were again given an opportunity to identify their legislator and a current event and this survey showed a significant difference in the students’ abilities to identify these key legislators and current issues.

Students were also asked if they agreed that they had a voice in making change happen in state government and they were asked again after a variety of events. The survey results showed a significant difference in the students’ belief that they had a voice in the state government process. Talking to a legislator in person was an event that showed a significant difference in students’ confidence. Talking with a legislator in person with a mentor did not show a significant difference in the pre- and post-surveys. Therefore, according to these results, it is not required to assign a mentor to students

with visiting with a legislator in order for their confidence to be increased.

According to Libby and associates, there are ten common elements of successful advocacy campaigns:

1. Identify the issue to be addressed.
2. Research the issue
3. Create a fact sheet to use to summarize the history of the target issue and the proposed solution.
4. Brand the issue by coming up with a catchy slogan to make it recognizable and to help various individuals remember the topic.
5. Identify possible supporters and opponents of your argument. It is important to contact supporters to help with the campaign and to share a wider appeal of the issue at hand. It is also important to anticipate arguments from your opponents so that an appropriate response can be researched and developed.
6. Form a coalition by collaborating with several stakeholders around the target issue. According to Libby and associates (2012), it is vital to include individuals who live in the district of the legislators to fully capture their attention. The broader the base that can be established around a target issue, the more successful the efforts.
7. Develop educational materials to highlight talking points about the issue. These materials should include key information such as phone numbers and email addresses of legislators if stakeholders need to contact these important individuals.
8. Launch a media campaign through websites and email addresses to identify the key issue and to educate others on what action should be taken.
9. Approach elected officials and other appropriate policy makers. Ideally, this would not be the first time the official has heard from you or your organization so that you can rely on a past relationship.

10. Monitor progress on the issue. This can be accomplished by maintaining close contact with legislators and with all constituents.

Blackwell (2001) indicated that the two most powerful influences on members of a legislative body are a face-to-face conversation and an original letter from a constituent. Silverman (2003) provided the following recommendations when contacting a legislator:

- Address the legislator properly such as “Dear Representative Smith”
- Use your own words and personal or business stationary.
- Be brief and to the point.
- Identify your subject clearly and give the name of the legislation or the bill number.
- Cite your own personal experiences or show how the issue would affect you or your profession, the citizens that you serve, and the district that the legislator represents.
- Draw attention to the personal connection you may have with the legislator or a time you met.
- Tell the legislator what you want him/her to do.
- Be sure to include your name and address in all communication with the legislator.
- Time your communication for maximum effect. Contact the legislator early in the session when a bill is being introduced and you want to influence what is written in that bill. If the bill has been sent to a committee, find out who is on that committee and direct your communication to that person about your desired action.
- Let your legislator know that you approve of his/her actions. So often elected officials only hear from people who are unhappy.
- Address only one issue in each correspondence. If you have multiple concerns to discuss, send two separate communications.



- When visiting with legislators, make an appointment with him/her in advance and be prepared for this meeting. Stay on the one topic that is crucial at the time.
- Following this meeting, leave materials with the legislator to remind him/her of the position you represent on the target issue.
- Do get to know the legislator's staff and aides---they can be an important influence to the legislator.

In 2015, MSHA sponsored a webinar several weeks prior to Legislative Day to provide information about the legislative process and the current legislation being supported. MSHA vice-president for legislative affairs, Mrs. Kim Stewart, in collaboration with the MSHA Executive Board arranged events at the capitol building to encourage attendees to learn more about the legislative process and to meet individually with their legislators to discuss the current issues.

In order to prepare students to be good advocates in the future, a variety of activities and techniques have been implemented in the past at the University of Central Missouri in the Communication Disorders Program, in collaboration with the Missouri Speech-Language-Hearing Association. However, the effectiveness of each activity, or the combination of these various activities, has not been assessed. This research strives to evaluate the confidence levels of undergraduate and graduate students in a variety of activities related to advocating for the professions of speech-language pathology and audiology.

This project administered a questionnaire to fifty-eight undergraduate and graduate students who are currently majoring in communication disorders at the University of Central Missouri. All of these students participated in a variety of activities designed to educate and motivate them to advocate for their future professions. A questionnaire asked them the number of times they had participated in each activity and they were asked to rank their confidence on each activity with the following rankings: 1=Not Confident, 2=Somewhat Not confident, 3=Neutral, 4=Somewhat confident, 5=Very Confident. The questionnaire was

administered prior to the activities and the same questionnaire was administered after the activities to determine the difference in the individual's knowledge base and their confidence level for completing each activity. Students were asked to rate their confidence in doing activities such as talking with legislators by themselves, talking with legislators with a mentor present, identifying current issues, sending a letter or email to their legislator, etc. Data was calculated from the surveys with correlations identified between which activity showed the greatest increase in the students' confidence to complete the activity. Graduate students were given the opportunity to complete some of these activities more than once and it was analyzed whether attending an event more than once made a difference in their confidence. The activities included were:

- Attending the MSHA Legislative Day events
- Attending a presentation about advocacy
- Talking with a legislator by themselves
- Talking to a legislator with a mentor (such as a MSHA officer or faculty member) present
- Sending an email to a legislator
- Writing a letter to a legislator

## Results

Statistical analysis was completed on the pre- and post results of the survey. A series of t-tests were run to compare the means and significance was determined at the .05 level.

Survey results showed a significant difference between the students' confidence before and after attending the Legislative visit to the capital and talking with legislators ( $p=1.7656$ ). Other significant differences were shown in students' confidence between the pre-survey and post-survey results after students wrote a letter or an email to a legislator ( $p=.018931702$ ). Talking to other SLPs or students about advocacy also showed a significant difference between the pre-survey and the post survey ( $p=.034957113$ ).

When asked about her experiences as a student, UCM graduate student Marissa Nadler stated, "The most helpful activity in encouraging me to advocate for my future

profession was going to the Missouri State Capital for Legislative Day. Being able to physically be present in the Capital was very important to me. I had to ask myself "Why I am there?" "What are we advocating for?" I had to listen and educate myself on the funding issues that were present. I felt attending Legislative Day in my undergraduate years was a little overwhelming but the experience opened my eyes to the importance of legislation and bills we wanted to pass. I also believe that attending this event in my undergraduate years gave me confidence when I attended a similar event again in my graduate years. I now know, from that experience, how important funding is to make our services possible. I feel comfortable advocating for speech language pathology, and understand the importance of advocating for our profession after attending Legislative Day in my undergraduate and graduate years." (personal communication July 8, 2015)

### Recommendations

1. Identify key stakeholders in issues related to speech-language pathology and audiology. Include students, faculty, working professionals, parents, and clients. Set up an easy link for each stakeholder to identify THEIR legislator and the email and/or phone number they should use to contact this person.
2. Identify university resources that will support students in learning to advocate for their future profession. Financial support for activities should be requested so that costs such as transportation to meetings and refreshments for meetings will be covered.
3. Offer students an incentive for attending informational sessions about how legislation is passed and the impact that legislation will affect them.
4. Collaborate with other professionals in your region or

state to increase the number of individuals working on the same issue.

5. Establish clear communication channels for everyone who would like to be involved in the advocacy process. Emails, telephone calls, faxes, and personal visits will all play an important role in advocating for the proposed legislation. Set up a group email that will quickly inform all stakeholders of current events and clearly ask them for specific actions such as emailing their legislators. Electronic communication can be established with the use of the following resources:  
<http://www.house.mo.gov/content.aspx?info=/info/howbill.htm>
6. Utilize electronic resources to educate students and other stakeholders on the process of passing a bill in the state. The following resources are suggested:  
<http://votesmart.org/education/how-a-bill-becomes-law>

### References

- Advocacy in Action: A State Model for Change (2004), Published by the American Speech-Language-Hearing Association.
- Blackwell, J. (2001) Keep On Voting After The Election: How Ordinary People Get What They Want from Government, Insight Publishing, Sevierville, TN
- Henri, B.P., (2011) At the Table or on the Table: It's Our Choice. Perspectives on Administration and Supervision, American Speech-Language-Hearing Association.
- Henri, B.P., & Hallowell, B. (1996) Action planning for advocacy: Issues for speech-language pathologists and audiologists in the face of the expansion of managed care. HEARSAY: Journal of the Ohio Speech and Hearing Association, 11, 61-64.



- Lubinski, R., Golper, L. & Frattali, C. (2007)  
Professional Issues in Speech-Language  
Pathology and Audiology. Thomson  
Publishing, New York.
- Paul, R., Casella, P., (2007). Introduction to  
Clinical Methods in Communication  
Disorders. Brookes Publishing,  
Baltimore, MD.
- Ruder, K., Noplock, M.L. & Johnson, P.R.  
(2003). Grassroots Legislative  
advocacy. Perspectives on  
Administration and Supervision, 13 (2),  
4-6.
- Young, A. (2005). Advocacy in your state  
capitol. Perspectives on Administration  
and Supervision. 15 (1), 6-8.

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## **Working with Your Librarian**

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### **Abstract**

School based SLPs regularly collaborate with many professionals in their building. One partner who may be overlooked, however, is the librarian. Recently, the authors -- 2 SLPs and 2 librarians -- had the opportunity to work together on a formulated case study. While searching for resources to assist our fictional student in honing his language and spelling skills, we discovered that we knew very little about each other's professional expertise. This article is a result of our collaboration, and gives the reader a pathway to follow when working with his or her librarian to expand their repertoire of functional therapy material.

"I have a new reader who misarticulates the /r/ phoneme during connected speech tasks, do you have any suggestions for age appropriate reading material loaded with those sounds?" "One of my 3<sup>rd</sup> grade students struggles with spelling words containing long vowel *a*, and *i*, do you have any online resources that would interest her?" "Do you have any short readings with the "uh" or schwa sound for an eighth grade boy reading below grade level?" "Would you suggest I use fiction or non-fiction material with my high school guys?" These are typical questions you, as the school's speech-language pathologist, might ask when searching for therapeutic materials. This article will present some basic techniques that will help your librarian answer such questions. First, however, it is important that you clearly define specifics regarding the broad scope of services a school-

based SLP may provide, as well as profession-specific terminology.

### **Laying the Groundwork**

Many librarians are not aware of how SLPs work with students. Most realize that therapeutic treatment addresses issues with speech articulation and phonological development, speech fluency, resonance, and voice. However, few understand that caseloads will include students with delays or disorders in the comprehension, expression, and social use of language in both oral and written forms. You may need to explain that these language disorders are frequently paired with limited cognitive-linguistic skills encompassing literacy, memory, sequencing, and attention. To help you forge a connection with your colleague, this paper will focus on language-literacy-cognition -- areas for which librarians have extensive knowledge and resources.

### **Explain What You Do to Assist Language and Literacy Development**

Your librarian needs to understand that the SLP has a fundamental knowledge of the language development needed to function effectively in the classroom. Throughout the day the average young child must interpret spoken directions of increasing length and complexity; these directions often contain concepts that require the student to remember names, order of mention, and specific characteristics of an object. Moreover, the child must understand subtleties of word meaning, inflections, syntax structure, and morphological derivations. The young child is continually bombarded with new information and exposure to the vocabulary of basic concepts such as dimension, size, location, position, quantity, and categorization. Additionally, Pre-K and kindergarten students are expanding their use of pronouns and learning to conjugate various verb forms. In other words, they are obligated to both understand and express an ever increasing bank of words, thoughts, and concepts. School-aged students have these same demands placed on them, but are expected to perform at a more abstract and independent level. They continually will be required to understand and express language, both oral and written, in increasingly longer and

more complex narratives. But what about the students who demonstrate delays or disorders in their ability to develop these skills in a typical manner? The school-based SLP works to assess, identify areas of deficit, formulate goals, and provide therapy service to address these students' needs.

Let your librarian know that you use a number of comprehensive language and literacy evaluation tools to pinpoint academically relevant areas of weakness in a student's language development. Once targets are identified, you create and implement measurable goals. While therapy sessions typically occur outside the regular classroom, it is often in the student's best interest to deliver services in the classroom through collaborative interactions with the regular or special education teacher as needed. To facilitate the most functional practice and application of the strategies being taught by the SLP, materials used will primarily come from goal-specific speech-language resources, academic text or worksheets used in the classroom, and the resources identified by the school librarian.

### **Review Profession Specific Terminology**

One of the first considerations when working with your librarian is to define some of the terms SLPs use. For example, our case study focused on Michael, a 6<sup>th</sup> grade boy reading on a 4<sup>th</sup> grade level who needed to improve his spelling. In presenting this fictional case, we discovered that our two librarians needed the SLPs to define some of the terminology used in the diagnosis of spelling problems. The first term is "phoneme", which is the smallest part of a spoken language that makes a difference in meaning ("oh" = one phoneme, "on" = two phonemes, "shut" = three phonemes). Our librarians were surprised to learn that English has about 41 phonemes. The second term is "grapheme", which is the smallest part of written language that represents a phoneme (b, d, ch, sh, th). The librarians also asked for clarification of the following terms; these describe important skills you may be focusing on when addressing spelling and reading difficulties, each of which can be systematically taught when practical materials have been acquired.

### ***Phonological Awareness***

The broad term that includes phonemic awareness, rhymes, syllables, and rimes (the part of a syllable that contains a vowel and all that follows it: -ag, -eat, -at, etc.).

### ***Phonemic Awareness***

This early developing literacy skill is a subcategory of phonological awareness. It is not phonics. It is the ability to hear, identify and manipulate sounds in spoken words. Examples include recognizing which words in a group begin with the same sound, identifying the first or last sound in a word, blending separate sounds into a word, and breaking a word into separate sounds. This awareness is important because it helps children understand that letters and combinations of letters represent speech sounds and that the relationships between letters and sounds are predictable (i.e. the alphabetic principle).

### ***Orthographic Awareness***

This is the ability to make note of, code, remember, and manipulate letter and multi-letter units in writing. It is important because it also supports learning of the alphabetic principle and is the foundation for spelling.

### ***Morphological Awareness***

This is the knowledge of the word structure of our language and includes knowledge of prefixes, suffixes, inflections, and derivation. It helps with decoding new words and facilitates comprehension.

### ***Mental Graphemic Representations (MGRs)***

These are mental pictures of words, morphemes, and syllables that develop through exposure to print and develop further through phonetic decoding.

### ***Semantic Knowledge***

The knowledge that spelling can impact word meaning and word meaning can impact spelling.

### ***Metalinguistic Skills***

The ability to think about and discuss language.

While the SLP has numerous resources to use with students, we relied on our librarians' expertise to find "authentic reading" materials and activities for our case student, Michael, that would replicate activities of interest to a typical 6<sup>th</sup> grader in his everyday life. Use of these resources shows the student that what he or she is learning with the SLP is meant to be generalized outside of the therapy setting. Since each reading activity fulfills a specific objective; the processes and resource acquisition listed below helped the librarians quickly and efficiently find helpful items.

### **Information Your Librarian Needs: Objective, Grade/Reading Level, Target Words**

When working with your librarian, you must actively clarify what you need. The first objective for Michael focused on building phonemic awareness and his ability to auditorily identify the short vowel 'u' (as in *cup*) in words. Development of phonemic detection would assist him in moving forward and incorporating that knowledge into the spelling strategy. This would include reminders that while short 'u' is most often spelled with the letter 'u', 14% of the time short vowel 'u' is spelled with eight different vowel combinations. So we asked our librarians to find books, articles, and web-based sites "loaded" with short 'u' words containing the various spellings for our student to identify.

Second, note the student's grade level and reading level; the classroom or special education teacher should have this information. Remember that the material your librarian finds should not be too difficult – it is hard enough to work on language-literacy challenges without having to face difficult reading tasks. It is advisable to request they search for titles that are about one grade level below the student's actual reading level, but remain appropriate for his or her developmental level. Many of the search words your librarian will need are targeted to a specific reading/grade level. Knowing the student's Lexile level is helpful when using the databases mentioned below. For further information on understanding Lexile levels and how they relate to grade level reading, go to <https://lexile.com/about-lexile/grade-equivalent/grade-equivalent-chart/>

Third, and perhaps most important, provide a list of target words that follow the pattern the SLP wants to see in the authentic reading selections. This is a crucial step in the process! While three or four sample words can be helpful, thorough lists of 10 to 20 words make searching more efficient. A busy SLP can readily find more words using software such as the *SPELL-Links 2 Word List Maker* (Learning By Design, 2012); this generates phoneme-specific lists by grade level. Your librarian can also find lists using books in their collection (see: Drazee, 2005; Ornish, 2010), or by placing the phrase '*words with the \_\_ sound*', (i.e. *words with the short u sound or long i sound*) into a search engine such as Google. Our librarians found that long lists allowed them to mentally "connect" words with subject areas that could easily contain target words, as demonstrated through the examples below. We reminded our librarians that they should not feel responsible for actually procuring all the resources all the time, but can point the SLP in the right direction and teach her/him how to use resources such as the library catalog and library databases. Most librarians are eager to help their colleagues; however, you might ask your librarian to create a "Cheat Sheet" on how to access their specific collections so that you can do the work yourself if necessary.

### **Tools and Areas of the Library Collection That Will Help You Most Databases to Help Locate Books**

To help our fictional student, Michael, discriminate the short 'u' sound from other vowel sounds and gain knowledge of the letter patterns for spelling short 'u', we wanted him to search for words with the both the 'regular' and the rarer short vowel spellings in authentic reading selections. To find books, the SLPs collaborated with the librarians using both the *SPELL-Links 2 Word List Maker* CD as well as the Google search engine to locate word lists containing the short 'u' sound for Michael's 4<sup>th</sup> grade reading level.

Our derived word list contained the word '*truck*'. Since an eleven-year-old boy might be interested in trucks, our librarian used this in a keyword search to find titles in which the short 'u' sound might occur. They found a

number of titles on monster trucks using the *Children's Literature Comprehensive Database* (CLCD) (<http://www.clcd.com/>), the *Lexile Framework for Reading* site ([www.lexile.com](http://www.lexile.com)), the Follett *TITLEWAVE* site (<http://www.titlewave.com/login/>), and the Book Wizard on the *Scholastic* site (<http://www.scholastic.com/bookwizard/>). The most versatile of these is CLCD, a purchased database. However, any of the databases above can be used to find appropriate titles for specific reading levels. Both the Book Wizard and Lexile Framework for Reading sites are free; Titlewave is available to Follett subscribers.

Since Michael's reading skills were reported as significantly below grade level, we specifically searched for non-fiction titles; most students do not identify these as 'baby-ish' and they often work for a wide range of age groups. We considered non-fiction titles one grade below his reading Lexile level and checked the displayed covers to see if any might work for his age. Some databases allow for more specific ways to construct the search, such as keying in the interest level and reading level; we used these when available.

The search brought up titles on monster truck books that might include a number of words with our target sound: '*devastation, destruction, jump*', and *donuts*'. Reading levels were verified by completing specific title searches for each using CLCD. After combing through these, the SLP and librarian quickly assessed whether or not these would be good titles for this student's authentic reading exercises.

### Databases to Help Locate Articles

To address Michael's additional goals, the SLPs devised activities to allow him to discover that while a single vowel letter is typically adequate when spelling words with the short vowels, the v-consonant-e pattern (vCe) is often needed to spell long 'i' (*ride*) or 'a' (*cake*) vowel sounds. To assist us, our librarians suggested shorter articles on topics that a boy this age might find interesting. We generated word lists for the vCe pattern in *SPELL-Links 2* Word List Maker, and found other lists online by entering "vCe pattern word lists" into the Google search engine. We narrowed the lists to

interest-specific words, then plugged them into keyword searches within databases such as *Kids Search*, *Middle Search Plus*, and *Primary Search*. (<http://www.ebscohost.com/schools>). These databases allow users to search in resources such as magazines, newspapers, and books. Some, but not all of the entries include the Lexile reading level for that work. The Missouri consortium, MOREnet, provides the use of this database to our public schools – unfortunately, not all teachers and librarians are aware of this. Check your available resources!

Using *Primary Search*, which contains articles geared toward elementary school students, but could easily be of interest to middle school students, we keyed in "bike" and "race" to pick up the long 'i' and long 'a' sounds, and limited the results to full text articles. Very few article titles included the Lexile level; we scanned through the results and found the 56<sup>th</sup> one had a Lexile level of 850, or about the beginning of 5<sup>th</sup> grade. "Surviving Your First Mountain Bike Race" included the words *price, times, rides, bikes, race, take, same, and like* on the first page. This short article would provide a solid authentic reading experience for Michael.

Michael's prescriptive spelling assessment also revealed poor understanding of word relatives whose root word was orthographically transparent (in which the sound/letter correspondence was close to 1:1), but which have a phonemic (sound) change in the derived form (e.g. "please" vs "pleasure"). Spelling derived words requires not only understanding of semantic relationships but knowledge of both the spelling of word roots and their word relatives. To help Michael, the SLPs generated a starter list that contained the following word roots (and meanings): *vis* (see), *cred* (believe), *cycl* (turn), *mot* (move), and *loc* (move) and worked to establish his connection between root words and their related words. We stressed that the root word's spelling remains constant and allows for related words to be formed by the addition of prefixes and/or suffixes. Our librarians then provided extension activity material for the student to search out words for each target word root using the procedures below.

The Wikipedia article "List of Greek and Latin Roots in English" provides partial lists

of root words that can quickly be scanned for words containing each root. Google is also a helpful source. For example, using Google to search the term ‘*root word mot*’, the librarians easily found lists of words. One site proved to be particularly helpful for middle school and high school students: <http://membean.com>. The “Word Root of the Day” page included an interactive ‘tree’ listing a number of ‘*mot*’ words and their definitions that would work particularly well in a session with a student such as Michael. Using the *Primary Search* database, the librarians chose an article at the Lexile 880 level entitled “Gyrating Gyroscopes” from *Appleseeds* containing the words ‘*remote, motion, and motors*’. This short article on how gyroscopes are used, how they work, and who invented them, is perfect for a student with goals similar to Michael’s to scan within the confines of a therapy session.

### **Nonfiction Series Books**

Along with the authentic reading material found via databases, it was helpful to browse through nonfiction series titles designed to support developing readers. To help Michael identify the vCe pattern within text, the librarians considered the previously generated word lists to find some middle grade series titles that might be of interest to a 6<sup>th</sup> grade male. The titles *Deformed frogs: A cause and effect investigation*, *Sports science*, and *Who scoops elephant poo? Working at a zoo* all contained a significant number of vCe patterned words. While below Michael’s grade level, these nonfiction titles are short enough for the SLP to use within one session. While most school libraries have many series books in their collection, we have listed those found to be especially helpful in our bibliography.

### **Specialized Phonics Series Books**

Phonics series are most often used with elementary school students, and should be your go-to source for quick selections. At times these can be used for older students. For example, *Curious Miss Muss* (Westberg, 2005), part of the SandCastle series, is geared for younger students, but its humor and inclusion of alternate spellings for the short ‘u’ sound made it a useful choice when working with Michael on this

sound and its many spellings. Had our case student been younger, our librarians may have included titles in series books that focus on short vowel sounds, such as Bob Books (Maslen, B.L., 2006) or Flyleaf Publishing’s *My Wagon Is Red* (Appleton-Smith, L. 2012). A list of helpful series is included in our bibliography.

### **Early Readers**

As with phonics series, early readers often reinforce specific word patterns, and are excellent sources for an SLP. Many times the title of an early reader indicates a rhyming pattern (See *Runny Honey* by Jane Clarke, Crabtree, 2008) or a grapheme (See *Pip Point* by David Milgrim, Atheneum, 2003) that could fulfill a specific need. You might work with your librarian to produce a list of often-needed patterns and go through their collection to list the titles that would work with each pattern. This type of ‘advance work’ can save you time in the long run.

### **Poetry Books**

Short poems often lend themselves to the study of specific spelling patterns. Michael demonstrated limited understanding of base-word spelling principles used with past-tense and plural morphemes (e.g., *wisht* for *wished*, *dogz* for *dogs*). So we needed sources stacked with those patterns that could be read in a short period of time. Our librarians turned to popular poets Jack Prelutsky and Shel Silverstein, and found a number of selections in *My Dog May Be a Genius* (Prelutsky, 2008), including “My Brother Poked a Porcupine,” which contain ‘*poked, stumbled, sprayed, and stepped*’.

When we needed a poem with “lots of double consonants” we found “There Are Zebras on the Ceiling” in *A Pizza the Size of the Sun: Poems* (Prelutsky, 1996). This short poem includes ‘*ballet, running, wallaby, butter, buzzards, disappeared, puppy, mallard*’. “An Extraterrestrial Alien” from the same book also fulfilled this requirement with the words ‘*appearance, plummeting, occurred, uncommonly, apparent, enthralled, and dinner*’.

### **Biographies**

Biography titles contain numerous regular past tense and plural words. The SLPs

wanted to facilitate Michael's appreciation for those spelling patterns in authentic reading contexts. Because we wanted a short selection, our librarians searched through some picture book biographies that might interest a 6<sup>th</sup> grader. We chose *The Dinosaurs of Waterhouse Hawkins* (Kerley, 2001), which includes in the first three pages of text, the words 'carriages, clattered, tipped, ladies, ducked, dodged, liked, hurried, visitors, hours, artists, animals, loved, models, and seemed'. Of course, a single chapter of a longer biography might also be useful in this case.

### Graphic Novels

When addressing the goal for double consonants following a short vowel pattern, the SLPs specifically requested a graphic novel that kids Michael's age typically enjoy. *Ramp Rats* (O'Donnell, 2008), a simple but catchy graphic novel, is ideal. It includes the words 'massive, summer, Benny, little, better, bully, bigger, bully, rearranged, summer, wedding, dragged, rolling, middle, follow, alley, and lesson' in the first 8 pages. The book has lots of drawings, and not much text in its balloons and boxes. The Lexile level of 520 makes it a good choice for our student's pleasure reading.

### Make the SLP-Librarian Connection

School libraries contain many resources that can be invaluable to the day-to-day work of the SLP. Collaboration with your school librarian is the key. Once you get to know one another, ask for help in locating titles that contain a sufficient quantity of the word patterns needed for a specific student. Over time, you might encourage your librarian to evaluate and make lists of specific titles within their collection that have patterns you know you often use. This allows them to pinpoint resources that could be useful for a wide range of grade and reading levels. Hopefully, you can assist them to develop bibliographies of titles that meet specific SLP requirements. You might also consider creating search strategy guides that you, the librarian, library workers or volunteers can use to pull and identify potential titles. Our school librarians have a wealth of knowledge and resources applicable to most therapy targets; by making the SLP – librarian connection, you

will quickly and dramatically increase your supply of functional therapy material.

### Bibliography

- American Speech-Language-Hearing Association. "Scope of practice in speech-language pathology." [www.asha.org/policy](http://www.asha.org/policy) (2007): -5. Web. 30 Dec. 2014.  
<http://www.asha.org/uploadedFiles/SP2007-00283.pdf>.
- Price, D., & Drake, G. (1994). Surviving your first mountain bike race. *Bicycling*, 35(8), 58. *Middle Search Plus*. Web. 30 Dec. 2014.
- Wilhelm, M., Hoang, T., Hunt, B., & Banton, A. (2011). ask the bmxperts. *BMX Plus*, 34(5), 18. *Middle Search Plus*. Web. 30 Dec. 2014.

### Poetry and Wordplay

- O'Donnell, L. (2008). *Ramp rats: a graphic guide adventure*. Victoria, B.C.: Orca Book Publishers. Print. ISBN 9781551438801
- Prelutsky, J. (1996). *A pizza the size of the sun*. New York, NY: Scholastic. Print. ISBN 0590149636
- Prelutsky, J. (2008). *My dog may be a genius: poems*. New York, NY: Greenwillow Books. Print. ISBN 0066238633
- Seuss. (1979). *Oh say can you say?* New York, NY: Random House. Print. ISBN 0394842553
- Silverstein, S. (1999). *Falling up: Poems and drawings*. New York, NY, HarperCollins. Print. ISBN 0060248025

### Word Origins

- Baker, R.F. (2003). *In a word*. Peterborough, NH: Cobblestone Publishing. Print. ISBN 0812627105
- Dewey, A. (1995). *Naming colors*. New York, NY: HarperCollins. Print. ISBN 0060212918
- Graham-Barber, L. (1994). *A chartreuse leotard in a magenta limousine*. New York, NY: Hyperion Books for Children. Print. ISBN 0786800038



- Kerley, B. (2001). *The dinosaurs of Waterhouse Hawkins*. New York, NY: Scholastic. Print. ISBN 0439114942
- Lunge-Larsen, L. (2011). *Gifts from the gods: Ancient words & wisdom from Greek & Roman mythology*. Boston, MA: Houghton Mifflin Harcourt. Print. ISBN 9780547152295
- Onish, L. (2010). *Greek & Latin roots: Ready-to-go learning packets that teach 40 key roots and help students unlock the meaning of dozens and dozens of must-know vocabulary words*. New York, NY: Scholastic Professional Division. Print. ISBN 9780545124126
- Sarnoff, J. & Ruffins, R. (1981). *Words: A book about origins of everyday words and phrases*. New York, NY: Charles Scribner's Sons. Print. ISBN 0684169584
- Umstatter, J. (2002). *Where words come from*. New York, NY: Franklin Watts. Print. ISBN 0531119025

### **Root Words, Affixes, and Homonyms**

- Cleary, B. (2009). *The peaches on the beaches: A book about Inflectional endings*. Minneapolis, MN: Millbrook Press. Print. ISBN 9780822576365
- Coffelt, N. (2012). *Aunt Ant leaves through the leaves: A story with homophones and homonyms*. New York, NY: Holiday House. Print. ISBN 9780823423538
- Dahl, M. (2006). *If you were an adverb*. Minneapolis, MN: Millbrook Press. Print ISBN 404813578. .
- Draze, D. (2005). *Red hot root words: Mastering vocabulary with prefixes, suffixes, and root*. (Vols. 1 - 2). Waco, TX: Prufrock Press. Print. ISBN 1593630379 (v. 1)
- Heinrichs, A. (2006). *Prefixes and suffixes*. Chanhassen, MN: Child's World. Print. ISBN 1592964311
- List of Greek and Latin roots in English. (n.d.). In *Wikipedia: The Free Encyclopedia*. Retrieved December 30, 2014, from [http://en.wikipedia.org/wiki/List\\_of\\_Greek\\_and\\_Latin\\_roots\\_in\\_English](http://en.wikipedia.org/wiki/List_of_Greek_and_Latin_roots_in_English)
- Loewen, N. (2007). *If you were a homonym or a homophone*. Minneapolis, MN: Picture Window Books. Print. ISBN 9781404831612
- Motor along with mot! (n.d.). In *Membean*. Retrieved December 30, 2014, from <http://membean.com/wrotlds/mot-move>
- Ornish, L. B. (2010). *Vocabulary pockets: Greek & Latin roots*. New York, NY: Scholastic Teaching Resources. Print. ISBN 9780545124126
- Pulver, R. (2011). *Happy endings: A story about suffixes*. New York, NY: Holiday House. Print. ISBN 9780823422968
- Terban, M. (2007). *Eight ate: A feast of homonym riddles*. New York: Clarion Books. Print. ISBN 9780618766765

### **Series Titles of Phonemic Awareness- Early Readers-Middle Grades**

- Appleton-Smith, L. *My Wagon Is Red*. (2012). (Emergent Reading Series.) Lyme, NH: Flyleaf Publishing. Print. ISBN 9781605410739
- Clarke, J. (2008). *Runny Honey*. (Tadpoles.) New York, NY: Crabtree Publishing. Print. ISBN 9780778738626
- Ebbers, S. (2007). *Power readers* (Vols. 1 - 29). Longmont, CO: Power Readers. Print. ISBN 1593188854 (teacher's ed.)
- Graves, S. (2007). *Bug in a rug*. New York, NY: Scholastic. Print ISBN 0439025508
- Johnson, K., & Bayrd, P. (1983-1988). *Megawords: Multisyllabic words for reading, spelling, and vocabulary* (Vols. 1 - 8). Cambridge, MA: Educators Publishing Service. Print. ISBN 0838818269 (v.1)
- Johnson, K., & Bayrd, P. (2010). *Megawords 2* (2nd ed., Vols. 1 - 8). Cambridge, MA: Educators Publishing Service. Print. ISBN 9780838809006 (v.1)
- Johnson, T., & Cook, S. (2006.) *The quirkles*. (Vols. 1-26). Springfield, MO: Creative 3. Print. ISBN 1933815000 (v.1)
- Maslen, B. L. (2006). *Bob books set 3: Word families*. New York, NY: Scholastic. Print. ISBN 0439845092 (set)
- Maslen, B. L. (2006). *Bob books set 5: Long vowels*. New York, NY: Scholastic. Print. ISBN 0439865417 (set)

- Milgrim, D. (2003). *See Pip Point*. New York, NY: Atheneum Books for Young Readers. Print. ISBN 0689851162
- Minden, C., & Meier, J. (2006). *Umberto's summer day: The sound of short u*. Chanhassen, MN: Child's World. Print. ISBN 1592963161
- Scheunemann, P. (2005). *Tennis in Venice*. Edina, MN: ABDO Publishing. Print. ISBN 1591978181
- Wasowicz, J. Apel, K. Masterson, J.J., & Whitney, A. (2012). *SPELL-Links to reading & writing curriculum contents*. (2<sup>nd</sup> ed.). Evanston, IL: Learning by Design. Web. <http://www.learningbydesign.com/home.html>
- Westberg, J. (2005). *Curious Miss Muss*. Edina, MN: ABDO Publishing. Print. ISBN 1591977827
- Wich, G. (2002). *Neil the eel*. Victoria, B.C: Trafford Publishing. Print. ISBN 1553953363

### Series Titles of Authentic Reading

- Allen, K. (2011). *Deformed frogs: A cause and effect investigation*. Mankato, MN: Capstone Press. Print. ISBN 9781429645331
- Markarian, M. (2011). *Who scoops elephant poo?: Working at a zoo*. Chicago, IL: Raintree. Print. ISBN 9781410938480
- Perritano, J. (2011). *Sports science*. New York, NY: Marshall Cavendish Benchmark. Print. ISBN 9781608700813
- Slade, S. (2007). *The rock cycle*. New York, NY: Rosen. Print. ISBN 1404234934

### Titles for Authentic Reading Discovered Via Database Use

- Cortelyou, N. (2011). *Monster trucks*. New York, NY: Tangerine Press. Print. ISBN 9780545381338
- Gigliotti, J. (2010). *Monster trucks*. New York, NY: Marshall Cavendish Benchmark. Print. ISBN 9780761443858
- Jameson, K. (2014). *Gyrating gyroscopes*. *Appleseeds*, 16(7), 16. *Primary Search*. Web. 12 Dec. 2014.

- Norlander, B. (2006). GREEN racer. (cover story). *Science World*, 63(2), 10. *Primary Search*. Web. 15 Dec. 2014.
- Numeroff, L. (1991). *If You Give a Moose a Muffin*. New York, NY: HarperCollins Children's Books. Print. ISBN 0060244054
- Paulsen, Gary. (1992). *Dunc and the flaming ghost*. New York: Dell. Print. ISBN 9780440406860
- Savage, Jeff. (2010). *Monster trucks*. Mankato: Capstone Press. Print. ISBN 9781429639439
- Semel, E., Wiig, E., and Secord, W. CELF 4: *Clinical evaluation of language fundamentals*. (4<sup>th</sup> ed.) San Antonio, TX: PsychCorp Harcourt Assessment. Print. ISBN 0158037200 (Kit)
- Tesler, P. (2012). *Web slingers*. *Current Science*, 97(14), 4.T *Primary Search*. Web. 12 Dec. 2014.

### Additional Resource for Authentic Reading

- Masterson, J., Apel, K., & Wasowicz, J. (2012). *SPELL-Links to Reading & Writing: Word List Maker*. Learning by Design. Evanston, IL. CD. Web. <http://www.learningbydesign.com/word-list-maker-1.html>

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## **Caseload/Workload Study of Speech-Language Pathologists in Missouri Public Schools: Implications of Key Factors that Contribute to SLP Job Satisfaction**

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### **Abstract**

A survey was distributed to speech-language pathologists (SLPs) in Missouri public schools to obtain statewide information regarding caseload number, workload related activities and SLPs' level of job satisfaction on various aspects of their job. An online questionnaire was sent to school-based SLPs in Missouri to solicit factual information on average monthly caseload numbers, factors that impact caseload assignments and the percentage of time spent on various professional responsibilities and job satisfaction ratings. Results indicated that 24% of the respondents had caseloads that exceeded the maximum state regulated caseload number for SLPs. Respondents were also largely unaware of the maximum caseload regulation within their school districts. Approximately 36% of the SLPs did not recognize themselves as having a specialty. Among SLPs who reported having a specialty, articulation and social language were most commonly reported. About 30% of the respondents had the perception that having a specialty tended to increase their overall caseload/workload. The caseload-related workload was not fully considered for caseload determination (e.g., the SLPs' specialty, experience, co-teaching, class planning, scheduling, meeting, and managerial responsibilities). Most of the respondents reported needing to work either before or after school for a varied number of hours (between 1 and 15). The survey results indicated that, overall, SLPs in Missouri were satisfied with

their jobs, especially on aspects such as employee benefits, supervision/upper management, co-workers, nature of work and student cooperation with service and student outcomes. However, monthly workload, class scheduling complexity and stress level are factors that should be managed to improve the job satisfaction level of SLPs.

**Key Words:** survey, SLPs, caseload, workload, specialty, job satisfaction

### **Introduction**

Caseloads and workloads in speech-language pathology have increased over the years. P.L. 94-142, the Education for All Handicapped Act (EHA) of 1975 and 1986, state regulations that followed, P.L. 99-457, and corresponding state regulations, the Individuals with Disabilities Education Act (IDEA) of 1990, 1991, and 1997 resulted in new responsibilities for public school speech-language pathologists. Additionally, IEP requirements, benchmarks, and progress reporting added to workload (Komes, 2000).

The number of children needing services from SLPs, mandated by the Individuals with Disabilities Education Act (IDEA) has continued to grow. No Child Left Behind, medical advances, demographic shifts, and knowledge of best practices expanded the roles and responsibilities of SLPs (Whitmire, 2004). Moreover, SLPs needed to spend more time on notification and consent forms, evaluation and reevaluation reports, progress updates, IEP meetings, consultation with teachers and other paperwork. A shortage of qualified speech-language pathologists has exacerbated this situation, and many SLPs must take on high caseloads to meet students' needs (Caesar & Nelson, 2008). The caseloads have become unmanageable.

Challenging caseload issues plague SLPs across the country (Block & Frances, 2000). The American Speech-Language-Hearing Association (ASHA)'s national surveys conducted since 1995 indicate an average caseload size of 50 among school SLPs despite a recommended caseload size of 40 (Brook, 2008). Caseload has a tremendous impact on a school-based SLP's stress level. Wisniewski

(1997) noted that “SLPs were experiencing high levels of occupational stress, tension and negative attitudes” (p. 338). Komes (2000) stated that “I am struggling a bit to find the time to remain organized, feeling somewhat overwhelmed and unsure of myself” (p. 6) when caseload was large. Heavy caseload also impacts the effectiveness and efficiency of speech-language therapy. Russ and Chiang (2001) found that larger caseloads negatively impact a student’s achievement; a student’s attendance behaviors and engagement increase when the group size decreases. High SLP attrition and high caseloads appear to be correlated (Russ, Chiang, Rylance, & Bongers, 2001).

Recommending a maximum caseload number doesn’t reflect the workload needed to support each student. Focusing on caseload numbers limits the ability of SLPs to meet the needs of students (Estomin, 2003). In 2002, ASHA established the Ad Hoc Committee on caseload size. This committee published a technical report that suggested a workload analysis approach for establishing caseload standards for speech-language pathologists in schools (ASHA, 2002). Dowden, et al (2006) studied the caseloads in Washington State Schools in 2001. They found no systematic evidence of caseload management strategies across the state. Armstrong, et al (2012) studied the workload status of school-based SLPs in Texas. They found that a workload approach was being used to some extent. It was suggested that efforts should continue to optimize the quality of treatment for schoolchildren and retention of school SLPs (Armstrong, et al, 2012). The Ohio Department of Education (2012) conducted a caseload ratio study in collaboration with 21 local educational agencies (LEAs) in Ohio from 2010 to 2013. Time studies (collecting information about how much time was spent on each task during a work week) and a workload calculator were introduced for effective determination of workloads and caseloads. No previous study on the caseloads of SLPs and workload related issues was found in Missouri.

Job satisfaction is a critical topic in the SLP profession. It refers to the employee’s attitude toward various aspects of his/her job. It is also related to job performance, employment

motivation, mental and physical health, turnover, and attrition. SLP job satisfaction is closely related to caseload and workload related activities. Pezzei and Oratio (1991) conducted a multivariate analysis of the job satisfaction of public school SLPs. Factor analysis revealed that three dimensions: supervision, workload, and co-workers, correlated most with an SLP’s overall level of job satisfaction. Other investigators found that an SLP’s age, years at his/her current job, and caseload size were also predictors of job satisfaction (Blood et al, 2002). Caesar and Nelson (2008) utilized a survey designed to determine the factors that affected SLPs’ perceptions of job stress and job satisfaction. They noted both caseload size and paperwork were related to job stress and satisfaction.

### **Purpose of the Study**

Caseload and workload are two of the major factors influencing the effectiveness of speech-language therapy, SLPs’ stress level, job satisfaction and turnover. This study was conducted to gather information regarding school-based SLP caseloads, workloads and job satisfaction-related factors across Missouri. No prior research has been done on similar issues in Missouri. This research was designed to answer the following questions:

1. What is the actual average monthly caseload of school-based SLPs in Missouri?
2. To what extent are school-based SLPs aware of the regulated maximum caseload in their school districts?
3. Is caseload related to SLP demographic information, such as age, employment setting, and SLPs’ academic degree level?
4. What are the most popular specialties of SLPs and how do these specialties influence their caseload?
5. What factors have been considered for caseload assignment?
6. How do SLPs assign time to workload related responsibilities in a typical week?
7. Is a service-providing model being used? Do SLPs prefer one model over another?

8. How satisfied are school-SLPs with various aspects of their job, including caseload/workload, student outcomes, salary, stress level, nature of work and relationship with co-workers?
9. Does an SLP shortage exist in Missouri public schools?

## **Method**

### ***Instrument***

The questionnaire used was reviewed and approved by the Institutional Review Board (IRB) at Missouri University of Science and Technology (Missouri S&T). The content was based on a thorough literature search and input from experienced school-SLPs. One set of questions was designed to gauge the internal reliability of the survey responses. The survey was constructed and distributed in Qualtrics, an online survey software package. The user-friendly format allowed respondents to answer the questions quickly and easily. Each SLP was only allowed to take the survey once (This was realized by setting Qualtrics in a certain way). Qualtrics also collected the responses accurately online. The Missouri Speech-Language-Hearing Association (MSHA) facilitated the survey distribution by sending the survey link to its members and eWeekly users.

The survey contained three primary sections. The first section had seven demographic questions about work setting, gender, age, and years of experience, certification, academic level and full-time equivalent (FTE). The second section contained 10 questions on caseload-related issues. The third section contained seven questions on SLP workload and job satisfaction. Question seven in the third section was designed to test the internal reliability of the survey. Participants could withdraw anytime during the survey. They were also allowed to resume the survey to complete it at a later time.

### ***Participants and Survey Distribution***

An anonymous survey link, along with an invitation letter, was initially posted on the MSHA listserve on February 11, 2015. The invitation letter explained the purpose of the survey, the anonymity and confidentiality of the

survey responses, and the estimated time (20 to 30 minutes) needed to finish the survey, and the voluntary nature and importance of participating in the survey. The survey link was posted a second time on February 27, 2015 via MSHA eWeekly news. Then it was posted a third time via MSHA eWeekly news along with a follow-up reminder on March 6, 2015 to request SLPs to complete the survey if they had not done so. The survey link was closed on March 13, 2015.

The number of participants who received a request to take this survey is difficult to assess. The designed survey was posted on the MSHA listserve and the MSHA eWeekly news. Although 540 MSHA members list "Worksetting-Schools" on their membership form, the survey was distributed on the MSHA listserve and the MSHA eWeekly news, both of which require a special subscription.

Fifty one complete responses were collected from school-SLPs. The online survey was distributed in a way that each SLP could only take the survey once. It is difficult to calculate the response rate in a percentage, because the listserve and eWeekly news each require voluntary subscriptions, in addition to membership. Not all 540 school-based SLPs subscribe to either or both email sites. The numbers of school-based SLP subscribers and overlapping school-based SLP subscribers are not available. In any case, the response rate was not high (the minimum response rate was 9.4%), although valuable information was obtained.

### ***Data Analysis***

All survey responses were automatically collected by Qualtrics. This process not only saved time but also helped with avoiding potential errors in the data collection process. The responses were downloaded as an SPSS data file for further analysis. Qualtrics filtered out responses from those respondents who identified themselves as working for either a school or a school district. The Statistical Package for the Social Sciences (IBM SPSS Statistics 22) was used to analyze responses from a total of 51 participants. Free online software R (a statistical computing and graphical software) was also used to make the plots.

## Results

### *Respondents' Demographic Information*

Most of the survey respondents (n = 51, 98%) were female. The age group distribution of the respondents (n = 51) was 17.6%, 25.5%, 29.4%, 17.6% and 9.8% for the age groups 20-29, 30-39, 40-49, 50-59, and 60 and above, respectively.

Most respondents reported that they worked at an elementary school (74.5%). The second primary employment setting was middle school (31.4%), followed by early childhood (29.4%) and then high school (23.5%). Approximately 41% of the respondents reported working in multiple work settings. Only 2% of the respondents reported they were SLP supervisors, supervising other SLPs in the current fiscal year.

About 78% of the respondents provided the number of years of experience they had worked in school settings. A third of them had less than 10 years of experience. Another one third had 10 to 19 years of experience. Another

28% had 20 to 29 years of experience, and the rest, 8% had more than 30 years of experience.

All of the respondents reported holding a Master's degree; all but one of the respondents were ASHA certified SLPs. Most of the respondents (86.3%) reported working full-time. The rest reported working either part-time or flexible hours, depending on the school districts' needs.

Approximately 76.2% of the SLPs reported an average monthly caseload equal to or below 50. Roughly 4% of the respondents did not provide a monthly number due to their job function (SLP supervisor or working part-time). The remaining respondents (19.8%) reported a caseload over 50 per month. Most of the SLPs (85%) did not know their school district's regulated maximum caseload number. About 15% of the SLPs reported the maximum regulated caseload number in their districts. The range of the number varied from 25 to 65. The above data is presented in more detail in Table 1.

**TABLE 1. Characteristics of Respondent School SLPs in the Study.**

| Characteristic                             | Percentages of Respondents |
|--|----------------------------|
| <u>Age group of SLPs as of 2015</u>        |                            |
| 20 - 29                                    | 17.6%                      |
| 30 - 39                                    | 25.5%                      |
| 40 - 49                                    | 29.4%                      |
| 50 - 59                                    | 17.6%                      |
| 60 or older                                | 9.8%                       |
| <u>ASHA certified SLP</u>                  |                            |
| Yes  | 98.0%                      |
| No   | 2.0%                       |
| <u>Current primary employment settings</u> |                            |
| Birth to Three Children                    | 2.0%                       |
| Early Childhood                            | 29.4%                      |
| Elementary School                          | 74.5%                      |
| Middle School                              | 31.4%                      |
| High School                                | 23.5%                      |
| <u>Years as an school SLP</u>              |                            |
| 1 - 9 years                                | 32.5%                      |
| 10 - 19 years                              | 32.5%                      |
| 20 - 29 years                              | 27.5%                      |
| 30 - 39 years                              | 5.0%                       |
| 40 years or more                           | 2.5%                       |
| <u>Typical monthly caseload number</u>     |                            |
| Below 30                                   | 13.8%                      |
| 30 - 39                                    | 15.7%                      |
| 40 - 49                                    | 43.3%                      |
| 50 - 59                                    | 15.8%                      |
| 60 - 69                                    | 4.0%                       |
| Above 70                                   | 4.0%                       |

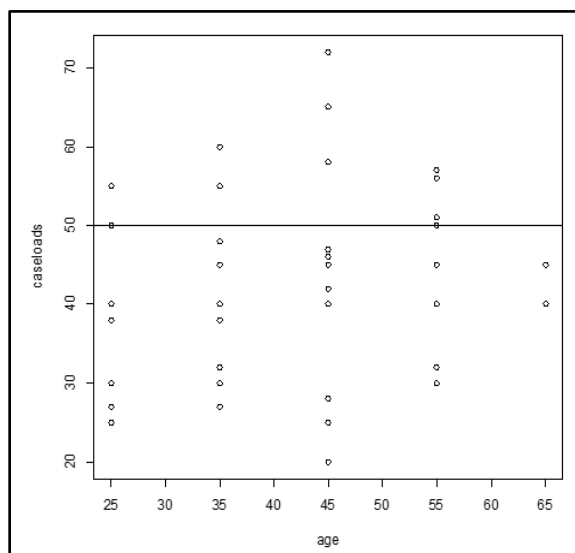
*Note.* The above percentages are based on a total of 51 responses.



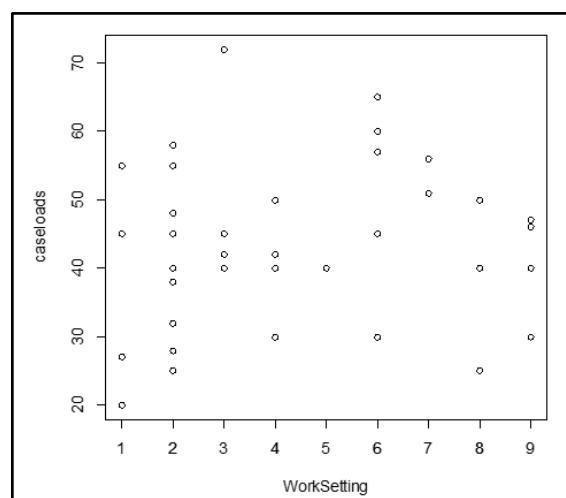
A scatter plot of SLP caseloads versus SLP age was made to determine whether there was a correlation between the two. Figure 1 shows the plot. It shows that SLPs between the ages of 30 – 59 are more likely to have a monthly caseload of more than 50 when compared to SLPs below the age of 30 and above the age of 60. There is no obvious trend between caseloads and age. Figure 2 shows the scatter plot of SLP caseloads in different work

settings. It shows that SLPs working in elementary schools and SLPs that have three or more work settings tend to be more likely to have a caseload greater than 50. There is no obvious pattern between caseload size and work setting. Table 2 represents the key for the work settings in Figure 2.

**FIGURE 1. Plot of SLP caseloads vs. SLP age group.**



**FIGURE 2. Plot of SLP caseloads vs. work settings.**



**TABLE 2. Corresponding work settings for Figure 2.**

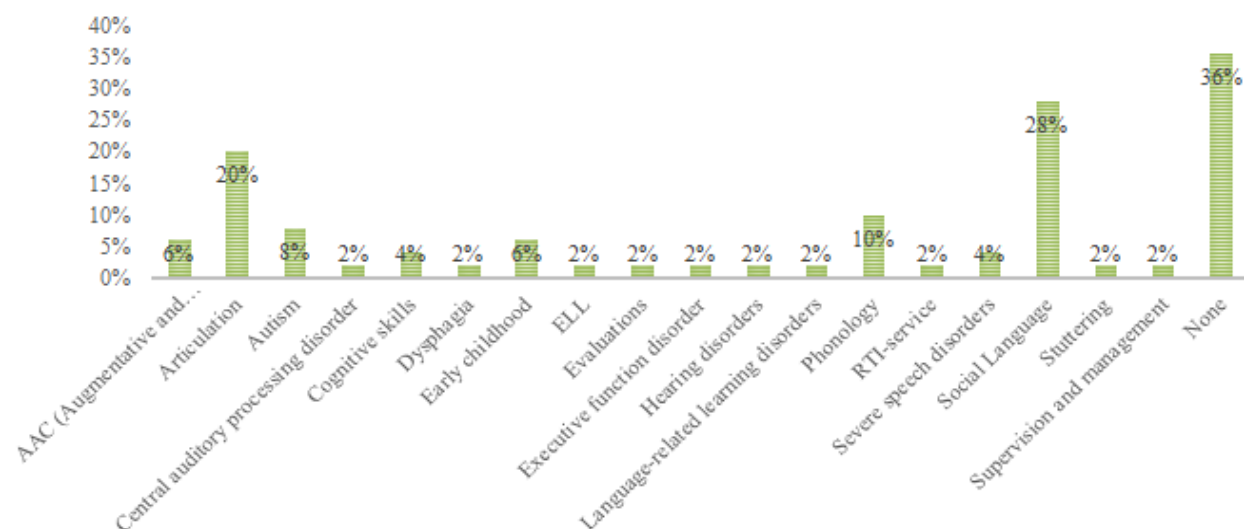
|   |   |
|---|---|
| 1 | EarlyChildhood (3-5)                              |
| 2 | ElementarySchool                                  |
| 3 | BirthToThree&ElementarySchool                     |
| 4 | EarlyChildhood (3-5)&ElementarySchool             |
| 5 | EarlyChildhood (3-5)&MiddleSchool                 |
| 6 | EarlyChildhood (3-5)&Elementary&Middle&HighSchool |
| 7 | Elementary&MiddleSchool                           |
| 8 | Elementary &High School                           |
| 9 | Elementary&Middle&HighSchool                      |

### ***Caseload Related Issues***

SLPs were asked to report their specialty. Figure 3 summarizes the responses. The three main specialty areas among respondent SLPs were social language, articulation and phonology. Approximately 36% of the SLPs did not think they have a specialty.

In response to the question “How does specialty influence caseload?”, the majority of the respondents (31/51 or 61%) reported that having a specialty had no influence on over-all caseload and workload, as well as the workload and caseload of children with impairments that fell within their specialty. Approximately 30% of the respondents reported that specialty would increase their caseload and workload.

**FIGURE 3. Specialty of respondent SLPs.**

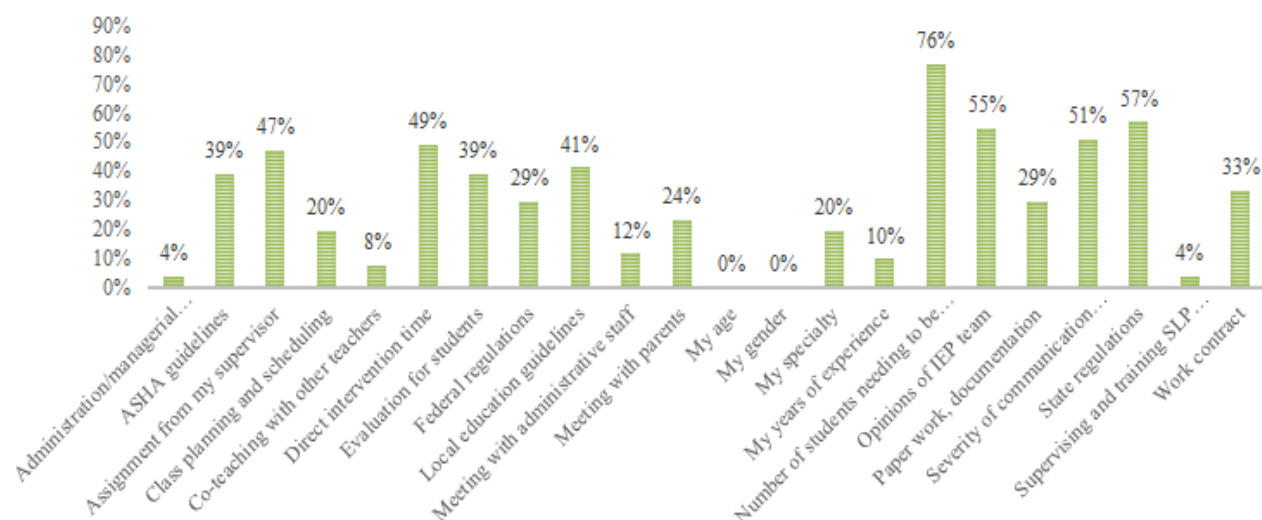


In response to the composition of caseload with different levels of impairments, SLPs reported that the average percentage of students with mild, moderate, and severe impairments in typical caseloads was 32%, 34%, and 20%, respectively.

Most of the respondents (86%) reported that no students on their caseload required bilingual speech-language services. Approximately 14% of the respondents reported that an average of 8% of the students in their caseloads required bilingual services. Only 5% of the respondents reported that an average of 3% of their total caseloads required interpreters.

Participants were asked what factors were taken into account for their caseload size determination. These responses are charted in Figure 4. Expectedly, most (76%) of the respondents indicated that the amount of students requiring speech-language services had an impact on their caseloads. State regulations, opinions of the IEP team, severity of impairment level, direct intervention time, and special assignments from supervisors are indicated as important factors as well.

**FIGURE 4. Percentage of responses on factors that impact caseload determination.**



In response to the question “What model do you use to deliver therapy to students?”, SLPs reported that a collective average of 22% of caseloads received individual therapy by traditional pull out-model. Approximately 55% of an SLP’s caseload received group therapy by a traditional pull out-model. The percentage of caseloads receiving individual and group intervention in an integrated classroom-based setting was 4% and 3%, respectively. Only 2% of the students on a typical caseload received therapy by collaborative service delivery; no therapy was delivered by indirect therapy (intensive parent training only). Approximately 4% of the therapies were delivered by Response to Intervention (RTI), which is a multi-tier approach to the early identification and support of students with learning and behavior needs.

### ***Workload Related Issues***

Caseload typically refers to the number of students served, whereas workload refers to all activities required to be performed by SLPs. Workload includes direct therapy services as well as activities necessary to support students’ needs/education to ensure best practices and better outcome. Thus, workload should not be treated as the same as caseload because different students can bring significantly different amount of workload to a SLP.

It was of interest in this study to find out what are the main workload activities of SLPs in MO. The survey results showed that the major workload related activities included direct intervention for individual and group pull-out services. Additional workload-related activities included student evaluations, paperwork, class planning and scheduling, co-teaching, meeting

with parents, and meeting with administrative staff. Only 6% of the SLPs reported spending an average of one hour each week on training SLP assistants and aides. Approximately 81% of the SLPs had neither administrative nor managerial responsibilities. The remaining respondents (19%) spent an average of 2.5 hours each week on administrative responsibilities.

The majority of the SLPs (77%) reported there was no recommended service delivery model in their district; however, 67% of the respondents thought a service delivery model would be beneficial. Only 57% of the respondents answered the open ended question “What kind of service delivery model would be most helpful for you in providing therapy?” Approximately 26% noted that a 4:1 model would be beneficial. With 4:1 model, four days of a work week are used for direct service, and one day is used for meetings, paperwork, scheduling, reports writing, etc. The remaining 2% respondents recommended a 3:1 model. With 3:1 model, a child will be seen 3 weeks in a row and then for 1 week, his/her teachers and SLP will collaborate to discuss each child’s progress and future goals and action plan. Approximately 2% of the SLPs reported that their districts were already using the 3:1 model. The remaining respondents did not specify a model. They did, however, indicate that a flexible model would be beneficial with regard to scheduling, paperwork, and meeting, testing, and arranging missed therapies. Only 5.9% of the SLPs reported that they did not have to work before or after school (zero hours per week). The distribution of time spent on working either before or after school is listed in Table 3.

**TABLE 3. Statistics of SLPs working either before or after school.**

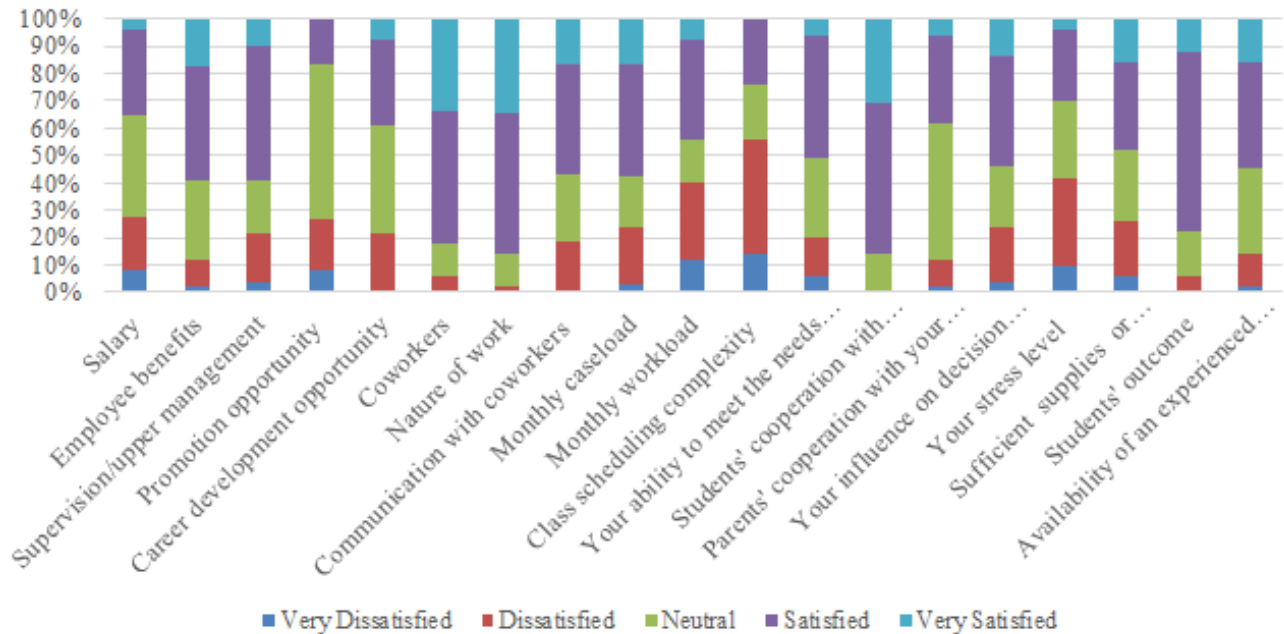
| SLPs worked before or after school | Percentage of responses from SLPs |
|------------------------------------|-----------------------------------|
| 0 hours per week                   | 5.9%                              |
| 1 -5 hours per week                | 51.0%                             |
| 6-10 hours per week                | 35.3%                             |
| More than 10 hours per week        | 7.8%                              |

### SLP Job Satisfaction

The SLPs' job satisfaction rating as applied to different aspects of the SLP profession is illustrated in Figure 5. The most prominent satisfaction factors included nature of work, coworkers, students' cooperation with

therapy, and student outcomes. The factors contributing to job dissatisfaction reported most frequently included: class scheduling complexity, monthly workload, monthly caseload, and stress level.

**FIGURE 5. Job satisfaction rating.**



Finally, a series of statements were provided for a five-point Likert scale rating (See Table 4). The statements were used to test the internal consistency of the survey responses. The Cronbach's Alpha was calculated for five statements on the same concept of "There is a severe shortage of qualified SLP personnel in my school district(s)." The Cronbach's Alpha (See Table 5) was 0.809, indicating the survey

responses are very reliable. (In social science, Cronbach's Alpha equal to or greater than 0.7 is considered to be good (Tavakol & Dennick, 2011). The mean responses to the question indicate that the SLPs disagree with the statement "There is a severe shortage of qualified SLP personnel in my school district(s)."

**TABLE 4. Five statements used for internal reliability testing.**

|   |   |
|---|---|
| 1 | There is a severe shortage of qualified SLP personnel in my school district(s).   |
| 2 | My school district(s) need(s) additional qualified SLP personnel very much.   |
| 3 | My school district(s) can provide the needed services for every students with disabilities that need service from SLPs. |
| 4 | My school district(s) failed to meet the needs of some students with disabilities who needed service from SLPs.         |
| 5 | My school district(s) often use(s) temporary credentialed SLP personnel as staff.                                       |

**TABLE 5. Cronbach's alpha - reliability statistics.**

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | Number of Items |
|------------------|--|-----------------|
| 0.809            | 0.808  | 5               |

## Discussion and Implications

The caseload, workload, and job satisfaction-related issues are summarized and discussed in the following sections.

### *Caseload and Its Management*

School districts in Missouri assign caseloads according to factors such as ASHA guidelines, state regulations, impairment severity, directing intervention time, and meeting time. The greatest factor, however, was the number of students needing to be served. Students are often gathered into larger groups when SLPs have high caseloads. Unfortunately, larger groups may threaten the quality of therapy. Komes (2000) suggested that caseload based on severity rather than number of students could be managed with increased effectiveness and efficiency. Missouri currently has a caseload formula (MDESE, N.A.) This formula, however, cannot reflect an SLP's expanded responsibilities. Moreover, the formula is not based on the students' needs (e.g., type of disability and severity of impairments.) Speech-language pathologists could unite to advocate for state-level initiatives that would support the regulatory change of caseload rules. Union negotiations can be utilized to manage caseloads (Bellini, 2000). School SLPs who are also union members can use their membership to encourage the union to advocate for change. Bellini (2000) reported a successful case in Rhode Island in which SLPs worked with tenacity to propose and negotiate a final caseload cap of 40. Documented service information, the cost analysis of large caseloads, and therapy effectiveness evaluations can also be used to communicate with school committees, officials, and special education directors to advocate for change. Alternative service delivery models can be used to magnify the service effectiveness. Innovative approaches include working with students in

their natural classroom environment, training kindergarten teachers to deliver phonological awareness activities to students, and incorporating a workload approach in planning, testing, and delivering services (Bellini, 2007). Speech-language assistant models can help SLPs provide quality programs to students. A 3-year study in Broward County, Florida demonstrated "the use of SLP assistants (SLPAs) increased dismissal rates, allowed for better caseload management and improved the students/SLP ratio". (Keane & Rogers, 2009) Kelly (2014) confirmed that a partnership between SLPAs and SLPs could help balance limited resources with increasing service delivery demands.

### *Shift from Caseload to Workload*

In this study, 92% of the respondents reported needing to work either before or after school during a typical week to finish caseload-related work. It is possible that these additional hours increase job stress that can lead to burnout. No work has been published establishing a scientific workload analysis approach for SLP caseload determination in Missouri. One possible approach is to use selected school districts as testing sites for changing from caseload to workload to improve school-based speech-language therapy service. Beasley (2007) reported the continuous effort of several pilot school districts in Kansas that have been collaborating since 2002 to implement a workload model. Progress had been made on making the shift from caseload to workload, and SLPs had opportunities to individualize services to students. A caseload ratio study in Ohio recommended a workload analysis approach and specific strategies to help produce "more reasonable caseload ratios for service providers". While the recommendations in the Ohio study showed promise, the study suffered from methodological limitations that prevented the researchers from drawing firm conclusions

or being able to recommend any specific strategy. (Carlin et al, 2013)

### **Job Satisfaction**

Survey respondents reported that overall, they were satisfied with their jobs. Several aspects, such as class scheduling complexity, monthly workload, stress level, and monthly caseload could, however, be improved to increase job satisfaction. These findings confirm and complement the results of the job stress and satisfaction study conducted by Caesar & Nelson (2008) as well as the study by Blood et al, (2002) in which caseload size was found to have a significant correlation with job satisfaction. Kalkhoff (2012) found that SLPs in medical settings had higher job satisfaction scores than did SLPs in schools. The job satisfaction of SLPs in different work settings (in Missouri) could be investigated in future studies.

### **Conclusion**

Overall, only a relatively small fraction (20%) of the SLPs surveyed experienced heavier caseloads than MDESE regulation. School SLPs in Missouri were not well informed on maximum caseload regulation in their school district. The workload approach is neither well-defined nor widely used in Missouri. Survey responses indicated that the respondent school SLPs were, in general, satisfied with their jobs. SLPs reported that their satisfaction with their job was most closely related to the nature of their work, their coworkers, student cooperation with therapy, and student outcomes. School SLPs were less satisfied with class scheduling complexity, monthly caseload, monthly workload and stress level.

### **Limitations**

Although this survey was relatively comprehensive, the response rate was low. Future research should investigate SLP workload-related issues to establish a reasonable formula for SLPs' caseloads, class scheduling, and other constraining factors. Further surveys are needed. workload-related issues to establish a reasonable formula for SLPs' caseloads, class scheduling, and other constraining factors. Further surveys are needed. Focus-group

interviews could be helpful to pilot test survey questions, solicit constructive suggestions to improve survey design, and obtain a higher response rate.

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### **References**

- Armstrong, E., White, G., Moorer-Cook, L., & Gill, C. (2012). Workload Status of School-Based Speech-Language Pathologists in Texas. *SIG 16 Perspectives on School-Based Issues*, 13(4), 136-149. doi: 10.1044/sbi13.4.136
- ASHA. (2002). A Workload Analysis Approach for Establishing Speech-Language Caseload Standards in the Schools: Technical Report. *ASHA 2002 Desk Reference Speech-Language Pathology*, 3, 203-224.
- Beasley, M. J. (2007). Making the Shift From Caseload to Workload: Kansas Revisited. *SIG 16 Perspectives on School-Based Issues*, 8(2), 6-8. doi: 10.1044/sbi8.2.6
- Bellini, P. I. (2000). Sometimes One Voice Does Make A Difference: Utilizing Union Negotiations To Manage Caseload. *SIG 16 Perspectives on School-Based Issues*, 1(1), 2-4. doi: 10.1044/sbi1.1.2
- Bellini, P. I. (2007). Drawing Outside the Lines: Innovative Solutions to Caseload Issues. *SIG 16 Perspectives on School-Based Issues*, 8(2), 9-11. doi: 10.1044/sbi8.2.9
- Block, K., & Frances. (2000). Caseload Management Strategies. *SIG 16 Perspectives on School-Based Issues*, 1(1), 14-15. doi: 10.1044/sbi1.1.14
- Blood, Ridenour, J. S., Thomas, E. A., Qualls, C. D., & Hammer, C. S. (2002). Predicting Job Satisfaction Among Speech-Language Pathologists Working in Public Schools. *Language, Speech, and Hearing Services in Schools*, 33(4),



- 282-290. doi: 10.1044/0161-1461(2002/023)
- Brook, G. (2008). Survey Report: Caseload Characteristics Trends 1995–2008. *American Speech-Language-Hearing Association-School Surveys*.
- Caesar, L. G., & Nelson, N. W. (2008). Perceptions of Job Stress and Satisfaction Among School-Based SLPs: Challenges Versus Rewards. *SIG 16 Perspectives on School-Based Issues*, 9(4), 126-134. doi: 10.1044/sbi9.4.126
- Carlin, C.H, Watt, L., Fallow, W., Carlin, E.L., & Vakil, S. (2013). Caseload Ratio Study: Final Report to the Ohio Department of Education.
- Dowden, P., Volland, T., Cumley, G. D., & Kuehn, C. M. (2006). Survey of SLP Caseloads in Washington State Schools: Implications and Strategies for Action. *Language, Speech, and Hearing Services in Schools*, 37(2), 104-117. doi: 10.1044/0161-1461(2006/013)
- Estomin, E. (2003). Implementing a Speech-Language Workload Approach in School-Based Settings: Why the Caseload Approach Isn't Working. *SIG 16 Perspectives on School-Based Issues*, 4(2), 30-32. doi: 10.1044/sbi4.2.30
- Kalkhoff, N. L., & Collins, D. R. (2012). Speech-Language Pathologist Job Satisfaction in School Versus Medical Settings. *Language, Speech, and Hearing Services in Schools*, 43(2), 164-175. doi: 10.1044/0161-1461(2011/11-0007)
- Keane, L., & Rogers, L. (2009). Using What You Have: Training Teacher Assistants as Speech-Language Assistants. *SIG 16 Perspectives on School-Based Issues*, 10(1), 19-22. doi: 10.1044/sbi10.1.19
- Kelly. (2014). Unleashing Your SUPERvision powers. *SIG 16 Perspectives on School-Based Issues*, 15(3), 107-114. doi: 10.1044/sbi15.3.107
- Komes, L. W. (2000). Lower the Caseload! One State's Journey. *SIG 16 Perspectives on School-Based Issues*, 1(1), 5-6. doi: 10.1044/sbi1.1.5
- MDESE. (N.A.). Desirable Caseload Guidance. *Missouri Department of Elementary and Secondary Education*
- ODE. (2012). Ohio's Caseload Ratio Study 2010 - 2013. *Ohio Department of Education*.
- Pezzei, C., & Oratio, A. R. (1991). A Multivariate Analysis of the Job Satisfaction of Public School Speech-Language Pathologists. *Language, Speech, and Hearing Services in Schools*, 22(3), 139-146. doi: 10.1044/0161-1461.2203.139
- Russ, S., Chiang, B., Rylance, B. J., & Bongers, J. (2001). Caseload in special education: An integration of research findings. *Exceptional Children*, 67(2), 161-172.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53-55. doi: 10.5116/ijme.4dfb.8dfd
- Whitmire, K. (2004). Workload/Caseload: An Update on ASHA Activities. *SIG 16 Perspectives on School-Based Issues*, 5(1), 23-24. doi: 10.1044/sbi5.1.23
- Wisniewski, R. M. G., (1997). Occupational stress and burnout among special educators: A review of the literature. *The Journal of Special Education*, 31(3), 325-346.

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## Appendix

### SLP Caseload Study in Missouri - Survey of 2015

QA0 Are you a Speech-language Pathologist (SLP) working for a school or school district?

- ☐ Yes (9)
- ☐ No (10)

If No Is Selected, Then Skip To End of Survey

QA1 What is your gender?

- ☐ Male (1)
- ☐ Female (2)

QA2 Which age group do you belong to as of 2015?

- ☐ 20 - 29 (1)
- ☐ 30 - 39 (2)
- ☐ 40 - 49 (3)
- ☐ 50 - 59 (4)
- 60 and above (5)

QA3 What is your current primary employment setting(s)? Please select all that apply.

- ☐ Birth to Three (1)
- ☐ Early Childhood (3-5) (2)
- ☐ Elementary school (3)
- ☐ Middle school (4)
- ☐ High school (5)

Other, please specify. (Please type your answer in the following box) (6) \_\_\_\_\_

QA4 How many years of experience do you have working in schools as a SLP? Please specify the years in Arabic numbers.

QA5 Are you an ASHA certified SLP?

- ☐ Yes (1)
- ☐ No (2)

QA6 What is the highest academic degree you currently hold?

- ☐ Bachelor's degree (1)
- ☐ Master's degree (2)
- ☐ PhD (3)
- ☐ Other, please specify. (4) \_\_\_\_\_

QA7 What is your FTE (full-time equivalent) as a school SLP? (1.0 FTE = 40 hours of work each week)

- ☐ 1.00 (1)
- ☐ 0.75 (2)
- ☐ 0.50 (3)
- ☐ 0.25 (4)
- ☐ Other. Please specify. (5) \_\_\_\_\_

QB1 What is the average number of students for whom you provide services each month, i.e. monthly caseload number?

QB2 What is the regulated maximum caseload number in your school district?

QB3 What is your specialty as a school SL

QB4 How does your specialty influence your caseload? My specialty tends to

|   | greatly<br>increase (1) | slightly<br>increase (2) | have no<br>influence on<br>(3) | slightly<br>decrease (4) | greatly<br>decrease (5) |
|---|-------------------------|--------------------------|--------------------------------|--------------------------|-------------------------|
| my overall<br>caseload. (1)   | <input type="radio"/>   | <input type="radio"/>    | <input type="radio"/>          | <input type="radio"/>    | <input type="radio"/>   |
| my overall<br>workload. (2)   | <input type="radio"/>   | <input type="radio"/>    | <input type="radio"/>          | <input type="radio"/>    | <input type="radio"/>   |
| my caseload of<br>students with<br>disabilities/needs<br>in my specialty. (3) | <input type="radio"/>   | <input type="radio"/>    | <input type="radio"/>          | <input type="radio"/>    | <input type="radio"/>   |
| my workload of<br>students with<br>disabilities/needs<br>in my specialty. (4) | <input type="radio"/>   | <input type="radio"/>    | <input type="radio"/>          | <input type="radio"/>    | <input type="radio"/>   |

QB5 What are the percentages of students with mild, moderate and severe-to-profound impairment on your typical caseload? Please specify the number in percentages.

\_\_\_\_\_ Mild (1)

\_\_\_\_\_ Moderate (2)

\_\_\_\_\_ Severe-to-profound (3)

QB6 What percentage of students on your caseload require bilingual speech-language services?

QB7 What percentage of your caseload includes clients who require interpreters?

QB8 My caseload take the following factors into account: (select all that apply)

- ☐ Work contract (1)
- ☐ ASHA guidelines (2)
- ☐ Federal regulations (3)
- ☐ State regulations (4)
- ☐ Local education guidelines (5)
- ☐ Opinions of IEP team (6)
- ☐ My specialty (7)

- ☐ My gender (8)
- ☐ My age (9)
- ☐ My years of experience (10)
- ☐ Assignment from my supervisor (11)
- ☐ Number of students needing to be served (12)
- ☐ Severity of communication impairments (13)
- ☐ Direct intervention time (14)
- ☐ Evaluation for students (15)
- ☐ Co-teaching with other teachers (16)
- ☐ Paper work, documentation (17)
- ☐ Class planning and scheduling (18)
- ☐ Meeting with parents (19)
- ☐ Meeting with administrative staff (20)
- ☐ Supervising and training SLP assistants and aids (21)
- ☐ Administration/managerial responsibility (22)
- ☐ Other. Please specify. (23) \_\_\_\_\_

QB9 Which model(s) do you use for service-delivery to your students in your school? Please provide the estimated percentage of time spent on each service in a typical week. Please put in zero if a particular service type does not apply to your case.

- \_\_\_\_\_ Traditional pull-out model for individual therapy (1)
- \_\_\_\_\_ Traditional pull-out model for group therapy (2)
- \_\_\_\_\_ Classroom-based (integrated) individual intervention (3)
- \_\_\_\_\_ Classroom-based (integrated) group intervention (4)
- \_\_\_\_\_ Collaborative service delivery (with classroom teachers, special education teachers, and other graduate student externs) (5)
- \_\_\_\_\_ Indirect therapy (intensive parent training only) (6)
- \_\_\_\_\_ Response to intervention (7)
- \_\_\_\_\_ Other. Please specify. (8)

QB10 How many clients do you typically serve with a diagnosis in the following areas? Please specify the number of clients on your typical caseload.

- \_\_\_\_\_ Total number of children on your caseload in a typical month (1)
- \_\_\_\_\_ Number of clients on your caseload with articulation/phonology impairment (2)
- \_\_\_\_\_ Number of clients on your caseload with autism and related disorders (3)
- \_\_\_\_\_ Number of clients on your caseload with apraxia of speech (4)
- \_\_\_\_\_ Number of clients on your caseload with cognitive impairments (5)
- \_\_\_\_\_ Number of clients on your caseload with dysphagia (6)
- \_\_\_\_\_ Number of clients on your caseload with fluency disorders (7)
- \_\_\_\_\_ Number of clients on your caseload with hearing disorders (8)
- \_\_\_\_\_ Number of clients on your caseload with language disorders (9)
- \_\_\_\_\_ Number of clients on your caseload with literacy issues (10)
- \_\_\_\_\_ Number of clients on your caseload with complex communication needs (e.g., Augmentative and Alternative Communication) (11)
- \_\_\_\_\_ Number of clients on your caseload with traumatic brain injury (12)
- \_\_\_\_\_ Number of clients on your caseload with voice/resonance disorders (13)
- \_\_\_\_\_ Other areas. Please specify the areas in the following text box. (14)

QC1 Please provide the hours you spend on each of the following activities each week (Please type in the number of hours in the text box):

- ☐ Direct intervention for individual pull out service (1) \_\_\_\_\_
- ☐ Direct intervention for group service (2) \_\_\_\_\_
- ☐ Co-teaching (3) \_\_\_\_\_
- ☐ Student evaluation (4) \_\_\_\_\_
- ☐ Paper work, documentation (5) \_\_\_\_\_
- ☐ Class planning and scheduling (6) \_\_\_\_\_
- ☐ Meeting with parents (7) \_\_\_\_\_
- ☐ Meeting with administrative staff (8) \_\_\_\_\_
- ☐ Supervising and training SLP assistants and aids (9) \_\_\_\_\_
- ☐ Administration/managerial responsibility (10) \_\_\_\_\_
- Other, please specify the job activities and hours spent. (11) \_\_\_\_\_

QC2 I work before or after school

- ☐ 0 hours per week (1)
- ☐ 1 - 5 hours per week (2)
- ☐ 6 - 10 hours per week (3)
- ☐ More than 10 hours per week (4)

QC3 Does your district recommend or require a service delivery model? For example, 4:1 model, in which four days of a week are used for direct service, and one day is used for meetings, paperwork, scheduling, reports writing, etc.?

- ☐ Yes (1)
- ☐ No (2)

QC4 If your district does not have a specific service delivery model, do you think having one would be beneficial?

- ☐ Yes (1)
- ☐ No (2)

QC5 What kind of service delivery model do you think would be most helpful for you in providing therapy?

QC6 Job satisfaction rating. How satisfied are you with the following aspects of your job? Please select the scale points that best describe your opinion.

|   | Very<br>Dissatisfied (1) | Dissatisfied (2)      | Neutral (3)           | Satisfied (4)         | Very<br>Satisfied (5) |
|---|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Salary (1)  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Employee<br>benefits (2)  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Supervision/upper<br>management (3)                                     | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Promotion<br>opportunity (4)  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Career<br>development<br>opportunity (5)                                | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Coworkers (6)   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Nature of work (7)  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Communication<br>with coworkers<br>(8)                                  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Monthly caseload<br>(9)   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Monthly workload<br>(10)  | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Class scheduling<br>complexity (11)                                     | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Your ability to<br>meet the needs of<br>students (12)                   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Students'<br>cooperation with<br>your therapy (13)                      | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Parents'<br>cooperation with<br>your therapy for<br>their children (14) | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Your influence on<br>decision making<br>that guide your<br>work (15)    | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Your stress level<br>(16)   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Sufficient<br>supplies or<br>resources to do<br>your job (17)           | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Students'<br>outcome (18)   | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Availability of an<br>experienced                                       | <input type="radio"/>    | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

|                                    |  |  |  |  |  |
|------------------------------------|--|--|--|--|--|
| mentor in working environment (19) |  |  |  |  |  |
|------------------------------------|--|--|--|--|--|

QC7 Please rate your level of agreement or disagreement with the following statements:

|   | Strongly disagree (1) | Disagree (2)          | Neither Agree nor Disagree (3) | Agree (4)             | Strongly Agree (5)    |
|---|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|
| There is a severe shortage of qualified SLP personnel in my school district(s). (1)   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> |
| My school district(s) need(s) additional qualified SLP personnel very much. (2)   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> |
| My school district(s) can provide the needed services for every students with disabilities that need service from SLPs. (3) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> |
| My school district(s) failed to meet the needs of some students with disabilities who needed service from SLPs. (4)         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> |
| My school district(s) often use(s) temporary credentialed SLP personnel as staff. (5)                                       | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> |
| My school district(s) lack(s) funds to hire qualified SLPs. (6)   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> |
| Use of SLP assistants or  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>          | <input type="radio"/> | <input type="radio"/> |



|   |                       |                       |                       |                       |                       |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| aids makes my caseload much more manageable. (7)  |                       |                       |                       |                       |                       |
| Use of SLP assistants or aids needs too much time for supervision and does not make caseload management easier. (8) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

End 1 Thank you very much for taking the survey! Your input is greatly appreciated.

## **Call for Papers: The Online Journal of Missouri Speech-Language-Hearing Association**

### **Guidelines for Submissions to *Online Journal of Missouri Speech-Language-Hearing Association***

The *Online Journal of Missouri Speech-Language-Hearing Association* (OJMSHA) is MSHA's peer-reviewed journal, which is published annually. OJMSHA is not only available to MSHA members but is also accessible to readers out of state. Manuscripts from clinicians, students, and academicians are accepted on a rolling basis.

### **Manuscript submission**

OJMSHA is an online journal that publishes papers pertaining to the processes and disorders of speech, language, and hearing, and to the diagnosis and treatment of such disorders, as well as articles on educational and professional issues in the discipline. Contributed manuscripts may take any of the following forms: reports of original research, including single-subject experiments; theoretical or review articles; tutorials; research notes; and letters to the editor. OJMSHA follows the policies and procedures of any typical scholarly publishing board. Articles submitted to OJMSHA are reviewed by professionals in communication science and disorders and, when appropriate, professionals from allied health fields are also invited to review the papers.

Manuscripts should be submitted to OJMSHA Coordinator, Jayanti Ray, at jray@semo.edu. Specific questions or concerns may also be directed to jray@semo.edu. Manuscripts are reviewed by at least two peer reviewers on the editorial board and final decisions are made jointly by the coordinator and peer reviewers. Submissions are reviewed and edited for content and clarity prior to publishing. The peer reviewers, based on their expertise, have the discretion to reject any submissions as necessary.

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The peer reviewers are expected to review the submitted paper and make specific recommendations to the author within 45 days from the initial date of submission of the manuscript. It is the author's responsibility to edit the paper for APA style (6<sup>th</sup> Edition), clarity, and consistency before submitting. After the paper is accepted, the authors are sent the article electronically for final proofreading. Only minimal alterations are permissible pertaining to the final draft.

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All manuscripts should be accompanied by a cover letter requesting that the manuscript be considered for publication and stating that the manuscript has not been published previously and is not currently submitted elsewhere. The contact author's business address and phone number should be included. The names of any student authors who contributed to the article should also be included in the cover letter.

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Copies of tables and figures should be attached to each copy of the manuscript. Use Arabic numerals for both tables and figures, and do not use suffix letters for complex tables; instead, simplify complex tables by making two or more separate tables. MS Office tools may be used for figures and tables. Table titles and figure captions should be concise but explanatory. The reader should not have to refer to the text to decipher the information. The pictures (color or black/white) should be submitted using the jpeg format (resolution: 300x800 dpi). Keep in mind the width of a column or page when designing tables and figures.

Figures/charts and tables created in MS Word should be included in the main text rather than at the end of the document.

Pictures may be submitted using separate files.

## **References**

All literature, as well as test and assessment tools, must be listed in this section. References should be listed alphabetically, then chronologically under each author. Journal names should be spelled out and italicized. Pay particular attention to accuracy and APA style for references cited in the text and listed in the References. The reference page may be single-spaced.

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