Promoting Cross-Disciplinary Collaboration at the Preprofessional Level: The Reading Specialist in the Speech-Language Clinic

Laura M. Justice
Terri Purcell
University of Virginia, Charlottesville

ABSTRACT: Speech-language pathologists are increasingly involved in preventing, identifying, and ameliorating literacy-based difficulties continues to build across a variety of professions. Reading specialists—both practitioners and researchers—have long been at the forefront of such endeavors. More recently, speech-language pathologists have formally come on board with the release of a position statement by the American Speech-Language-Hearing Association (ASHA, 2001), titled “Roles and Responsibilities of Speech-Language Pathologists with Respect to Reading and Writing in Children and Adolescents.” The impetus for ASHA’s formal assertion for increased involvement of speech-language pathologists in literacy resides in enhanced understanding of the at-risk status of children with communicative impairments with regard to literacy outcomes. That is, children with communicative impairments, as a group, frequently show difficulty with literacy achievement at both emergent and more conventional levels of attainment (Bishop & Adams, 1990; Boudreau & Hedberg, 1999).

Speech-language pathologists are thus taking an increasingly proactive role toward preventing, identifying, and remediating literacy problems in preschool and school-age children with communicative impairments. Their efforts, driven by the empirical research base on best practices in literacy prevention and intervention, are generally directed toward (a) determining which children with communicative impairments are most susceptible to problems with literacy achievement, (b) developing valid and reliable instruments for assessing literacy skills in this group of children, and (c) determining the extent to which conventional strategies of literacy prevention and intervention are efficacious for children exhibiting disorders of communication.

To date, there has been little dialogue between speech-language pathologists and reading specialists concerning the individual and collaborative roles that both types of professionals can play in regard to preventing, identifying, and ameliorating literacy problems in children with communicative impairments. Such dialogue is necessary to ensure that children with communicative impairments reach their full potential with respect to literacy.
One proactive approach toward promoting dialogue between professions is to target cross-disciplinary awareness and training at the preprofessional level for students-in-training. This approach was recently taken in a pilot summer program at the speech-language-hearing center of the University of Virginia, in which graduate student speech-language pathology interns worked intensively with a reading specialist during a 6-week summer intervention program attended by 12 young children with communicative impairments. The goal for this summer program was to simultaneously promote speech, language, and literacy in these youngsters within the context of cross-disciplinary collaboration by six preprofessional speech-language pathologists and one reading specialist.

In this article, we use these recent clinical experiences as a basis for describing:

- the rationale for incorporating a collaborative cross-disciplinary model of speech-language intervention,
- the population of children who appear to be best served through this model,
- the roles and responsibilities of the participating professionals, and
- the potential outcomes of such a collaborative model.

The information contained herein may be used by educators and administrators to promote cross-disciplinary engagement of reading specialists and speech-language pathologists for the express purpose of promoting literacy achievement in children with communicative impairments.

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**SPEECH-LANGUAGE PATHOLOGISTS AND READING SPECIALISTS WORKING TOGETHER: A RATIONALE**

Children with communicative impairments, by the nature of their disorder, are at increased risk for difficulties with literacy achievement. That is, there is a robust and reciprocal relationship between oral language and literacy skills (e.g., Chaney, 1992; Dickinson & Snow, 1987; Scarborough, 1998). Thus, children experiencing difficulties with oral language development are at increased risk for having problems with literacy achievement as well. In the preschool period, for instance, children exhibiting problems with language acquisition concomitantly show significant deficits in key areas of emergent literacy skill, including phonological awareness and print awareness (Boudreau & Hedberg, 1999). The extant literature suggests that a number of these children will go on to experience considerable and pervasive difficulties with literacy outcomes and, more generally, educational achievement (Bird, Bishop, & Freeman, 1995; Scarborough, 1990).

Past and present models of communication intervention often have little explicit impact on literacy achievement for children with speech-language impairments (Fey, Catts, & Larivee, 1995). Despite having participated in preschool speech-language intervention programs, a large number of children with speech-language impairments subsequently experience later and pronounced difficulties with reading (Aram, Ekelman, & Nation, 1984). The same holds true for speech-language intervention for older children: Therapy targeting speech and language skills (e.g., semantics, syntax) in school-age children exerts little influence on critical literacy skills (e.g., phonological awareness) (Gillon & Dodd, 1995). Because of the apparently limited influence of speech and language intervention on literacy outcomes (immediate and more long-term), speech-language pathologists have been encouraged to broaden the focus of intervention to include a more systematic and comprehensive focus on literacy enhancement (Fey et al., 1995). This increased focus would presumably provide students with the additional support they need to solidly establish critical literacy skills and to be better prepared for literacy-based academic rigor.

In large part, speech-language pathologists are in an ideal position to target literacy goals in the context of communicative intervention. Important literacy skills can be implicitly and explicitly framed within the broader objective of optimizing communicative performance. For instance, students can be helped to develop a conscious awareness of the individual components of words (i.e., phonemic awareness) within the context of activities targeting the production of specific sounds. Specific activities might include categorizing words based on similar beginning or ending sounds, deleting sounds from words to make other words, and blending sounds together to produce words.

Nevertheless, despite their good intentions, many speech-language pathologists may have little formal training and experience regarding best practices in preventing and ameliorating literacy difficulties for at-risk children. For this reason, it is crucial that speech-language pathologists seek out and work collaboratively with reading specialists, who have advanced knowledge and training in best practice for literacy enhancement. Together, speech-language pathologists and reading specialists can share knowledge regarding the nature of linguistic difficulties in children with communicative impairments and can collaborate in prevention and intervention activities designed to optimize literacy achievement in this population.

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**POPULATION BEST SERVED THROUGH CROSS-DISCIPLINARY COLLABORATION**

Children exhibiting communicative impairments are an extremely heterogeneous group, and not all children with communicative impairments are at risk for experiencing problems with literacy. Children appearing to be particularly at risk are those whose communicative problems are linguistic in nature, that is, who are having difficulty acquiring or using the rule systems governing semantics, syntax, and phonology (Bird et al., 1995; Bishop & Adams, 1990).

Importantly, many children exhibit problems transcending two or more of these three important domains of language—a circumstance resulting from the robust interrelationships among these domains. Children with more widespread difficulties are at greater risk for literacy
problems than are children whose difficulties are limited to only one domain (e.g., phonology). Moreover, as might be expected, there appears to be a reciprocal relationship between level of language impairment and risk for reading failure, such that children with more pronounced and widespread deficits have a greater likelihood of experiencing problems with literacy achievement. Presence of additional risk factors, including residing in poverty and/or having a parent with a history of reading difficulty, also can contribute to literacy-risk status (see Justice, Invernizzi, & Meier, 2002). Although the likelihood of experiencing literacy problems is mediated by the nature and degree of impairment and the presence of additional risk factors, all children who exhibit communicative problems appearing to be linguistic in nature would be best served through a cross-disciplinary model of literacy prevention and intervention conducted by speech-language pathologists in collaboration with reading specialists (ASHA, 2001).

### ROLES AND RESPONSIBILITIES OF PROFESSIONALS

Speech-language pathologists and reading specialists each have unique and highly specialized skills for preventing and ameliorating literacy problems in children with communicative impairments. The roles and responsibilities delineated in the following sections were derived from our recent experiences experimenting with a collaborative cross-disciplinary model of intervention for a small cohort of children with communicative impairments. As previously noted, this experience took place in an intensive 6-week summer program at the university’s speech-language-hearing center, where six preprofessional speech-language pathologists delivered an “enhanced” model of intervention to 12 children ranging in age from 4 to 6 years. Intervention was enhanced by incorporating explicit and implicit literacy goals into clinical activities. Literacy goals were established and addressed through the close guidance of an advanced reading specialist. The children in this program, most of whom displayed communicative impairments that were linguistic in nature (e.g., specific language impairment), represented a heterogeneous group with a diverse range of literacy needs. To illustrate, the Appendix provides an overview of the speech, language, and literacy characteristics of 1 child served in this program.

#### Roles and Responsibilities of the Speech-Language Pathologist

The primary responsibility of the speech-language pathologist interns was to design an intervention program for each child that effectively and efficiently promoted positive, functional communicative outcomes within the treatment period (in this case, a 6-week period in which each child received 12 hours of one-on-one intervention and 6 hours of small-group intervention). Each intern had this responsibility for 2 children. To this end, specific roles and responsibilities included the following:

- Conduct a speech-language assessment. Each child’s speech and language skills were comprehensively assessed. This included both standardized and criterion-referenced assessment of expressive and receptive abilities across all linguistic domains. Assessment also included identifying possible contributory risk factors, including home language environment, family demographics (e.g., socioeconomic status), and medical and socioemotional history.

- Identify intervention targets. A series of short- and long-term communicative goals were identified for each child. Goals were required to be developmentally appropriate, functional, educationally relevant, and consistent with the child’s communication needs and strengths. Measures or techniques for monitoring progress toward and achievement of goals also were identified.

- Implement intervention strategies. An additional role and responsibility of the intern was to identify and implement the most promising research-driven strategies for effectively and efficiently meeting the short- and long-term communicative goals for each child identified through assessment. Strategies were identified through careful consideration of child profile, including learning style, behavior, motivation, and other mediating psychosocial or cultural influences. A unique but particularly important role/responsibility was to implement and integrate intervention strategies for targeting literacy goals. These strategies and goals were identified through consultation with the reading specialist.

#### Roles and Responsibilities of the Reading Specialist

The primary responsibility of the reading specialist was to identify ways in which literacy goals could be integrated efficiently and effectively into the context of one-on-one and small-group intervention sessions, and to train the speech-language pathologists in the delivery of such. The latter responsibility was necessary in our program because of the ratio of professionals: 6 speech-language pathologists to 1 reading specialist (12 children were served). Our service delivery model is depicted in Figure 1. Reading specialist responsibilities included the following:

- Identify literacy goals. The reading specialist conducted an individualized assessment of each child’s early literacy skills that included a comprehensive criterion-referenced evaluation of discrete abilities, such as phonological awareness, written language awareness (e.g., print awareness, concept of word), alphabet knowledge, and decoding skills (if appropriate). The reading specialist also informally observed each child’s engagement during adult–child (one-on-one) literacy interactions and small-group activities. Subsequently, the reading specialist identified literacy goals for each child based on assessment findings, as well as research-based strategies for promoting
widespread literacy gains in targeted areas. The reading specialist described her recommendations to the speech-language pathologists in weekly information-sharing sessions.

- **Train the speech-language pathologists.** The reading specialist met with the speech-language pathologists in weekly planning sessions to discuss children’s literacy goals and treatment approaches. Specifically, the reading specialist reviewed the speech-language pathologists’ intervention plans and made suggestions for addressing each child’s unique literacy needs. In addition, the reading specialist attended intervention sessions and observed the speech-language pathologists during intervention, modeled specific strategies, provided materials, and made ongoing suggestions for improvement.

### Intervention in a Collaborative Spirit

The roles and responsibilities of the speech-language pathologists and the reading specialist reflected their domain-specific expertise and experience. Speech-language pathologists developed treatment plans and intervention approaches for addressing individual children’s speech and language needs, whereas the reading specialist did the same for identifying children’s literacy needs. Although the actual delivery of intervention was the responsibility of the speech-language pathologists, the reading specialist was always available to promote cross-disciplinary engagement and understanding. The principal strategy for doing so was training of the speech-language pathologists (through consultation, observation, and modeling) in how to optimally integrate literacy into speech-language intervention. In this manner, all professionals shared responsibility for ensuring that speech, language, and literacy were targeted intensively and simultaneously for individual children based on assessment data and intervention strategies configured by the most appropriate professional.

### ANTICIPATED OUTCOMES

Cross-disciplinary collaboration can occur in a variety of ways, with the model mediated by availability of resources (money, time, professionals) and the motivation of the professionals involved. Regardless of model, what is most important is recognizing that collaboration between speech-language pathologists and reading specialists is an important and potentially critical means for ensuring positive literacy outcomes for children with communicative impairments. Both types of professionals have knowledge that is critical to the intervention process.

Unfortunately, barriers to such sharing of knowledge are numerous. One strategy for promoting such collaborative enterprises is to provide preprofessional students with explicit experiences showing the benefits of and ease with which collaboration can occur. Such experiences can increase students’ knowledge of the collaborative process, their respect for related disciplines, their understanding of other professionals’ roles and responsibilities, and their own intellectual curiosity.
If fostered, and optimally at the preprofessional level so that myopic perspectives never have to be unlearned, cross-disciplinary collaboration between reading specialists and speech-language pathologists can have many important and far-reaching benefits to both theory and practice.

- Supportive and openly communicative relationships between reading specialists and speech-language pathologists unite two interrelated and essential bodies of knowledge necessary to support literacy development in at-risk children.
- Increased collaboration promotes effective interventions that include richer demonstrations, interactions, critical thinking, and models of literacy in the course of activities that make sense to children. This can, in turn, promote the likelihood of children achieving optimal literacy outcomes.
- Literacy-enriched communicative interventions increase the likelihood that children will be able to transfer and apply skills learned within the therapy context to other areas of the academic curriculum.

The preprofessional speech-language pathologists who participated in the cross-disciplinary collaborative experience described herein had only positive regard for their experiences. An informal survey conducted to characterize the speech-language pathologist interns’ responses to this experience is provided in Table 1. These informal findings show that those most intimately involved with this model of service delivery perceived substantial benefits not only to themselves, but also to the children involved. Importantly, these findings attest to the need to persevere in opening the doors of communication and shared responsibility of reading specialists and speech-language pathologists so as to promote optimal literacy achievement for at-risk children.

Table 1. Preprofessional speech-language pathologists’ perceptions regarding their cross-disciplinary experiences in the summer intervention program.

<table>
<thead>
<tr>
<th>With respect to the EARLY LITERACY component of the summer program, rate the following on a scale of 1 (not at all) to 5 (very much):</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To what extent did this program increase your knowledge of early literacy development?</td>
<td>4.00</td>
</tr>
<tr>
<td>2. In your opinion, to what extent did this program increase your skills as a clinician?</td>
<td>5.00</td>
</tr>
<tr>
<td>3. In your opinion, to what extent was this program helpful to the children involved?</td>
<td>4.67</td>
</tr>
<tr>
<td>4. To what extent did you find it beneficial working with a reading specialist?</td>
<td>4.67</td>
</tr>
<tr>
<td>5. How likely will you be to include an early literacy focus in your future treatment sessions with young children?</td>
<td>4.67</td>
</tr>
</tbody>
</table>

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REFERENCES


Contact author: Laura Justice, McGuffey Reading Center, University of Virginia, Curry School of Education, Charlottesville VA 22904. E-mail: lmj2t@virginia.edu

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**APPENDIX. CHARACTERISTICS OF CHILD PARTICIPATING IN INTENSIVE SUMMER PROGRAM**

C.C. (male; 4 years, 0 months; Caucasian; attends preschool; previously diagnosed with receptive/expressive language impairment)

**Test Protocol**
- Peabody Picture Vocabulary Test–Revised (PPVT–R; Dunn & Dunn, 1981)
- Preschool Language Scale–3 (PLS–3; Zimmerman, Steiner, & Pond, 1992)
- Goldman-Fristoe Test of Articulation (GFTA; Goldman & Fristoe, 1986)
- Phonological Awareness Literacy Screening–PreKindergarten (PALS–PreK; Invernizzi, 2000)
- Informal criterion-referenced measures (e.g., MLU from language sample)

**Language Intake**

*Semantics:* Standardized testing of vocabulary comprehension (PPVT–R) resulted in a standard score of 88 (within 1 SD of mean), 21st percentile. Informal observations of vocabulary use/ expression suggest difficulties in vocabulary precision, particularly use of nouns as descriptors, locational/spatial concepts (e.g., there, here), and wh-questions.

*Syntax:* Syntactic production (as indicated by tasks on the PLS–3) is significantly less than would be expected as compared to syntactic comprehension. Syntactic production is $1/2$ SD below the mean (standard score of 77 for expression on PLS–3). Comprehension is within 1 SD of the mean (standard score of 90). Syntactic use is characterized by frequent omission of function words (articles, auxiliaries), limited marking of verbs (e.g., inconsistent and infrequent use of future and past tense markings), and inaccurate pronoun markings (e.g., all pronouns are masculine).

*Phonology:* Phonological production appears slightly below age expectations within the context of standardized testing (single-word testing). Standard score on GFTA was 39th percentile. Common patterns observed included voicing (e.g., /k/ for /g/) and liquid gliding (e.g., /w/ for /l/ and /r/). In connected speech, intelligibility is severely compromised (only about 50% of words are intelligible).

**Literacy Intake**

*Rhyme awareness:* Performance on a rhyme detection task was less than would be expected by chance (4/10 on a forced-choice matching task). Informal observations indicate inability to produce rhymes in structured elicitation tasks.

*Alphabet knowledge:* Results of PALS testing showed that CC could identify 12 of the 26 uppercase alphabet letters. Letters known included M, I, B, Q, C, O, V, D, U, Z, K, and E.

*Beginning sounds:* Results of PALS testing indicated that CC was unable to sort words on the basis of beginning sounds (3/10: consistent with chance).

*Print knowledge:* Given an array of printed items, CC was unable to differentiate between any of the following print concepts: number, letter, word, or picture.

*Developmental writing:* CC signed a picture he drew with a series of discrete print symbols; although these were not recognizable as letters, CC’s series of five symbols was printed from left to right, and he differentiated these printed symbols as different from the picture (i.e., this indicated that he understood that print carries meaning and differs from other print media).

*Literacy interest:* CC consistently displays positive affect and orientation toward participating in literacy activities, including storybook reading, writing, and drawing.

**Behavioral Observations**

CC is communicative and enjoys talking with adults. However, he often appears distracted and restless, and seems not to enjoy structured activities. During storybook reading interactions with adults, he often appears disengaged, and needs continued prompts to reengage. He has great difficulty following directions. He rarely initiates with other children during group. CC’s parents are concerned that these behaviors (also observed frequently at home) may be indicative of an attentional deficit.

**Family Support**

CC’s parents are very concerned about his communicative and early literacy skills, especially with kindergarten due to start in less than a year. He has very supportive parents who interact with him frequently, including nightly storybook reading. CC’s parents would like information about strategies to use at home to promote his skill development.