Prior Knowledge Challenges for Young Deaf Readers: Considerations for the New Book Orientation

Susan King Fullerton, Associate Professor, Clemson University

Literacy Lessons™ hold great promise in best practices for instruction with deaf children. While many teachers of the deaf were trained in Reading Recovery long before Clay’s Literacy Lessons Designed for Individuals (2005a, 2005b) was published (see Fullerton, 2008a for history), I will refer to the intervention used with deaf children as Literacy Lessons. Literacy Lessons is an important distinction because such instruction represents an adapting of instruction to the learning needs of individual and diverse children who are in special education (Clay, 2005a) or special circumstances and offers new possibilities for these students through application of Clay’s theory (Doyle, 2009). Recently, Konstantellou and Lose (2009) noted that Literacy Lessons training offers an option for longer-term support. They include “children who may have been identified as having special needs before first grade, children who do not have access to Reading Recovery during their first-grade year, and elementary children beyond the first grade” (p. 64). In the case of hearing impaired (deaf and hard of hearing children), there are certainly cases where learners may not need additional services beyond 20 weeks, but in many cases, it is likely that long-term support will be needed, particularly for children who are profoundly deaf and have had limited language support (e.g., oral language or American Sign Language) before entering school. Clay provides a profile that aptly describes many deaf learners:

A speaker of another language recommended for Reading Recovery in a school where early literacy instruction is in English is subjected to only one rationale for exclusion—the child is unable to understand the teacher’s instructions on the Observation Survey tasks. If they follow the instructions and attempt the tasks, even though they fail most of the items, a series of lessons can be designed for that individual child. (Clay, 2005b, p. 182)

With deaf children we find that when they enter Literacy Lessons in first grade their scores on some Observation Survey tasks are at least comparable, if not higher, than those of hearing students (e.g., letter identification, word reading), but typically their scores on Concepts About Print are lower, most likely because of language delays. Clay (2005b) refers to these students in the section entitled “children aged five to nine schooled in another language, who need to make accelerated progress in English” (p. 182). She discusses how exploratory Reading Recovery programs were established to serve new immigrant children. While deaf children are not immigrants, the profile is much the same — entering school with a different language (and not always proficient in the first language) and needing to make accelerated progress in English. Many residential schools, day schools, and mainstream programs are likely to have fewer than eight students of first-grade age, and because of language needs, many teachers trained in Literacy Lessons are capable of offering the individual intervention to children in Grades 1–4, serving children for longer periods of time.

Language was the major block to their learning and in Reading Recovery they were given 30 minutes every day with a teacher who increased the time they spent talking, who personalized their instruction, and who also taught them to read and write. This gave them access to two new routes to language expansion. (Clay, 2005b, p. 183)

Clay is referring to 30 minutes for lessons with hearing children; the recommendation for a deaf child is 45 minutes (Charlesworth, Charlesworth, Raban, & Rickards, 2006; Fullerton, 2008b, 2008c). The topic of this article is new book orientations, but the primary focus and foundation is language. I hope to convey that opportunities for language use by the child are critical in Literacy Lessons for deaf children.
Over several years I have worked with teachers of the deaf, providing school visits and collecting data so we may better understand how deaf/hearing impaired children learn to read and how Literacy Lessons can serve as an individual intervention for children with hearing loss. In this discussion, I focus primarily on children who are deaf (rather than hard of hearing) and whose primary language is American Sign Language (ASL). It is also important to note that even though different countries (all Reading Recovery locations) such as the United States, United Kingdom, New Zealand, and Australia speak English, there are important differences in their sign systems. These differences can be traced back to Thomas Gallaudet’s visits to schools for the deaf in France. He returned to the U.S. with Laurent Clerc where they established the first American school for the deaf in Hartford, Connecticut, in the early 1800s. The signs used within that school as well as the signs already used by the deaf in the U.S. became ASL. As a result, the signs that make up American Sign Language and French Sign Language have much more in common than British Sign Language. This aside is provided to note that in some cases, the examples I use may not be applicable to sign language of other countries.

It is also critical to consider the diversity of deaf children and the variability of learning contexts in order to understand the adaptations or innovations discussed later. Clay explains Reading Recovery’s response to diversity: “We are able to produce efficient results for a diverse population of learners because we are able to design a set of lessons for a particular child” (Clay, 2005b, p. 1). Arguably, there is no population of children more diverse than those who are deaf. Children served in Literacy Lessons vary in terms of hearing loss, and some have cochlear implants to aid their hearing. The majority of the children I have observed are severely to profoundly deaf. Some begin school with fewer delays in language because their deaf parents signed to them in infancy; at the other end of the continuum, children enter school with very limited language because their homes lacked language support. As a result of these factors as well as others I have discussed previously (see Fullerton, 2008a), the differences are often extreme and require more adjusting and adapting than is typical within most Reading Recovery or Literacy Lessons individualized programs. For example, on one visit to a state school for the deaf (serving both residential and day school students), I observed lessons with children who were profoundly deaf and communicated in ASL, as well as a child who communicated orally (and had just received a cochlear implant) but was also learning ASL so that she could socialize with the deaf children at her new school. I also observed a deaf child who had just arrived as a refugee from Myanmar and was learning to communicate in sign language. Prior to entry at this school, neither the child nor his family had used sign language, and his primary mode of communication was gesture. My next visit took me to a public school environment in a different state where I observed children who were being instructed in classrooms with sign language and visual phonics (sounds represented through different hand configurations near the mouth). These examples are representative of the diversity within programs for the deaf and provide an important backdrop for the instructional information that will be presented. Such varied children require strong flexibility as well as creativity on the teacher’s part. What I describe here should be situated in the context of diversity and variability with an understanding that my suggestions are tentative and represent ideas that need to be systematically trialed with other deaf children of varying profiles.

There are many areas of learning that affect the reading development of children who are deaf. In relation to the topic of providing an orientation to the new book, I will focus on three factors related to prior knowledge: (a) knowledge of syntax, (b) conceptual or vocabulary knowledge, and (c) knowledge of text structure. (For a thorough discussion of research related to these areas and reading development, see Schirmer &
of a deaf child because the child may be delayed several years in language (particularly syntactic and semantic development). Given this concern, teachers want to support the child and compensate for these language issues, so we find ourselves providing detailed explanations on almost every page. On the surface, this seems appropriate — Clay states that we should “take the ‘bugs’ out of the text before he tries to read it” (2005b, p. 91). There are too many instances, however, when our orientations are overlong, the child’s attention span and memory load are overtaxed, and later, when the child reads, we get a sense that the reader is anxiously trying to remember the information we stated on a particular page rather than engaging in strategic reading work.

After years of giving orientations or observing teachers provide them, I now recognize three areas of prior knowledge that we need to consider differently for children who are deaf. These areas or factors that affect orientations and the child’s development of a strategic processing system are syntactic knowledge, vocabulary and conceptual knowledge, and knowledge of story structure. I realize that word recognition and automaticity are also important considerations during orientations and first readings, but for purposes of this discussion, I will focus on prior knowledge in the three areas stated. Often, as teachers of reading, we may become very word focused, attempting to ensure that the child reads each of the words correctly. While we certainly want the child to eventually achieve accurate reading, I would suggest that too much attention to words and visual information during the orientation could influence an imbalance in the child’s attention, particularly for a child who is so dependent upon visual information in all its forms. Within each section that follows I will discuss the areas of prior knowledge. The first area addressed is syntactic knowledge.

**Syntactic knowledge**

One well-researched area in education of the deaf is language development, particularly syntactic development (Quigley, Power, & Steinkamp, 1977; Quigley, Smith, & Wilbur, 1974; Quigley, Wilbur, & Montanelli, 1974; Quigley, Wilbur, & Montanel- li, 1976), and its influence on reading achievement (Paul, 2003). In some cases, children may have knowledge of words (in relation to word recognition and vocabulary) but they are still unable to comprehend language, specifically phrases and sentences. Kelly (2003) notes that “the basic linguistic processes required during reading comprehension can include retrieving the meanings of previously learned words, as well as chunking separate words into meaningful phrases” (p. 172). This parsing, or pulling together of information, is critically important in linking text content, allowing readers to make important inferences when they read.

Parsing also aids the reader in “syntactic anticipation” (Clay, 2001, p. 102); readers read with anticipation if they are to read with comprehension (Clay, 1991). Such fluent linguistic acts allow the reader to comprehend at the phrase or sentence level, and as a result, the reader’s working memory is freed up to attend to other strategic processes such as monitoring understanding and linking and connecting ideas across text to connect with prior knowledge and elicit inferences (Clay, 2001; Kelly, 2003). When these
various working systems are used efficiently and flexibly, the end result is effective processing of information or reading comprehension. But what happens when syntactic knowledge or any area of knowledge such as word recognition, vocabulary, or content knowledge is not sufficiently available to the reader? When processing is not fluent and greater allocation of attention is required to problem solve unknown words, for example, the attention and resources that need to go to the higher-level processes such as those mentioned earlier are unavailable.

To most readers who readily connect spoken and written language, language provides a source of information for anticipating, searching, and confirming, but such language use is not so straightforward for children who are deaf. The primary communication method for most deaf children in the U.S. is ASL. The syntax of this language is different from the syntax of English. Much like English (second) language learners, most deaf children learn English at the same time they are learning to read. However, many of these children who are deaf may not have language models early in their development prior to entering school (unless their parents are deaf). Even when hearing parents learn to sign, they may lack communicative competence in ASL. Signs are not always equivalent to spoken words. While a sign functions as the unit of meaning in ASL, “it is not completely interchangeable in sense and meaning with the ‘word’ in English” (Mayer & Wells, 1996, p. 98).

Because of the differences in the syntax of ASL and English, young deaf readers have difficulty taking full advantage of syntactic information in print. Error or miscue patterns often suggest that the learner has used visual information in solving the word but is less likely to use structure in anticipating the word (Fullerton, 2008b). The miscue will often contain some of the same letters as the word in print but does not make sense or sound right. When this occurs with a hearing child, we might ask, “Does that sound right?” or “Does that make sense?” but because the syntactic structures in ASL are not the same as English, it is possible that the word/sign does in fact fit with sense making or structure in ASL. Many of the children who begin Literacy Lessons control basic noun-verb structures such as Mom works although the same sign would be used for work and works. For most first graders entering Literacy Lessons, even a simple structure such as Mom is working would need to be modeled or taught (the sign is still the same for working unless the teacher chooses to incorporate a different signing system (e.g., Signed English) and indicate the ing). When I observed Jay reading the book Hot Dogs (Randell, 1996) for the first time, he read The hot dogs are fire instead of The hot dogs are cooking. Given several pictures and the context of the story, this was excellent thinking, and in fact, the sign for grill/cook closely approximates the sign for fire. Signs are frequently iconic, and Jay’s attempt made sense from a conceptual perspective given the picture. Syntactically, he had used the sign for a noun, but he clearly was attempting to use meaning (from the pictures) and in fact, the sign for fire

Language assessment data is extremely useful in making decisions about book selections and levels. As the teacher converses with any child before writing, it is critical that the teacher keep a record of the child’s current language. These conversations provide brief language samples that will allow the teacher to gauge changes in language proficiencies over time.
may better represent the action of cooking on the grill than the actual sign for *cook* (which is not particularly iconic except that the movement of the hands represents turning food from one side to the other). (To see the signs, refer to the main dictionary at [http://www.aslpro.com/](http://www.aslpro.com/) and click on the words *fire*, *grill*, and *cook*.) Jay’s teacher rightly praised him for his attempt and explained the differences in these three signs and how the words are used in English. She further explained that he could check the picture with the word since *cook* begins with *c* and *fire* begins with *f*.

What this example illustrates is the difficulty in clarifying what makes sense and sounds right for deaf children. If we do not carefully examine the child’s attempts and hypothesize rationales (all on the run!), we may not recognize that the child is using sources of information that we are not crediting.

While it is not always possible to anticipate such errors, most teachers find that children’s confusions around certain texts are fairly similar. Over time, as teachers use the same books, they begin to become aware of possible confusions so the most logical way of handling such issues is to make the child familiar with the language phrases in advance. We can use such syntactic phrases as we explain the story events and/or discuss pictures. Often, we may ask the child to say/sign the new or unusual structure with us. Whether the child can repeat the structure back serves as a good indicator of his capacity to use the syntactic structures within a particular text.

It is imperative that the teacher determine the child’s current control of language, particularly syntactic structures, through the writing portion of the lesson as well as language samples (see Schirmer, 2000 for a well-developed example) or formal language assessments (see Easterbrooks & Baker, 2002) given periodically throughout the child’s Literacy Lessons. As the teacher converses with the child before writing, it is critical that the teacher keep a record of the child’s current language through signing and/or speech. These conversations provide brief language samples that will allow the teacher to gauge changes in language proficiencies over time. (If it seems impossible to take notes and converse at the same time, teachers must consider periodically videotaping lessons to take notes on the child’s conversational language.) One-to-one instruction in Literacy Lessons combined with supportive classroom instruction should readily bring about changes in language development.

If this is not the case, teachers need to determine why language progress is not accelerating. *Language assessments must not be optional for deaf children during Literacy Lessons*; they should be administered alongside The Observation Survey (Clay, 2002) and periodically throughout the child’s lessons. Language assessment data is extremely useful in making decisions about book selections and levels. As stated previously, syntactic ability has been one of the most-researched areas in literacy with the deaf. Experts have come to acknowledge, however, that vocabulary acquisition is as important, if not more so, in determining the reading progress of learners who are deaf.

**Vocabulary knowledge**

Vocabulary has been identified as one of five key areas within literacy development (National Reading Panel, 2000). Vocabulary size has been consistently associated with reading comprehension in learners who are hearing (Anderson & Freebody, 1981; Beck, Perfetti, & McKeown, 1982) and deaf (Garrison, Long, & Dowaliby, 1997; LaSasso & Davey, 1987). For many of the same reasons mentioned previously, learners who are deaf also begin literacy development with less vocabulary knowledge and conceptual knowledge than hearing learners making it more difficult to derive word meanings from context (Davey & King, 1990; deVilliers & Pomerantz, 1992). For hearing students, the bulk of word meanings acquired has been attributed primarily to rich contextual exposures during reading (Daneman, 1988; Elshout-Mohr & vanDaalen-Kapteijns, 1987; Nagy, Anderson, & Herman, 1987). We know that when readers are able to make use of context, word recognition is facilitated (Kintsch & Mross, 1985), but the impact of context on acquisition of word meanings seems to be less clear and related to a number of task, reader, and text variables (Davey & King, 1990; Fullerton, 1991). In order to derive word meanings from context, readers must be able to select key, salient information from the surrounding context and to integrate this information with contextual information that preceded the word as well as with the reader’s background knowledge. Furthermore, readers with smaller vocabularies are less inclined to make attempts to figure out meanings from context (Robbins & Ehri, 1994; Elshout-Mohr & vanDaalen-Kapteijns, 1987) possibly because of their diminished knowledge of word meanings (Biemiller, 2007). Daneman (1988; Daneman & Green, 1986) has suggested that the
Relative to vocabulary, the following example illustrates a familiar complexity of ASL and reading in English. Many of the earliest little books that are used in Literacy Lessons and Reading Recovery use the word *look* or the phrase *look at*, and the same sign (a single visual representation) is used to represent these concepts even though the second has two words. Children learn the word *look* fairly readily, but as they move up in texts, the phrase *look for* is used. This denotes a different concept, so it is suggested that *look* read/signed as *look for* should be indicated as a substitution by WC, indicating wrong concept.

While I agree that it is important to eventually teach the child the differences in these signs, I wonder if we may be placing too much emphasis on this differentiation while the child is *reading*. Can we be sure that the child is not making meaning when he signs *look* and *for* as two separate words?

If a child offers the correct sign for the word *look* and the correct sign for the word *for*, as two distinctly separate signs/words, I would suggest that we need to be tentative and consider the complexity of all that the child must control. While he is reading, the child is attempting to make meaning and to match signed (and sometimes spoken words, if they are vocalizing) with the print of the text. One of the foundational strategies in learning to read is locating known words or one-to-one correspondence, and yet, for beginning readers who are deaf, we are expecting them to recognize exceptions as they attempt to map signs onto printed words. We see the reliance on the conceptual signs as supporting the child’s development of meaning, and in some cases I would agree, but we also need to think about when and how to teach such sign/vocabulary differences in relation to the child’s literacy development (as opposed to ASL development) and whether we can be certain that it is a conceptual error. As I see highlighter tape or underlining in books to help the child remember that these two words are represented through one sign or concept, I am concerned that a memory exercise is being promoted rather than the child bringing his current processes to bear on the text. I am certain that there will be

With children who are deaf, we often find that when the text makes its journey to familiar reading and a few days have passed without reading a particular text, the child does not appear nearly as independent in her reading. Such indicators should serve as a red flag.
some teachers of the deaf who will strongly disagree with me, but my primary point is that teachers must carefully consider how and when to teach differences in sign, language, and text, and that what is presently known and controlled by the child should be the most important consideration. In addition, I would suggest that such instructional emphases, especially in early levels, are focused more on teaching for word accuracy than teaching for strategies. (See Estice, 1995, for a discussion of the difference.)

As indicated, sometimes it is difficult to sort out vocabulary and conceptual issues from syntactic and sign issues. Likewise, for teachers of the deaf, it is difficult to balance the roles of language teacher and literacy teacher. While reading Gabby and the Christmas Tree, (Dufresne, 2009), Terry read (and signed) see good for looks good in the text. In ASL, see and look are sometimes miscued because the signs are very similar. Both are represented with the “V hand shape” at the eyes, one with the front of the hand facing outward (see) and the other (look) with the “V hand shape” (palm facing down) positioned in front of the eyes. (Again, refer to http://www.aslpro.com to see the signs demonstrated.) In this case, however, the meaning or concept for look is again different, so the teacher explained that the correct sign was look(s)/appears. In this example, in contrast to the previous one, we have clearer indications of the child’s conceptual confusion. While a lengthy explanation would not be appropriate during the child’s first reading of the new book, this confusion would be an important teaching point after the reading. In fact, such conceptual differences that are likely to confuse the child should be addressed in the orientation; we should anticipate that this new meaning for the word look is not going to be readily understood by the child. In addition, as demonstrated in the example, such word distinctions are also appropriate examples of teaching points after the reading. Once the child understands the difference between the signs and concepts for look and look for, and then looks/appears surfaces, it is important to explain the differences — that the word look is always represented as

l-o-o-k in English print, but depending on the language and the meaning, it can be represented by different signs (e.g., Tom looks sick, so he looks/looked for his medicine.) With deaf children, such explanations of vocabulary may also be appropriate during word work, although it should be done in relation to language within text and never as isolated words/signs to be memorized.

Clearly, there is much to be considered in relation to vocabulary development and reading for deaf children. My final point is related to vocabulary within texts at higher levels. I see this issue frequently as I observe deaf children, but it is not clearly addressed in research. Some signs, adjectives and adverbs for example, may have the same basic sign but are differentiated through facial expressions and emphasis (a somewhat simplistic explanation, but it should suffice for nonsigners). For example, there is the sign for smart and the same basic sign is used for clever, intelligent, as well as the nouns, intelligence and intellect. From the research presented earlier, it is evident that oral and written contexts are substantial learning sources. We also know that hearing readers problem solve unknown words and often check their attempts with word knowledge gained from oral language.

Such linkages are not as likely for profoundly deaf readers. A learner may be familiar with smart through his ASL vocabulary and may even recognize the word in print. However, when reading, visual information is more likely to influence the processing (as opposed to language), and upon first encounter with clever, there may be no access route to the precise word represented in print. For a beginning reader who is deaf, one sign/concept may be linked to a particular sight word or instantiation represented in English — smart in this case. In contrast, because of his knowledge of spoken language and his developing auditory-visual print connections, the hearing child may access knowledge of the word clever while decoding.

For children who are deaf, synonyms or subtleties in meaning are not so easily acquired from the environment, as the previous example indicates. Moreover, there is not an exact sign to print correspondence as there is in spoken language and print. When the child who is deaf encounters
novel vocabulary, there is limited prior knowledge to draw upon. Unlike their hearing peers, phonemic recoding may not be an option for profoundly deaf learners, so some readers may fingerspell the word as a placeholder. Others will merely wait for teacher assistance. The active response of fingerspelling the word is more strategic than passively waiting for a told. In response to this passivity, the teacher could encourage the child to generate or hypothesize possible known words that would fit within the context while covering up the unknown word — sometimes the learner will be able to offer the conceptual sign (synonym). Through such scaffolding, the learner is guided in making an attempt and doing some of the reading work. When efforts such as this occur, we can offer praise for independent work and tell the learner that the word in print means the same (or almost the same) as a known sign/concept. Of course, just as with hearing children, it will take many exposures to this novel print representation before it becomes categorized as a synonym in the child’s vocabulary stores.

**Story structure knowledge**

Research documents that readers recall text better when it follows predictable story structures (Fitzgerald, Spiegel, & Webb, 1985) and that explicitly teaching story structure aids comprehension and recall (Reutzel, Sinatra, Stahl-Gemake, & Berg, 1984). Likewise, studies that have taught story structure to deaf children (Akatmatsu, 1988; Luetke-Stallman, Griffiths, & Montgomery, 1998; Schirmer & Bond, 1990) have found such interventions improve comprehension. These findings suggest that when introducing early texts, it may be important to support an awareness of the way the story works. Beverly Randell (1999), in writing about her authorship of numerous PM Storybooks noted that traditional narratives frequently have a problem-solution structure. Helping the young reader understand that the main character has a problem, and that the story is about how he goes about trying to solve the problem, builds understandings of how stories work and also supports the reader’s ability to predict story events.

Such explanations capitalize upon the child’s prior knowledge of stories. Unfortunately, for those young deaf children whose early development involved limited signing or being read to/signed to, the child may not have developed the requisite background knowledge to understand how stories work. According to Schleper (1997), some deaf parents interact with their children by reading and rereading stories on a continuum from “story telling” to “story reading.” Through the storytelling, the parent makes the child familiar with the story (just as Clay suggests) and in subsequent readings, the parent focuses more and more on the text. Such ways of sharing stories have become more common in literacy settings with whole-group classes of young deaf children. A Literacy Lessons teacher successfully incorporated storytelling as an initial procedure within the orientation when working with children who lack knowledge of stories or have limited knowledge of English. Others have also found this procedure helpful.

Such a procedure seems to correlate with the foundational information in Literacy Lessons (Clay, 2005b) within the section, “children who know little about stories or story telling” (pp. 162-163). Clay outlines procedures that entail reading the story to the child first at early levels, but my work with profoundly deaf children suggests that because the deaf child’s inner speech (Vygotsky, 1978) is most likely visual-spatial (Mayer & Wells, 1996), we may want to begin with storytelling via signs to represent the story events or plot. Some teachers have also combined storytelling and use of the pictures from the text.

The rationale for this procedure with deaf children relates to the visual-spatial nature of information delivery through sign language; I am not suggesting this as an adaptation for hearing children.

### Adaptations for the New Book Orientation with Young Deaf Learners

Storytelling, as an initial component of the orientation, has been found useful in increasing the child’s understanding of characters, plot and story events. One approach is to use the storytelling procedure first, then introduce the story within the typical framework of book orientations. We (the teachers and I) have also found the procedures that Clay outlines in reading the story to the child to be extremely important for the deaf child. In fact, while it may be necessary to do this only at early levels with hearing children, such an adaptation of procedures may be critical for deaf children at higher levels of text as the language and vocabulary become increasingly complex. The rationale is relevant to the issues raised previously regarding prior knowledge issues — specifically syntactic knowledge, vocabulary knowledge, and knowledge of how stories work. In some cases, it also
may be appropriate for the child to read the same book within two separate lessons before the running record is taken. As a result, the teacher lets some things go on the first reading, knowing that she may attend to them on the second reading of the new book. Of course, this would not occur for each text, but may be used when the teacher determines that the child is having greater difficulty with a particular text. The following framework discusses the sequencing of these adaptations.

Maximum support needed:
- The teacher presents the story through a storytelling format.
- The teacher briefly introduces the story and reads the book to the child. The teacher supports the child’s interest and interactions during the reading.
- The teacher introduces the book and the child reads the book with support from the teacher.
- The following day, the child reads an additional text during familiar reading and there is no running record.
- On this following day (the same day that no running record was taken), the teacher briefly introduces the text and interacts with the child around the book’s meaning and any important difficulties that were noted from the first reading.
- The child reads the text a second time, providing opportunities for greater independence and problem solving.
- The next day, the teacher takes a running record of the book.

More support needed:
- The teacher introduces the book and reads the text to the child as the initial step.
- The child reads the text. Depending on the child’s processing, the teacher makes the decision as to whether a second reading of the new text is needed.
- If so, the child reads the text a second time the next day, and no running record is taken.
- If the child’s first reading is satisfactory (demonstrating adequate problem-solving and fluency), a running record is taken the next day.

Least support needed:
- The teacher provides an appropriate book introduction.
- The child reads the book. Depending on the child’s processing, the teacher makes the decision as to whether a second reading of the new text is needed.
- If a second reading is needed, the child reads the text a second time the next day, and no running record is taken.
- If the child’s first reading is satisfactory (demonstrating adequate problem solving and fluency), a running record is taken the next day.

I am not suggesting that any one of these formats should be followed for every book orientation, but when teachers note a lack of monitoring and self-correcting or have an overall view that the child’s strategic activity during the initial reading of text is inadequate, the use of these procedures are called for. In addition, teachers should adapt these procedures to meet the needs of each individual child; there are likely to be variations that will better suit certain learners. The ill-structured domain (Spiro, Coulson, Feitovich, & Anderson, 2004/1988) of literacy development for the deaf and the complexity of profiles of young deaf readers is such that following the child and adjusting accordingly remain imperative.

Conclusions
The information presented in this article is based on systematic observations of Literacy Lessons with deaf children as well as analyses of videotapes generously provided by teachers. However, these suggestions need continued study. Only by studying many children for several years within carefully designed and rigorous investigations can we determine the efficacy of Literacy Lessons procedures with deaf children. One of the most-critical determinations is whether these learners maintain their gains.

The task is somewhat daunting; several unique challenges in conducting research with the deaf have been identified. The first is that “hearing loss is a low-incidence disability” (Luckner, 2006, p. 50). In schools, there are fewer numbers of deaf students compared to students with “high-incidence” disabilities, with classifications such as learning disabilities or speech–language difficulties. This low incidence coupled with geographic distances between educational programs for deaf children, situated within residential and day schools for the deaf as well as public school programs, make large-scale investigations difficult. Unfortunately, existing research is represented by
small numbers of participants, lack of control groups, and convenience samples (Ferrell, Luckner, & Muir, 2004, cited in Luckner, 2006).

As a result of the heterogeneity and the cultural/linguistic diversity of the population of students who are deaf, an increase in the use of single-subject experimental research is warranted. These types of experimental studies allow educators and researchers to examine the effects of an intervention on one student or a small group of students (Neuman & McCormick, 1995). Increased use of single-subject experimental methodologies has already taken place in the fields of medicine, psychology, communication disorders, social work, and other areas of special education. (Luckner, 2006, p. 51)

In conversations with Marie Clay about my work with the deaf, she wisely suggested that single-subject studies would provide solutions to many of the issues encountered in investigations of the literacy development of deaf children (personal communication, November 7, 2002). In the U.S., we have an exciting opportunity in that there are a number of teachers who are working individually with deaf children through Literacy Lessons. We could have no better research scenario for observing and capturing what happens as children who are deaf learn to read. What must occur is a commitment from teachers and administrators within schools and programs to work collaboratively with a number of researchers to support the systematic data collection of Literacy Lessons with the deaf. In order to truly understand and improve instruction for deaf children, such information offers a vital opportunity.

References


**Children’s books cited**


**About the Author**

Susan King Fullerton is an associate professor in reading education and a Reading Recovery trainer emerita at Clemson University. Formerly a teacher of the deaf and a university faculty member in deaf education, she has authored articles and chapters on literacy acquisition of deaf learners.

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