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ABSTRACT

This paper discusses various approaches educators can use to evaluate the reading skills of students who are deaf and hard of hearing, with special emphasis on reading fluency. Various assessment measures are described and examples of how mature users of American Sign Language read English are given. It highlights the use of a literacy portfolio, rubric assessments, observation checklists, anecdotal records and diaries, a running record analysis, writing samples, reading attitude and interest surveys, a metalinguistic strategy survey, and a reading and writing log to assess students with hearing impairments. After reviewing the types of information the educators need to gather about reading ability, the "Reading Fluency Screening for Signing Students Who Are Deaf or Hard of Hearing" is described. This screening tool provides teachers with a format for comparing fluency traits in children with those exhibited by fluent adult deaf readers by measuring fluency envelope, internal grammatical aspects, and internal word level aspects. The paper closes with the suggestions for increasing reading comprehension and fluency through semantic interventions, syntactic interventions, and pragmatic interventions. (Contains 20 references.) (CR)

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Examining Reading Comprehension and Fluency In Students who are Deaf/Hard of Hearing

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(Presentation at the 80th Annual Convention of the International Council for Exceptional Children. Kansas City, MO, April 18-21, 2001)

Abstract

This presentation demonstrates various approaches to evaluate the reading skills of students who are deaf and hard of hearing, with special emphasis on reading fluency. Various assessment measures are discussed and examples of how mature ASL users read English will be given along with suggestions for increasing reading comprehension and fluency.

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Introduction

Language and literacy development has long been the focus of educators of students with hearing losses. Teachers of deaf and hard of hearing students have always had to deal with the complex relationship between language development and literacy development. This interrelationship was brought to the attention of regular education through the whole language movement. According to McAnally, Rose, & Quigley (1999), whole language is based on the belief that "language should be kept whole during instruction rather than fragmented into bits and pieces for isolated drill" (p. 121). This practice was extended to literacy development, and whole language activities focused on

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the development of language and literacy as a holistic process. For whatever reason, the pendulum has swung, and whole language has gone out of favor in most schools serving students with normal hearing. Some speculate that whole language failed to make all children literate because teachers applied its premises poorly. Some researchers have found that whole language did not fail but that student outcomes are the same no matter whether a whole language or a traditional basal-type, phonics based approach is used (Stahl, McKenna, and Pagnacco, 1993). No matter which approach is used, the end result for many students has been less, than acceptable. This is true for hearing students as well as students who are deaf and hard of hearing. According to the National Institute for Literacy (www.novel.nifl.gov), 21-23% of American adults cannot read well enough to fill out an application, read a food label, or read a simple story to a child; and additional 25-28% can find individual words and compare and contrast them but cannot problem-solve, cannot integrate information requiring two or more sequential operations, and require help from friends and family members in dealing with everyday literacy requirements. This means that as much as 50% of the adult population is functionally illiterate. If lack of hearing were the only factor in learning to read, then all hearing people would be good readers, but this is simply not the case, and when seen in the light of national statistics, the results for students with hearing losses do not seem quite so startling. The long-reported fact that deaf and hard of hearing students on average graduate with about a 4th grade reading level is, sadly, consistent with the above findings on hearing adults. If 4th grade is the average, the half read below and half read above that level, so at least half, if not more, or the deaf and hard of hearing population is able to

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read well enough to handle sequential information, to fill out forms, and to get by on a daily basis without assistance.

One problem in promoting reading has always been that reading is more than just the ability to define words and to decode them. The process of reading is quite complex, and assessment of reading is equally complex. Giving standardized tests of reading vocabulary, reading comprehension, and phonics ability will let a TOD compare one students to the general hearing population, but they will not give sufficient information to guide instruction. The purpose of this presentation is to review the pieces of assessment that the TOD must address and to present an in-depth treatment of the assessment of fluency, a component of reading that has been grossly overlooked with these students.

What Is Literacy ?

The National Institute for Literacy defines literacy as "'using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential. This definition goes beyond simply decoding and comprehending text to include a broad range of information-processing skills that adults use in accomplishing the range of tasks associated with work, home, and community contexts." The NIFL measures literacy along three dimensions—prose literacy, document literacy, and quantitative literacy. "Prose literacy consists of printed information in the form of connected sentences and longer passages that define, describe, or inform, such as newspaper stories or written instructions. Narrative prose tells a story." It is important to note that prose is less frequently used by adults in everyday life than by school children.

This being the case, then reading teachers should reconsider the amount of time they spend on narrative prose as opposed to other written forms (e.g., newpaper stories and written instruction). Document literacy is the ability to read arrays of information arranged in rows and columns (e.g., tables, data forms, lists, maps). Without document literacy skills, people cannot locate information. Quantitative literacy is to the ability to read information containing numerical figures. In this presentation we focus on prose literacy, recognizing that reading teachers must also attend to document literacy and must work collaboratively with the math teacher to encourage quantitative literacy.

How Do I Gather Information

In order to properly guide the development of literacy in students who are deaf and hard of hearing, TODs need to gather sufficient data to inform the decision-making process. With students who are deaf and hard of hearing, the need to gather information from multiple sources is essential. No one source can adequately circumvent the problems that occur as a result of the hearing loss.

The Literacy Portfolio

Information from multiple sources can be gathered into a literacy portfolio. A portfolio is a collection of authentic products that the student has read or written as well as other quantitative data. Portfolios are especially important with students who have hearing losses because standardized tests tend to document what our students can't do

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rather than what they can do. It is necessary to know both of these pieces of information so that we can move students along the knowledge and skills continuum.

The literacy portfolio can be a folder, a notebook, or any sort of container. Make sections for beginning status, for on-going work in process, and for an exit status. They can include:

- videotapes and audiotapes of conversations,
- logs and journals,
- representative classwork and assignments,
- reports
- scrapbooks of activities demonstrating performance associated with the language objective,
- illustrations and diagrams,
- evaluations and checklists,
- observation reports from others,
- tests and quizzes,
- teacher's notes and anecdotal observations, and
- photographs and projects.

Portfolios are most helpful for IEP meetings and other parent conferences as you can show actual examples of the student's skills and progress. The portfolio is an excellent source for assisting in determining appropriate IEP objectives. Literacy portfolios are not new. They are an outgrowth of the Whole Language movement, one component of that movement which remains in use today. Since they are not new, we do not spend time in this presentation describing them in any great detail.

Rubric Assessments

Another very useful source for recording reading progress is the use of a *Rubric Assessment*. Rubrics allow teachers to tailor assessment tools to each student's current level of performance. They are most helpful when documenting progress related to the general education curriculum. In our state, this is referred to as the Quality Core Curriculum, or QCC. QCC objectives have become the driving force in special education. The challenge to you is this: how do you individualize instruction and simultaneously deliver the exact same content as others receive? Assessment rubrics are helpful in this challenge because they allow us to identify general education objectives while quantifying and qualifying them in ways that make them appropriate for each student as an individual. (Overhead of sample rubric related to QCC shown here). As with portfolio assessments, rubric assessment is not a new idea, so we do not discuss these in depth in this presentation. The fluency screening tool we will discuss today bases one of its components on a rubric format.

Observation Checklists

A wonderful addition to the literature that is very helpful in deciding how to assess literacy skills in the deaf and hard of hearing population is the book, *Starting with Assessment*, and it appendix, *Toolkit*, which were written by Martha French (1999) and is published by Gallaudet University. This book and toolkit provide TODs with observation checklists in the following areas:

Stages of ASL Proficiency

Stages of English Conversational Proficiency

Stages of Literacy Development

Reading Checklists

Writing Levels

Student and Parent Surveys

Anecdotal Records and Diaries

Anecdotal records and diaries are a useful source for documenting examples of a child's language and literacy skills in context. They provide situationally-based support for formal test results. They are used for recording development extemporaneously. Gather comments about a student's development in varying social contexts such as:

- student to student interactions in the classroom
- student to student interactions during non-instructional time
- student to teacher formal classroom interactions
- student to teacher informal, non-instructional interactions

Gather comments about the student's literacy behaviors in multiple locations such as:

- the classroom
- the playground or school hallways
- one-on-one
- in groups
- at home.

Gather comments about the student's independent attempts to read a variety of prose materials such as: newspapers, magazines, notices on the wall, letters, memos. Gather comments about the student's independent attempts to read a variety of document-type print such as: pamphlets, forms, manuals, charts, graphs, and menus. Gather comments about the student's independent attempts to read various print forms including numerical information such as weather maps, recipes, telephone books, and advertisements.

Running Record Analysis

Running record analysis, such as the format developed by Marie Clay (1996) has been used successfully with hearing students for many years. There have also been attempts to do this with children who are deaf and hard of hearing. A running record is useful for documenting the oral reading skills of orally educated students. Recently attempts have been made to combine the concepts of Miscue Analysis (Goodman, 1973) with Clay's Running Record Analysis to provide a similar format that may be useful with students with hearing losses (Gennaoui & Chaleff, 2000). We propose a fluency record later in this presentation that we have found to be more useful with signing students.

Writing Samples

Regarding written language, one of the best sources of information has always been and remains the writing sample. It is in the sample that we see how well a student is applying the skills he is learning. When taking a writing sample, let the student know in advance the skill you are most hoping to see. For example, you may tell the student that you want to see how well he can edit a draft report, how well he uses capitalization and punctuation, or how creative he can be with his written ideas. This will give the student a context for demonstrating his skills. In addition, many schools and states now use a rubric assessment statewide to evaluate writing. For example, in our state students are rated with a holistic rubric in the 3rd and 5th grades and with an analytic rubric in the 8th and 11th grades.

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Reading Attitude and Interest Surveys

It is helpful somewhere along the line to get a sense of a student's attitude toward reading. Many students have had such difficulty with the reading process that they have developed negative, ingrained attitudes toward the process. Knowing this, the teacher can be more sensitive to the student's concerns and fears. Based on the assumption that students always are more motivated to read about what they are interested in, you also need to get the student to fill out a good reading inventory. This is necessary because we can not always count on students telling us what they want to read when given a choice. Ask a student "What would you like to read?" and they will more often than not choose the book that is the shortest, that they think will be the least challenging, or that their friends are reading.

Metalinguistic Strategies Survey

It is also helpful to survey the repertoire reading strategies that a student has mastered. This is discussed in greater detail later in this presentation, and an example survey is found in the appendix of this paper.

Reading and Writing Log

Keeping a log of what the student has read and written is a helpful way of quantifying as well as qualifying his efforts. Lists of books the student has read can be compared to charts for reading levels, such as the *Accelerated Reader*, materials. This will give you a sense of the reading range within which the student is most comfortable.

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Logs of written materials can be used to help the student feel successful in the amount of print he has produced.

Fluency, Rate and Phrasing

The literature is very clear regarding the relationship between reading fluency and reading comprehension in students with normal hearing. According to the National Reading Panel (NRP), a subgroup of the National Institute of Child Health and Human Development (2000- http://www.nichd.nih.gov/publications/nrp/findings.htm), reading fluency is defined as the ability to read with expression, speed and accuracy. According to Richard (2000), reading fluency is a process of rate, recognition, and phrasing including pitch, stress, and juncture of the spoken word. The NRP further stated that fluency is a critical factor necessary for reading comprehension. Yet, fluency skills are rarely addressed in the typical classroom.

The reason that fluency is such an important component of reading comprehension is that we think in terms of chunks or phrases of information. We do not think in terms of individual, discrete words. When a child reads word for word, his memory capacity is rapidly outstripped, and he is unable to make sense of the material read (LaBerge and Samuels, 1974). Slower readers may be less able "to hold extended segments of text in their memories and may be less likely to integrate those segments with the meaning of other parts of the text" (Mathes, Simmons & Davis, 1992 as reported by Mastropieri, Leinart, & Scruggs, 1999). The reason that chunking works so well is that it taps into the fact that the English language is based on phrase and clause units (i.e., chunks of information). English uses noun phrases, verb phrases, adjectival phrases,

adverbial phrases, prepositional phrases, as well as adverbial clauses and relative clauses. American Sign Language, as well, represents information in meaningful chunks. For children who have usable residual hearing, the phrase and clause envelope is available through the auditory pathway. For children who do not have usable residual hearing, ASL provides a visual representation of a concept and provides a bridge between the English print form and meaning, assisting students with and without usable residual hearing to improve reading fluency.

Factor in the development of reading fluency for students who are deaf and hard of hearing include but are not limited to (Lupton, 1998: Sign Enhancers, ; Clayton & Valli, 199 ; Padden & Ramsey, 2000; Hoffmeister, 2000)

- use of fingerspelling
- topic grammar
- signing speed
- eye contact
- facial expression
- body movement
- sign space
- absent referent/pronominalization
- role-taking
- eye gaze
- question grammar
- negation
- directionality of verbs

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- classifiers as ASL tags
- rhetorical question grammar
- cheremic accuracy
- semantic accuracy
- and other components of the language.

In the second part of this presentation, we demonstrate how to use a reading fluency protocol that was developed specifically for students who are deaf and hard of hearing and who use sign language, either English-based or ASL.

What Information Do I Gather?

TOD need to gather information on the following notions about and components of reading:

- Language
- Appropriate General Education Objectives in Language Arts for Child's Level
- Concepts About Print and the Reading Process
- Word Knowledge (letters, vocabulary, and decoding at an automatic level)
    - Includes phonic and morphographic analysis skills (i.e., available source of applied skills)
- Sentence Level Knowledge (i.e., syntax)
- Reading Comprehension

    a. formal test of reading grade level

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b. retelling (providing details, sequencing, and summarizing)

c. answering questions

- Pre-reading, Reading, and Post-reading Strategies Repertoire
  - Includes such skills as
    a) knowledge of story structure and themes,
    b) prediction and inference based on activation of prior knowledge
    c) activating mental imagery based on prior knowledge, visual cues, and information accumulated from the text
    d) summarization skills (what the story is "about")
    e) self-monitoring of understanding (clarifying misunderstandings)
- Spoken or Signed Fluency (as an indicator of comprehension)
- Word and Sentence Writing Skills (i.e., spelling, knowledge of sentence components, capitalization and punctuation, written discourse devices)
- Knowledge of Writing Stages (i.e., drafting, editing, sharing, revising)

Assessing Language

The ability to read the English language is based upon the assumption that the student has a native language, whether spoken or signed English or ASL. For example, if a student does not understand information presented via the passive voice construction (e.g., The cat was chased by the bird), then s/he will misread a sentence written in that construction. In the 1970s and 1980s it was very popular to have deaf and hard of hearing children read materials that were intentionally written into their grammar-controlled forms. This was the philosophy behind the *Reading Milestones* series. The

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problem with the *Reading Milestones* series is that the stories were all contrived, and there were only a very few at each reading level. This did not give most children sufficient opportunity to practice reading at their new level. Because the stories were somewhat contrived, and because it is extremely time-consuming to rewrite literature into a child's personal lexicon and grammar, this approach went out of favor when Whole Language came in to favor. However, it is still absolutely essential that we have a sense of a student's grammar before we start choosing reading materials. When you assess language, you must consider multiple languages: English, ASL and other spoken languages that might be in the child's home. We do this through formal and informal means.

In addition to the all-important language sample, consider the following tests, checklists, and activities:

The Rhode Island Test of Language Structures

Teacher Assessment of Grammatical Structures (TAGS)

Teacher's Assessment of Spoken Language (TASL).

General Education Language Arts Objectives for Child's Level

Ultimately, no matter what reading textbook you choose or what curriculum you follow, for most students who are deaf and hard of hearing, you are required to document that you have instructed the child in the general education curriculum. In the State of Georgia, that curriculum is called the *Quality Core Curriculum* or QCC. The QCC has a separate section for Language Arts. Reading skills are included under the Language Arts section. Choose the grade level that corresponds to the grade level on which you are

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working. These objectives can be written into assessment rubrics and used to keep you on track with both the sameness of the curriculum and the individualization of the IEP.

Concepts About Print and the Reading Process

In addition to word analysis and reading comprehension, the reading process includes basic concepts about the printed page. These are also referred to as "The Conventions of Reading". For example, it is conventional to hold a book right-side up; it is conventional to read from top to bottom, left to right. Children learn these conventions by sitting in their parents' laps and being read to. Since many deaf and hard of hearing children are not read to, many come to school without knowledge of these basic conventions.

Surprisingly, we do have an actual test that was actually normed on deaf and hard of hearing that looks at the conventional aspects of reading. This is the *Test of Early Reading Ability-Deaf/Hard of Hearing (TERA-DHH)*. It is good to give this test at least once to a child to get an assessment of what conventional skills they have. Also, the recording form on the back of the protocol makes a good checklist for informing your decisions about what to teach next. In addition to a formal assessment, there are many checklists available that present a hierarchy of reading and writing conventions, such as the material in the *Toolkit* previously mentioned.

Word Knowledge

The category of word knowledge includes knowledge of letters, vocabulary, and decoding at an automatic level. Specifically, we need to assess the following:

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- phonic and morphographic analysis skills (i.e., available fund of skills the child can apply)
- literal and non-literal understanding of vocabulary as well as multiple meanings of words.

Phonic skills are generally assessed through traditional tools such as the *Reading Mastery Test*, the *Stanford Achievement Test- Hearing Impaired Version*, the *Kaufman Test of Education Achievement,* and the *Woodcock-Johnson.* Teachers have fewer tools available to look at word meaning, structural analysis, and morphographic ability. An investigation of the child's understanding and use of basic vocabulary, or multiple meanings of words, of prefixes, suffixes, and Latin and Greek roots of words in an important component of a reading assessment, especially as student approach the later elementary and early middle school years. Tests such as The Receptive One Word Picture Vocabulary Test,(Gardner, 1985), The Expressive One Word Picture Vocabulary Test, (Gardner, 1981), the Peabody Picture Vocabulary Test-R, (Dunn & Dunn, 1981), , The Test of Adolescent and Adult Language-3, (Hammill, Brown, Larson & Wiederholt, 1994 , and the The Oral and Written Language Scales; (Carrow-Wollfolk, 1994) provide some test items that look at morphographic development, but we are aware of no test that is a comprehensive measure. This leaves it up to the teacher to inventory the student's affix repertoire and Latin and Greek root word repertoire. Lists of affixes and roots may be found in the appendix. Since this will be an ongoing endeavor, it is important that you maintain a log of those affixes and roots a child understands and uses and that you pass these logs on to the next teacher who will have the student in the following academic year.

Sentence Level Knowledge of English

This level of evaluation is tied into previous assessment of English grammar. It is important to have a inventory of the grammar that a child understands in conversation because this will determine your approach to teaching sentence level reading. If a child has a grammatical structure in his or her repertoire, then reading that structure becomes a matter of semantic interpretation. If the child does not have that sentence structure in his repertoire, then we must provide sufficient scaffolding to help him discern the meaning of the print version of a sentence. Most deaf students do not have syntactic structures in their "through-the-air" language that are commensurate with those in the print material. After assessing a child's available English grammar, it is helpful to determine which of these structures the child is able also to read. The reading instructional process is very different when a child has the grammar from when he does not.

Metalinguistic Knowledge of ASL

For students who are learning to bridge between their conversational language and language in print form, metalinguistic awareness of the structure of ASL has been found to be a useful tool. Often called 'Bridging" (Schimmel, Edwards, Prickett, 1999), using ASL metalinguistically provides the student with a new strategy for attaching chunks of print information. For example, knowledge of classifiers in ASL helps the reader understand English prepositional and adverbial phrases. Knowledge of verbs of motion and location help deaf students understand concepts such as direct object-indirect object relations and prepositional phrases (Hoffmeister, Philip, Costello, & Grass, 1997).

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Only recently have we begun to see efforts at developing ASL tests and inventories that measure the ASL skills of children who area deaf. Prior to this time, we have fallen back on the incorrect assumption that the deaf child will automatically develop native-like skill in this language. This just is not the case. Such tests as the ASL Assessment Instrument (ASLAI) (Hoffmeister, Philip, Costello, & Grass, 1997), and the ASL Checklist by Evans, Zimmer and Murray (1994) are experimentally available. As an alternative, you will find another source of information on ASL goals and objectives by going to http://www.doe.k12.ga.us/qcc/asl . This is the website for the Quality Core Curriculum of the Department of Education of the State of Georgia. This state permits students to take ASL as one of their foreign language objectives. Three levels of objectives are available. Use this as you would any other checklist.

Reading Comprehension

Traditionally, the way we evaluate reading comprehension is to give the student a standardized test (e.g., K-TEA, Reading Mastery, SAT-HI) in which the student must read a passage then answer some questions. This is the typical way in which we determine a child's grade level reading comprehension. Alternatives to examining reading comprehension in deaf students are necessary. Three commonly used approaches are:

a. informal reading inventories (see handout on Self-Assessment)
b. retelling (providing details, sequencing, and summarizing)
c. conversational evaluation through question and answers procedures

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The previously mentioned *Toolkit* contains a tool for examining a student's skills at retelling a story. This is commonly used in schools for the deaf.

Pre-reading, Reading, and Post-reading Strategies Repertoire

It is also helpful to gather as much information as you can about the available repertoire of reading strategies that a student uses. Metalinguistic reading strategies include those related to:

a) activation of prior knowledge,

b) knowledge of story structure and themes,

c) prediction and inference based on activation of prior knowledge

d) activating mental imagery based on prior knowledge, visual cues, and information accumulated from the text

e) summarization skills (what the story is "about")

f) self-monitoring of understanding (clarifying misunderstandings)

See the self-assessment tool in the appendix of this paper.

Spoken or Signed Fluency (as an indicator of comprehension)

One indicator that a child is reading fluently is that he sounds or looks to be reading fluently. We will present a process of analyzing fluency later in this presentation.

Word and Sentence Writing Skills

While we think of the conventions of writing as somehow separate from the task of reading, in fact, they provide the reader with a wealth of information to assist in

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comprehending a passage. For example, spelling, knowledge of sentence components; capitalization and punctuation; and other written discourse devices provide certain boundaries for the reader that impact comprehension. An evaluation of the student's written language skills is an essential component of an overall reading/literacy assessment. Many such devices, such as the OWLS, are commonly available in the public schools.

Knowledge of Writing Stages

As with the conventions of writing, the greater ones knowledge of the overall writing process, the more one can bring to the reading process. A comprehensive literacy evaluation would include an assessment of the student's knowledge of the writing process itself. This includes an understanding of the stages of writing from drafting, sharing and editing, to revising and publishing. This requires that the teacher engage the student in the writing process from start to finish, documenting the student's skill at each stage of the writing process through production of authentic written products.

A Reading Fluency Screening Tool for Students who are Deaf and Hard of Hearing

Why is a fluency screening tool needed?

Reading fluency in students with hearing losses has long been overlooked. This may be due to the common belief that fluency is an auditory process. In fact there are many visual components to fluency that can benefit the deaf reader. Skilled deaf adult readers call upon many visual tools, in addition to signs and speech, to elucidate the

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meaning of text (Schleper, 1997). Below we present a fluency-screening tool that can be used with signing deaf students. The purpose of this tool is twofold. The first purpose is to examine the processes that are occurring internally while a student reads. The best way to know what a student is doing in his head is to ask him to show it to you orally or in sign. An examination of his skills will allow you to provide appropriate intervention to improve fluency, leading to improved reading comprehension. Second, all individuals are at some time called upon to "read aloud" whether in a social situation, at work, or in a school setting. For students who are deaf, this presents additional challenges because they must translate printed English to a visual form. Whether they are reading for a deaf audience alone or using the services of an interpreter, they must have a fluent representation of the written material or the meaning of the content is lost to the viewer. Though some components of reading fluency in students who are deaf can be evaluated by hearing standards, the majority cannot, due to the unique components that are added when the student is signing, whether English or ASL. We have developed this screening tool to provide teachers with a format for comparing fluency traits in children with those exhibited by fluent adult deaf readers.

How was the screener developed?

After spending many years teaching students at the middle school level and struggling with why they experienced such challenges in comprehending print materials, Sandy decided that she needed a new approach to examining their reading. While taking a course in reading with Susan, we discussed this need. We agreed with Zutell and Rasinski (1991) who stated that instruction in word recognition, vocabulary development,

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and comprehension, typical goals of basal readers, were not enough. They felt that fluency is treated as an "outcome" of basal reader goals "rather than a contributing factor" (p.211). This led us to examine the concept of reading fluency. We discovered that the only tools available were based on a model of oral reading. We decided to take a different tack and looked at what skilled deaf adults did when they read aloud. We chose a representative sample of children's stories at 6 different levels from The Story Box (The Wright Group) series. These stories range in complexity from Kindergarten through Grade One in the following order: My Home, No, No, What A Mess!, Sleeping Out, Look For Me, and Horace. We stayed with early materials for two reasons: first, we wanted materials that would not be too challenging conceptually to the readers; that is, they would not be confounded by semantic constraints. Additionally, the purpose of this screener is NOT to determine a student's grade level but to survey the fluency tools he has at his disposal. Secondly, as we went through the process of developing the protocol we realized that the skills were the same no matter what level one was reading. If a student is able to read easy materials using fluency skills that Deaf adult reader use, then we hypothesized that he would be able to apply these skills to more difficult materials, at least after receiving instruction and practice. Skilled Deaf adult readers were taped reading stories to children. The stories were analyzed for ASL and English fluency components. Simultaneously, we developed the test protocol using the available literature (Cassell & McCaffrey, 1995; French , 1999; Gennaoui & Chaleff, 2000; Hoffmeister, 2000; Smith, Lentz, & Mikos, 1988; Lupton, 1998; Schleper, 1997), our knowledge of the reading process, and our knowledge of ASL. We observed skilled Deaf adults reading and incorporated the skills we saw into the protocol. Next, we observed 7 skilled

Deaf adults reading the books and identified the type and number of fluency devices used in each book. We devised a holistic system of classifying the reader's skills as poor fluency, emerging fluency, beginning fluency, developing fluency, and mature fluency. Finally, we field-tested the protocol with a deaf student and fine-tuned the device.

Validity. This instrument has face validity because it is based on the demonstration of skills found in adult Deaf readers. These skills are different from those used by skilled hearing readers because Deaf adults may or may not use their voice and do add a lot of information via signs.

Interrater reliability. The last step in our process is to determine whether the protocol is a reliable indicator of a teacher's ability to identify fluency traits in students. Two hearing (A & B) and one deaf (C) teacher of the deaf will watch videotapes of children reading each of the books. They will score the books independently. Using a Pearson Product Moment correlation procedure, the reliability scores will be determined between rater A and B, A and C, and B and C, respectively, to determine the degree of reliability. We will continue to modify the administration procedures until a sufficient reliability score is achieved.

What are the components of the screener?

The *Reading Fluency Screening for Signing Students who are Deaf or Hard of Hearing* has three measures: fluency envelope, internal grammatical aspects, and internal word level aspects. The fluency envelope measure rates the overall "look" of how a person is reading. It measures the traits of speed, eye contact, posture, facial expression, body movement, sign space, steadiness, stiffness, and smoothness of sign movement. It

uses a rubric assessment process for evaluation. The internal grammatical aspects measure evaluates visual components of reading specific to the text. The internal word level measure evaluates semantic, morphologic, and cheremic skills specific to the text.

How do you use it?

In order to use this screening tool, you will have students read one or more of the selected books. You will videotape the child has he or she reads the book. You will then use the rubrics, lists, and scoring charts to identify the skills the child performs. Prerequisite skills for the evaluator are at least intermediate ASL skills (not CASE or SEE) or an available, qualified, certified interpreter with whom to collaborate.

How do you score it?

Scoring procedures are identified right on the protocol to assist the scorer. The scorer watches the videotape for each of the three subtests. Subtests may be administered separately.

What do the results mean?

While an overall holistic score is available, the benefit of the test is that you can look at the internal features of fluency that the child does not possess and can institute appropriate interventions to improve performance in these areas. Once you determine the area in which a student needs improvement, develop activities to promote skill development. Below is a list of suggested activities. The list is by no means comprehensive but, instead, is intended to get teachers thinking along appropriate lines.

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Semantic Interventions:

- Study English multiple meanings and idioms (in context and out of context)
- Play "How many English words can you match with this ASL sign? How many ASL signs can you match with this English word?
- Teach students to use the dictionary (computer and book)
- Engage in formal study and games with synonyms and antonyms.
- Study ASL idioms.
- Read English stories and watch videos of ASL interpretations.
- Study riddles that involve multiple meanings daily.
- Use comic strips.

Syntactic Interventions:

- Provide specific instruction in ASL grammar.
- Use ASL grammar videotapes
- Engage students in conversation time with deaf adults, hearing adults, and other deaf students.
- Study English grammar patterns in formal and in contextual situations.
- Read, read, read.

Pragmatic Interventions:

- Spend sufficient conversational time with deaf adults, hearing adults (using an interpreter), and other deaf/hearing students.
- Plan interactions with school administrators (using an interpreter as necessary).
- Engage students in formal study of Deaf culture compared with hearing cultures.
- Foster socialization with other Deaf groups from other schools.

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- Attend Deaf special events.
- Read for an audience.

Morphological Interventions:

- Study English root words, prefixes, and suffixes in isolation and in context.
- Combine with instruction of morphological constructs in ASL (e.g., agent addition in signs such "teach-er".)
- Root word, prefix, suffix scavenger hunt in newspapers, scientific magazines (National Geographic World), etc.

Cheremic/Phonological Interventions:

- Engage in adult-mediated peer feedback.
- Have students watch and self-critique a videotape of their own signed presentations.
- Read for an audience
- Read with a voicer (interpreter). Follow up with formal voicer feedback as to intelligibility/unintelligibility.
- Socialize with other Deaf school groups.
- Attend Deaf special events.

Summary

The process of evaluating the literacy skills of students who are deaf and hard of hearing is complicated, time-consuming, and labor-intensive. It requires on-going monitoring in order to provide routine feedback and revisions to intervention. A literacy assessment involves the following:

- Examinations of ASL and English,

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- Appropriate General Education Objectives in Language Arts for Child's Level
- Concepts About Print and the Reading Process
- Word Knowledge
- Sentence Level Knowledge
- Reading Comprehension
- Pre-reading, Reading, and Post-reading Strategies Repertoire
- Spoken or Signed Fluency
- Word and Sentence Writing
- Knowledge of Writing Stages

In addition, an in-depth examination of the area of reading fluency was presented. The speakers have developed a reading fluency protocol that looks at three areas: fluency envelope, internal grammatical aspects, and internal word level aspects. A procedure for assessing fluency skills in each area was discussed. Suggestions for the development of fluency skills were given.

(Copies of the protocols will be available from the authors upon completion of the inter-rater reliability procedures and upon written receipt from the publishers of the children's book used.)

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