"So Much Potential in Reading!"
Developing Meaningful Literacy Routines for Students With Multiple Disabilities

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Josh is a first grader with a winning smile and an enthusiasm for school. He loves books and being read to and giggles at funny parts of a story. He is a child with multiple disabilities. Born with cortical visual impairments and cerebral palsy, Josh uses a power wheelchair for mobility and recently began using an assistive technology device for communication. He needs many adapted instructional materials and augmentative equipment designed to meet his needs in his first-grade inclusive classroom. Josh was introduced to letters and their sounds and recognizes many of them. However, when it came to literacy instruction, his teachers were unclear how to proceed and did not have an ongoing focus or goal. His “literacy instruction” involved isolated sight word and phonics instruction that seemed to leave Josh disinterested when it came time for reading.

Children with multiple disabilities, like Josh, often experience challenges in communication, mobility, and learning. Despite these challenges, substantial research exists that documents successful educational methods and strategies for these students. Specifically, students with multiple disabilities have successfully been taught to use a voice output communication aid (VOCA) to initiate play with peers in inclusive classrooms (Cosbey & Johnston, 2006), to make choices of preferred activities (Stafford, 2005), and to communicate using picture symbols (Lancioni et al., 2007). Most recently, research has shown that students with complex communication needs show improvement on word identification, developmental spelling, and expressive communication skills when provided systematic, sequential phonics instruction in combination with instruction in the use of augmentative communication (Hanser & Erickson, 2007). Unfortunately in many of today’s schools, students with multiple disabilities face learning challenges that, combined with teachers’ lack of training and experience, too often result in a lack of quality literacy programs for these students. Research also indicates many educators hold low expectations for students with multiple disabilities with regard to developing literacy skills (Kliewer, Biklen, & Kasa-Hendrickson, 2006). According to Erickson (2003), only 10% of students with multiple disabilities use augmentative or alternative communication when learning to read above the second grade level. This population is also the least likely to learn to read without intensive, explicit instruction focused on literacy abilities and needs (Browder, Ahlgrim-Delzell, Courtade, Gibbs, & Flowers, 2008).

A call for increased access to the general education curriculum, advances in instructional and assistive technology, and improved methods for literacy instruction (Erickson & Koppenhaver, 2007) should encourage the development of quality literacy programs for learners with multiple disabilities. But what might literacy instruction look like for a learner with significant disabilities? What types of text, materials, and approaches work well for students with these types of challenges? What types of literacy activities and routines can students participate in within the general education classroom? How often might instruction occur? More research is needed in the area of literacy instruction for students with multiple disabilities, but for teachers that are willing to develop meaningful literacy routines for their students, the rewards are immense. This article describes literacy routines developed and implemented with three elementary students with multiple disabilities. A literacy framework, literacy lesson plans, instructional materials, and technology applications are highlighted.

Students with multiple disabilities face learning challenges that, combined with teachers’ lack of training and experience, too often result in a lack of quality literacy programs for these students.

Why Literacy Matters for Students With Multiple Disabilities

Consider this strong rationale for literacy instruction for students with multiple disabilities:

- Literacy provides powerful tools for teaching speech, language, and communication.
- Literacy is a means of accessing information about our world.
- Literacy offers access to independence and future employment.
- Literacy serves as a leisure activity throughout life.
- Literacy is what many self-advocates express as a missing element in their schooling.

Some students with multiple disabilities will not become proficient or advanced readers. However, it is important that educators provide literacy instruction and allow students to progress to the highest level that they can achieve.

Teaching Literacy Skills to Students With Multiple Disabilities

A Literacy Framework

To make the most of literacy instruction, a framework should be used as an efficient planning tool for the teacher and a daily routine should be established that allows for predictability for the students. Emerging research on literacy practices for students with significant disabilities (Erickson & Koppenhaver, 2007; Schnorr & Fenlon, 2008) confirms that this population of students benefits from the same literacy practices as typically developing youngsters. These practices include print concepts, familiar or self-selected

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**Table 1. Literacy Framework and Lesson Plan Formats**

<table>
<thead>
<tr>
<th>Guided Reading</th>
<th>Structured Shared Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print concepts</td>
<td>Print concepts</td>
</tr>
<tr>
<td>Familiar reading/self-selected reading</td>
<td>Familiar reading/self-selected reading</td>
</tr>
<tr>
<td>Working with words/phonics</td>
<td>Working with words/phonics</td>
</tr>
<tr>
<td><em>Child reads</em> new book (minimal support)</td>
<td><em>Shared reading</em> of new book (teacher reads and provides high support; &quot;echo reading&quot;)</td>
</tr>
<tr>
<td>Discussion/comprehension/questions</td>
<td>Discussion/comprehension/questions</td>
</tr>
<tr>
<td>Writing connection/reader's response</td>
<td>Writing connection/reader's response</td>
</tr>
</tbody>
</table>

*Note. Adapted from Maximi&acirc;ng Literacy Instruction for Students With Moderate and Severe Disabilities,* by R. Schnorr and A. Fenlon, 2008, available at www.inclusion-ny.org

Assessment of Current Skills

Before beginning instruction, it's important to determine what literacy skills students currently have. Many students with communication challenges (e.g., articulation difficulties, students who are nonverbal) need assessment materials presented in alternative ways in order for them to demonstrate what they know. A student who is nonverbal will need letter or word cards from which to choose. For example, to assess the student's letter or letter sound recognition, two to four letter cards can be placed in front of the student with the request, "Where is Bl or "Where is the letter that makes the Bbbbb sound?" The student may need to point to the correct choice or use eye gaze or an assistive technology device with scanning to indicate the answer. The same format could be used for sight word assessment, putting words from the Dolch (1948) or Frye (2000) word lists on separate cards or on an assistive technology device. It is helpful to know the student's knowledge of concepts of print (e.g., how to hold a book, which page carries the title/author, text moves from left to right, and printed words carry a message). Students who know alphabet letters, letter sounds, some sight words, simple Consonant- Vowel-Consonant words, and simple reading strategies (look at the picture to figure out the unknown word) are ready for a Guided Reading format. Students who do not know all the alphabet letters/sounds, who have no sight word base or reading strategies, and are still learning concepts of print, will have the most success with a Structured Shared Reading format. Both formats offer multiple opportunities to develop literacy skills.

Accessibility of Text

Increasing the accessibility of traditional books makes using and enjoying reading much more likely for children with multiple disabilities. For example, a child with limited fine motor control may be more able to turn the pages of a book when it is reinforced with "page fluffers," stiff foam or cardboard pieces attached to the corners or sides of the pages, or when the book has been taken apart and reassembled in a photo album with thick easy-to-turn pages. Other students enjoy accessing books in digital format, from web-based libraries such as www.tumblebooks.com and www.setbc.org (see box "Web Resources"). One recently developed literacy site (www.tarheelreader.org) offers thousands of free teacher- and student-created digital books on a wide variety of topics (e.g., animals and nature, math and science, alphabet, people and places). Although Internet access is necessary to create books, they can then be downloaded in PowerPoint, Impress, or Flash format. Each book can be speech enabled, with a choice of three voices, and may be accessed using multiple interfaces, including touch screens, IntelliKeys™, and adaptive switches. The site was developed collaboratively by the Center for Literacy and Disability Studies and the Department of Computer Science at the University of North Carolina at Chapel Hill. Another exciting feature of this site is the "Write a Book" feature that allows users access to the extensive www.Flikr.com photo library. Writing a book on this site (www.tarheelreader.org) is a motivating method for engaging beginning or reluctant writers. For example, a student who likes Disney characters can type in "Disney" in the Flikr search bar and many photos will be displayed that can be used as writing prompts. By clicking on a picture, the student essentially creates the first page of his or her book. Choosing subsequent pictures becomes the additional pages of the book. Each page contains a text box where the student can enter the narrative of the book. A spell-check function is built in. The student may preview his or her book and then publish it on the web site. There is an interesting feature on the web site that tracks where books are being read throughout the world, complete with a

**Web Resources**

- www.ablenetinc.com
- www.tumblebooks.com
- www.mayer-johnson.com
- www.setbc.org
- www.tarheelreader.org
The following lessons plans for students similar to Josh highlight how the proposed literacy framework can be used and adapted based on the unique needs, abilities, and priorities of individual students.

I. Structured Shared Reading of a Digital Book Using an Adapted Mouse

Student: Ian; Book: One Duck Stuck, by Phyllis Root (1998) on www.tumblebooks.com

Ian is a happy, first-grade student, who enjoys books and interacting with his peers. He has cerebral palsy and cortical visual impairment, is legally blind, and requires books and materials with high contrast text and pictures, colored backgrounds, and borders. Ian is able to answer yes/no questions with verbal prompts. He is able to recognize all lower case alphabet letters and sounds and is working on recognizing upper case letters. He knows basic sight words such as see, I, me, my, a, the, and go and is able to point to a picture on a page in a story, given verbal and physical prompts. Ian needs an adapted mouse to access the computer (see Figure 1). The adapted mouse has a large track ball that controls the cursor and is easier to manipulate than a traditional computer mouse.

Some Sample Literacy Lesson Objectives for Ian:

- Ian will be able to answer comprehension questions relating to the story.
- Ian will be able to identify words that rhyme by pointing to the correct word when given two choices.
- Ian will be able to identify beginning sounds of words by pointing to the correct letter when given two choices.

Book Introduction (Activate background knowledge, picture walk). This lesson can be conducted in the general education classroom during the literacy block. Begin the lesson by telling Ian that he will be reading a book called One Duck Stuck. This book is in digital format on www.tumblebooks.com (teacher shows the cover of the book while asking him to point to the duck). Then, a picture walk of the book occurs by turning the pages and looking at the pictures. Ian is told that the duck gets stuck in the muck and that muck is the same as mud. The teacher shares that different kinds of animals try to help the duck out. At this point, the teacher asks Ian some questions to activate his background knowledge, such as, “Have you ever seen a duck? On a farm? At a lake or pond? What sound does a duck make? Does it quack or does it bark?” Ian and the teacher look briefly at the pages of the book and continue to read to find out if the duck gets out and which animal is able to help him.

Support During Reading (How will student read/participate? How will you support?). During reading, the teacher supports Ian by pausing every other page and asking him to point to animals, numbers, and letters on the page. For example, “Ian, can you point to the number 7?” or “Ian, can you point to the fish?” If needed, partial physical assistance is provided for pointing and using the adapted computer mouse. The teacher then stops and asks Ian to make the letter sounds that are used, such as /s/. “Ian, they said snakes. Can you make the /s/ sound? Point to the letter /S/.” Ian is provided partial physical assistance, if needed.

Discussion (Have a conversation about the book). After reading the book on the computer, the teacher and Ian move to a table in the classroom to reduce distractions while talking about the story. Ian is asked yes/no questions relating to the book, such as, “Ian, was there a bear in the story? Yes or no? Did the duck get out of the muck? Yes or no?”

Working With Words. Next, Ian is asked to identify rhyming words from the book and is shown three words with pictures (sticky, skunk, trunk). Each word is then read to him and he is asked to point to the word that rhymes with trunk. If needed, verbal prompting or modeling is provided. Then, Ian is asked to say a word (duck) and is shown two letters, D and L. Ian is asked to show which letter duck starts with (the teacher emphasizes the D in duck, and repeats the

![Figure 1. Adapted Computer Mouse](Photo courtesy of Ablenet, Inc.)

Some Sample Literacy Lessons/Routines

Just as typically developing students do, students with multiple disabilities need daily literacy instruction and meaningful routines to gain skills and make continued progress in literacy. The following lessons plans for students similar to Josh highlight how the proposed literacy framework can be used and adapted based on the unique needs, abilities, and priorities of individual students.

Note: The Picture Communication Symbols ©1981–2009 by Mayer-Johnson LLC. All Rights Reserved Worldwide. Used with permission. Boardmaker® is a trademark of Mayer-Johnson LLC.
question). Ian then is asked to do the same for other words from the story using foam letters.

Writing Connection (student participates in a brief writing or reader's response activity related to the text). Ian completed a Reader's Response (see Figure 2) using a marker or bingo dabber to indicate how he liked the book.

II. Structured Shared Reading Lesson Using BIGmack Switch

Student: Nicholas; Book: *The Very Quiet Cricket*, by Eric Carle (1997)

Nicholas is a third-grade student with multiple disabilities who loves books and being read books aloud. Nicholas has limited language but communicates by vocalizing (laughing, saying "yeah," crying, smiling) and using eye gaze. He uses eye gaze to communicate a preferred activity and to answer "Yes" or "No" with communication cards. He recently began using a BIGmack Switch (see Figure 3) with single message voice output. Nicholas needs positioning to ensure that he is able to see the book at all times. Because he has difficulty with fine and gross motor movements, he requires adaptations to access books, such as page fluffers or taking apart and reassembling it into a photo album with stiff pages.

Some Reading Lesson Objectives for Nicholas:

- Nicholas will participate in shared reading with the teacher using a BIGmack switch, with prerecorded lines from book.
- Nicholas will discriminate among three pictures of insects/words.
- Nicholas will answer yes/no questions from the story.

Familiar/Self-Selected Reading. Nicholas is given a choice of two familiar reads: *Our Summer Vacation* or *Christmas 2008*; he chooses by eye gaze or pointing which one he would like to read. Both are teacher-made books using digital pictures from home and predictable text. The teacher reads the book to Nicholas while he attends to the reading.

Working With Words/Pictures. The teacher has copied pictures of insects with text underneath. She/he says "We're going to read a great story about a cricket that is learning to sing. The book has other insects in it too. Here are some of the insects in the story. I want to see which ones you already know!" Nicholas is then shown or told about each of the insect pictures. He then uses eye gaze or points to the cricket picture from a choice of two pictures, two to three times.

Book Intro (Summary, activate background knowledge, picture walk). Nicholas is shown the book, *The Very Quiet Cricket*, with visual cues (a pink Post-it with a picture of the noisy cricket on it) placed on pages to cue him that it's his turn to read. The teacher uses partial physical assistance and modeling to show Nicholas how to activate the BIGmack switch so that the repeated line of text from the book can be read when it is his turn. A peer has pre-programmed the BIGmack switch ahead of time by reading the line "The little cricket wanted to answer, so he rubbed his wings together. But nothing happened. Not a sound." so that Nicholas will hear the sound of a friend's voice. The teacher continues to turn the pages in the book showing Nicholas all of the pink Post-its and explaining to him that those are all the times that it will be his turn to read. The teacher asks questions to stimulate background knowledge, such as "Have you ever seen a cricket outside? Have you heard them sing?, and Do you like crickets?" Nicholas's yes/no picture symbols are used to allow him to respond either by eye gaze or pointing with physical prompts if needed.

Support During Reading. The teacher begins by reading the book to Nicholas, allowing him to partially participate in the turning of the pages. Nicholas is verbally prompted to take his turn reading using the BIGmack switch. "Nicholas, look at the picture of the cricket, that means it is your turn to read." The teacher allows wait time if necessary, and then proceeds to point to the corresponding picture on the BIGmack and says, "Press the button to read your part." If necessary, physical assistance is provided and is gradually decreased to visual and gestural prompts. Eventually, the teacher simply points to the pink Post-it picture when it is Nicholas's turn to read.

Discussion. During the reading of the book, the teacher continues to discuss with Nicholas the different insects in the book. She points out certain characteristics of each insect as well as the colors and shapes in the pictures using appropriate vocabulary and ensuring that Nicholas is looking at the image. To assess Nicholas's comprehension, the teacher asks questions such as: "What insect do you like better, the bee or the grasshopper? What animal is green, the grasshopper or the butterfly? Which page has the bee on it?"

Writing Connection & Reader's Response. The teacher has preconstructed two sentence starters on card stock or sentence strips: *My favorite insect in the story was the _____ and I didn't like the _____ and precut pictures/text of the different insects in the story (praying mantis, bee, spittlebug, worm, cricket). The teacher presents the first sentence and reads it aloud to Nicholas, pointing to each word as she reads it, stopping at the end and presenting the different pictures of the insects and asking, "What was your favorite insect in the story?" The teacher encourages Nicholas to use either eye gaze or pointing to indicate his choice, then re-reads the sentence with Nicholas's choice. This process is repeated for the other sentence.
III. Structured Shared Reading & Writing Lesson Using www.tarheelreader.org

Student: John; Book: Dinosaurs by John (digital book)

John is a second-grade student with autism. He uses a few words and phrases to communicate spontaneously and, in addition, uses picture communication boards. He enjoys books, especially nonfiction books on dinosaurs, animals, and weather. John is an emergent reader who knows all letters and letter sounds, most first-grade sight words and demonstrates good receptive language. He is 90% to 100% accurate in pointing to pictures/text when asked specific comprehension questions during and after reading a nonfiction book of his choice. John has just been introduced to using the reading strategies of “looking at pictures” and “looking at the first letter” to solve unknown words.

Some Sample Literacy Objectives for John:

- John will select pictures to include in his book from a choice of photos.
- John will be able to identify the following words: I, dinosaurs, love, run, fly, eat, from, eggs, come, fast, grass, can.
- John will use correct conventions (capitals, periods) in his writing.
- John will answer comprehension questions with 90% to 100% accuracy, following the reading of his book.

Familiar Reading. John will read a familiar book, Dinosaurs by mackat888 from www.tarheelreader.org. He will be expected to read the book in silent mode, but may read with the speech-enabled feature a second time.

Print Concepts and Working With Words. John’s teacher tells him that today he will create his own book on dinosaurs that he can read and share with his friends, teachers, and family members. The teacher then introduces/reviews with John the concepts of author and illustrator. Then the teacher shows John pictures of an author and illustrator and asks him to point to them when asked, “Who is the person who writes the book?” and “Who is the person who creates the pictures for the book?” The teacher then shares with John that he will become both an author and illustrator today by writing his own book on www.tarheelreader.org.

The teacher has preselected words at John’s current reading level that he will include in the book. These words are prepared on index cards. The teacher says, “John, before we get started with your book, let’s review some words that we might use when writing your book. Remember that if you don’t know the word, you can always look at the first letter and get your mouth ready to say the word.” The teacher quickly models this strategy for John with the word “can” and has John say the words as they are presented on cards. If John struggles, the teacher encourages him to use the strategy of looking at the first letter and getting his mouth ready. If he makes an attempt to use the strategy, but still struggles, the teacher then tells him the word. The teacher keeps the word cards near the computer for use during the writing part of the lesson. If John struggles with saying the words, the teacher allows him to point to the correct word from a choice of two words.

Shared Writing of the Book. The teacher registers in advance at www.tarheelreader.org to be able to use the “Write a Book” feature. John is asked if he wants to write about dinosaurs or animals, and he begins typing into the site. The teacher has picture/text cards nearby so John can refer to them as he edits with John, talking through each change (e.g., “Oh, I see you’re missing a period here. Can you put it in?”). The teacher concludes by publishing the book on www.tarheelreader.org and showing John the published book. She tells him how proud she is and that everyone can see his first published book!

Discussion/Comprehension. To conclude the lesson, the teacher asks John some questions about his book such as, “Show me the dinosaurs that are eating, flying, running? Which dinosaur was the largest? Smallest? Point to the words: egg, dinosaur, love, grass. Do dinosaurs still exist today?” John’s book was subsequently downloaded as a Power Point presentation, laminated and bound, and...

If John struggles, the teacher encourages him to use the strategy of looking at the first letter and getting his mouth ready.
installed in the school library with a barcode.

**Conclusion**

We now know that students with multiple disabilities benefit from many of the same literacy practices as typically developing youngsters, especially when special educators can make text accessible, use assistive technology, and carefully consider student interests, abilities, and literacy priorities. Students with multiple disabilities deserve quality literacy instruction on a daily basis to maximize their potential and to reap the rewards of increased literacy skills.

This article provides teachers a literacy framework, assessment ideas, sample lesson plans, and valuable literacy instructional resources that, if implemented, could greatly enhance literacy programs for students. For more detailed information on the literacy framework, stages of literacy development, and developing classroom literacy programs that serve all students, see **Maximizing Literacy for Students With Moderate and Severe Disabilities** (an EBook on literacy practices, sponsored by the New York State Education Department and Higher Education Support Center; available at www.inclusion-ny.org).

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