VIBRATIONS

NEWSLETTER OF COLORADO SERVICES FOR CHILDREN WHO ARE DEAFBLIND

Serving Children with Combined Vision and Hearing Loss (Deafblindness), Their Families, and Service Providers

Modified Fall 2005 Edition: Focus on Literacy, with Particular Focus on Writing Skills

This is an edited version of the original newsletter. Only articles pertinent to literacy have been retained as resource information. If you copy of any of the content of this modified newsletter, please credit the original source.

ALL Students Need to be Writers

by Margaret Cisco, Education Specialist, SESA,
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To write is to put symbols or images on paper to communicate thoughts. Written communication is used in to-do lists, day planner, journals, letters, email, completed order forms, hand-drawn maps, or printed reports. A student does not have to be a novelist to be writer - few are. Yet most students learn to write well enough to function in the world because schools teach them how to compose messages in written format.

Writing instruction begins in kindergarten even though students cannot form letters well and do not know how to read or spell, yet students with cognitive or physical disabilities are frequently excluded from writing instruction throughout grade levels because they cannot speak, cannot read, or cannot use a pencil. This is true even though it is now clear that listening, speaking, reading and writing are interrelated skills and that growth in each of these skill areas is supported by growth in the others. In fact, students with disabilities need writing instruction because engaging in writing will support development of their speaking, reading and listening skills. For example, one student with a disability may begin to either use speech or to use clearer speech as a result of learning to read while another may begin to speak more with a communication device as a result of writing.

In today's classroom, "process writing" means teaching students to be effective writers by having students engage in writing. The teaching focus is the process or stages used to create quality content, not just the final piece of written work. Process writing stages are prewriting, first draft, revision, editing, and publishing. Students are taught to move fluidly back and forth between stages as needed, while they actively develop an effective piece of writing. The emphasis on process means that students of any age or developmental stage can learn to be writers. Students develop ideas that are personally relevant and use many different writing tools from sticky notes and stamps with pictures, to pen and paper to computer. With the new teaching and learning emphasis, students with disabilities can participate in the writing process with writing tools that give them access. Given the right tools, there is no reason to exclude students with cognitive or physical disabilities from classroom writing instruction.

Pairing Modeling Writing with Assistive Technology

by Margaret Cisco, Education Specialist, SESA,
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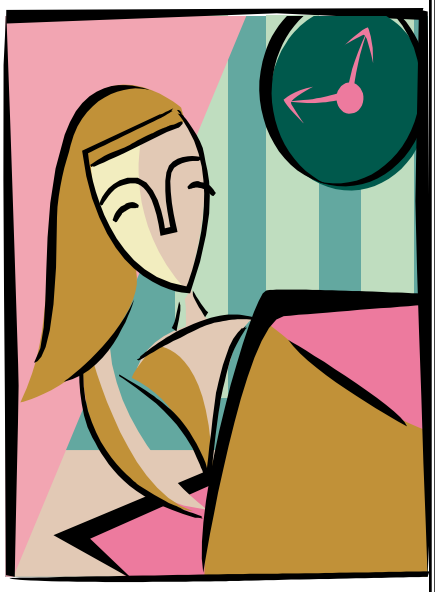


Remember that giving assistive technology (AT) to a student will not result in a student being able to write effectively any more than giving a student pen and paper results in a student who can write. To become effective writers, both students will need to participate in the same learning activities about the writing process: selecting a topic, writing a draft, revising, editing, and publishing. The difference is the writing tool they use.

As an example, one teaching procedure is "modeled writing." In modeled writing, the teacher demonstrates the process of writing by thinking aloud as she composes text in front of students. This allows the teacher to demonstrate the thinking that is used in the process of writing. Students can hear the teacher make decisions about selecting a topic, how to start, looking for a better word, and using correct spelling and print conventions such as punctuation.

For a student who uses AT for writing, the teacher needs to model writing using the student's technology. By using the student's technology, the teacher will be supporting the student's use of technology within the writing process. For example: using the technology to find the vocabulary on the device, word choice, and using tool bar items such as <read all, erase, and print>. The teacher will explicitly describe the thinking process used when using the AT and computer to look in a topic bank to choose a topic for writing then write several sentences about the topic modeling how to find words, how to spell, how to erase, and how to have the computer read back the text. When the writing is finished, the teacher will scroll down so the student cannot see what the teacher has written. The student will then use the same technology to compose (not copy) several new sentences. This is a first draft so the teacher will not cue for grammar, punctuation, or syntax. These tasks will come in the later stages of the writing process.

References: Adapted Stories, [Online]. (© 2004 Creative Communicating) Available: www.AdaptedStories.com

WRITING CONSIDERSATIONS

By Kathryn W. Heller, Ph.D., professor, Georgia State University and Dawn Jones-Swinehart

Some students with physical disabilities will have difficulty using a pencil (or pen) and paper due to their physical disability. Some students will benefit from using a particular writing tool (e.g., a felt tip pen that glides easier than a pencil and that is darker). Sometimes the pen or pencil can be modified, such as using a pencil grip. There are a variety of pencil grips that may help the student hold onto the writing utensil and have more control over it.

Some students will benefit from an adapted writing tool. Pens and pencils are made with larger grip surfaces, different configurations, or added weight. Some students may wear a brace that helps hold the pen or pencil in place.

Some students may also need to hold the pen or pencil in a modified fashion. This may consist of holding the pen with a different grip. In some instances, the student may hold the pen with a different body part as seen in writing with a mouthstick and slant board.

Writing with a Mouthstick and Slant Board

This student is using a mouth stick in conjunction with a slant-board to writ a paper. These devices are used for students with limited or no movement or control in the arms.

The slant board is adjustable to different heights to prevent the slant board from moving, it is sitting on a piece of non-slip material, known as Dycem. Sometimes adapted paper may be used that has wider (or darker) lines.

Another modification is adapted paper. Some students will benefit from darker lined paper or raised line paper. Sometimes the spaces need to be larger to help accommodate the student's needs. Students who have poor handwriting often benefit from additional handwriting instruction. Student's current handwriting should be closely observed for size, proportion, slant, alignment, spacing, and joining of cursive letters. There are several different handwriting programs available that may be used (e.g., Handwriting without Tears; www.hwtears.com). Some software programs are also available to provide custom made worksheets with dotted lines (or arrows showing which way to trace) to provide additional instruction (e.g., School Fonts by Mayer Johnson; www.mayer-johnson.com).

Some students may not be able to use pen and paper or their handwriting may be poor. Teaching keyboarding skills early will then be important. However, due to these students' physical disabilities, modifications may be needed to make the computer accessible.

Computer Access

Some students will have difficulty using a standard keyboard and mouse. When that is the case, there are many different types of modifications:

1. Typing on the computer/letterboard using a different body part

Some students may be able to type on a keyboard, but not with their hands. They may use a mouthstick or other device.

2. Accessibility Options on Computers

Operating systems on computers come with various accessibility options that can aid individuals with physical or sensory impairments to more easily access the computer. In Windows, the Accessibility Options are found under the Control Panel. One example found the Accessibility Options file in Filter Keys. (Filter Keys allow Windows to ignore brief or repeated keystrokes or slow the repeat rate).

3.Keyboard Modifications

The typical keyboard that comes standard with computers can be modified. For example, labels can be placed over the keys that have dark bold letters on a white background to make the letters easier to see. A keyguard (plastic cover with holes over the keys) can be attached to a standard keyboard to allow students with physical disabilities to drag their hands over the keyguard until they arrive a the letter they want. They then can push their fingers through the hole to depress the key on the keyboard.

4. Alternative Keyboards

There are many different types of alternate keyboards. Some appear similar to standard keyboards, but come in different shapes and sizes. Other keyboards may not be recognizable as a keyboard and require specialized training. The following pictures show examples of large and small alternative keyboards.

Large Alternative Keyboards

Some students with physical disabilities can access a computer best by using a large alternative keyboard. Some keyboards, such as an Intellikeys, can be programmed to use different keyboard arrangements and symbol configurations. Others can only be used as a keyboard. In the picture, a student is using Big Keys, a large alternative keyboard that enables her to access a computer word processing program. It has large letters and highly contrasting keys making it good for younger students or those with vision or perceptual difficulties.

Small Alternative Keyboards

Students with limited range of motion are able to access a computer by using a small alternative keyboard. In this picture, a student is using a TASH MiniWin keyboard. A key guard is attached to assist with accuracy, reducing unintended key activation.

5. On Screen Keyboards & Alternative Input Devices

Reach: An On Screen Keyboard

This student is using an onscreen keyboard in conjunction with a joystick to access a word processing program. An on-screen keyboard allows users with limited motor control to move a cursor across the screen via alternative access and click on the appropriate key to create words and sentences. This particular program includes a letter prediction feature. After typing a letter, the keyboard will display only the letters that can reasonably follow. This feature enhances speed and accuracy of the

typist.

Touch Monitor and On Screen Keyboards

This student is using a touch monitor to access computer software. The touch monitor allows the user to directly touch the screen in place of using a mouse. This may be combined with an on screen keyboard or software program that uses a mouse.

Using One's Own Eyebrow to type with an On Screen Keyboard

This student is typing a message using her eyebrow! The on-screen keyboard (EZ Keys by Words+ www.words-plus.com) highlights blocks, rows, and individual letters depending upon what the student selects. Selection of the block, row, or individual letter is made by the student moving her eyebrow, which has a small switch that detects motor movement mounted under a headband. The program includes word prediction that displays words starting wit the first letter(s) so that the word can be selected without having to type it out completely.

6. Voice Recognition Software

Voice recognition software allows the user to speak into a headset or microphone instead of typing by hand. The software converts the voice to text. It provides students with limited motor skills and/or processing problems an alternative means of computer access and control.

7. Screen Readers

Students with visual impairments may require software programs that read what is on the computer monitor. Several such programs are available .
JAWS (www.freedomscientific.com) is one example.

8. *Output Modifications*

While most students will produce hard copies of their work in a typical format (e.g., on letter-sized paper in 12 point font), some student will need to print their work with enlarged print in order to red their own work. Other students may need to produce a Braille copy of their work for themselves. Both enlarged print and Braille formats can be printed in the typical method so that the teacher has a regular print copy of the student's work. A Braille embosser and Braille translation software are needed to print Braille copies of student work.

Auditory output is also available for student who have visual impairments or for students who need auditory feedback. Several programs exist that allow the reader to hear letters, words, or sentences entered into a word processing program (e.g., WriteOutLoud by Don Johnston) or hear the text as it is presented on a web page (e.g., JAWS from Freedom Scientific).

Keyboarding Skills & Tools

Keyboarding is an essential skill for any student. However, for students with physical impairments who may not be able to handwrite, keyboarding is crucial for the development of literacy skills. When possible, students should be taught to use the

standard QWERTY keyboard (so named for the first six letters of the top row) to reduce generalization problems when using a different keyboard. However, alphabetical and Dvorak (a frequency-based layout) keyboards are available. Software is available to assist students with keyboarding speed and accuracy. Three common types of software are described below.

1.Word Prediction Software

Word prediction software, such as Co: Writer, Reach, and EZ Keys, provides possible word choices as the person types. For example, if the person was writing the word "definitely" on the computer. After typing the "d" the computer may display possible word choices such as "date," "dear," "decide," and "dare". Upon typing "de" the choices will change to reflect the second letter and may display "dear," "depend," "definite," and definitely". The student can then select the displayed word instead of typing out the entire word. This is helpful for students with physical disabilities who type very slowly or for students with learning disabilities who use the word prediction to assist with sentence construction.

2.Talking Word Processors

Talking Word Processors, such as Write Out Loud, can speak letters, words, sentences, and paragraphs. It can also be set to highlight each word as it reads. It can be used to read while the student types and to read the entire document when the student is finished.

3. One-Handed Typing Programs

There are several programs designed for individuals who only have one hand. The Half-Qwerty program by Matias Corporation, for example, allows the person to keep one hand on one side of the keyboard. Upon holding the space bar, the other half of the letters are transposed on the opposite side of the keyboard. For example, if a person only had a left hand, he would keep his left hand in the traditional position. To type an "f" it would be accessed by depressing the "f" with the left index finger. To type a "j", the person would depress the space bar and press the "f" which is no a "j". Another program, called "Five Finger Typist" teaches the user how to type by placing his hand in the middle of the home row.

Spelling

In order to be truly literate, students who are unable to communicate verbally need to have the ability to spell. Even students who are highly proficient with their augmentative communication device may not have their device available to them at all times (e.g., due to hospitalizations or equipments malfunctions). Additionally, even the most capable augmentative communication device is limited in the amount of words it is able to store in memory. Therefore, a student who is able to spell using traditional or phonetic spelling has the ability to communicate words and ideas not located on the device. Spelling will be an important skill to teach, especially for students with AAC devices that need to spell out what they want to say.

Written Expression

As students gain literacy skills, they begin to formulate more complex sentences when reading or writing. Students who are nonverbal often have difficulty learning to create proper sentences because they are accustomed to being asked simple yes/no questions or questions that require one word responses. However, through direct teaching of the

necessary components of a sentence (subject/verb) as well as adjectives and adverbs, students can learn to create more complex sentences. Some tools for teaching sentence writing are provided below.

Strategies for Beginning Sentence Writing

Beginning writing depends upon learning how to construct a sentence, then a paragraph, and then a paper. Many students who use augmentative communication lack experience constructing sentences, especially when single symbols are programmed to mean complete sentences. There are several strategies that can be used to help promote beginning sentence writing.

1. **Provide a sample card of sentence**

Many students will benefit from having a model of sentence construction in front of them for reference and for the teacher to use as a teaching aid. Teachers will often have an index card with an example for easy reference that is placed where the student can see it as sentence construction is being taught. An example of a sample card with very simple sentence construction is as follows:

SUBJECT (Who/What)	VERB (Action)	PREDICATE (Object) (What its about)
I	like	Candy.
Tom	ran	home.

This beginning card is very simple and uses action verbs and simple nouns in the predicate. More complex cards can be made as the student progresses in sentence writing. These cards are often used along with one of the following strategies.

2. **Arrange the words strategy**

In this strategy, the student is given several words he must arrange in order to make a sentence. For example, the student may be given the words, “I” “music” “like”. If the student is unable to physically arrange the words, he could point (indicate) which word to start the sentence and a partner could move the word to a beginning sentence line and continue until the student has selected all of the words. Another strategy is to pair words with numbers over them. The student selects the number and a partner arranges the words in order. Typing out the words is also an option, but the emphasis is sentence construction, and typing may take a long time, depending upon the student’s physical abilities and means of access.

3. **Complete the sentence strategy**

In this strategy, the student is given an incomplete sentence to complete. The student may first be told a very short story to help her complete the sentence, or the student may make up his or her own response. Often the teacher will first have the subject missing for the student to complete (e.g., “_____ ate a hamburger”). The teacher then stresses what a subject is and possible words that could go in the subject. Often a sample card is on display as a reference. As the student learns about completing simple subjects, sentences

are give with the verb missing (e.g., "Tom ____ home"). Discussions about verbs then occur and possible verbs are given. Finally the sentence is given with the subject and verb and the predicate is missing (e.g., "Jerome likes _____"). Usually simple nouns are first introduced into the predicate. (Other orders of doing this can be equally effective. Some student do best with first being given the subject and verb and they complete the end of the sentence.) Over time, less and less of the sentence may be provided to encourage more independent writing skills (i.e., "___saw a _____"). Eventually, the student may be only provided with a topic or may need to develop one independently.

4. **Expand the sentence game**

Once a student is able to produce correct syntax and write simple comprehensible sentences, the complexity of the sentence should be examined. Some students have very few adjectives or adverbs in their sentences. One way to encourage more complex sentences is to first write out the student's sentence. Next, the teacher provides a card that lists the words, "size, shape, kind, color, how many, when, where, how, and how much." the student examines the sentence to see if it can be expanded to include any of these. The sentence is rewritten as more information is added to it. This can be done as a game in which the student makes a check by the descriptors on the card that he was able to use in the sentence and he receives points for each added word.

Strategies for Beginning Paragraph Writing

Student's sentence	Size	Shape	Kind	Color	How Many	When	Where	How	How Much	Points
(Write student's 1st sentence draft here). (Write student's next attempt here, check the columns the student used to expand his sentence & give points for each column that is checked.)										

Software is available to assist students with the process of writing paragraphs and papers. Two common software programs are Inspiration (or Kidspiration for younger students) and DraftBuilder by Don Johnston. These programs help students with the prewriting and organization of their thought through the use of concept mapping, or webs. The actual writing of the paragraph or story is supported with outlines based upon the web created.

Reprinted with permission from Heller, K.W. & Swinehart-Jones, D. (2004). Strategies for Promoting Literacy with Students who have Orthopedic Impairments. Atlanta, Georgia: Bureau for Students with Physical and Health Impairments.

Writing and AAC

by Janet M. Sturm

http://www.asha.org/about/publications/leader-online/archives/2003/q3/030909g.htm

Literacy skills can enable quality of life for all members of society—especially those who use AAC. Although reading garners the most attention, for persons who use AAC the power of orthography takes on heightened importance, opening up opportunities for sophisticated communication across home, school, community, and employment settings. Reading allows individuals to learn about the world; writing provides access to the outside world.

The complexity of learning to compose text is particularly challenging for persons who use AAC because of cognitive, language, sensory, and motor needs. Despite these challenges, evidence is mounting that active participation in context-rich instructional opportunities can result in the development of reading and writing skills. Unfortunately, access to these opportunities has been limited. There are several erroneous assumptions regarding literacy instruction for children who use AAC that may be inhibiting this access. These assumptions include:

- Evidence of prerequisite literacy skills is needed before providing literacy learning opportunities.
- Writing skills are best taught in isolated tasks such as handwriting practice, worksheets, or grammar lessons.
- Conventional writing is not possible.
- Products of beginning writers should reflect conventional spelling.
- Spoken communication is not needed during writing.
- Symbol-writing activities provide a natural transition into conventional writing.

It is important that speech-language pathologists challenge these assumptions as they work together with school teams to provide meaningful literacy learning opportunities. In our work with students who use AAC, we use best practices of writing instruction with typically developing students as our point of departure. These practices employ an emergent literacy model of development where reading and writing are integrated with speaking and listening early in life. Best practices of instruction indicate that writing skills are optimally developed in daily, meaningful writing opportunities where children are encouraged to choose their own writing topics, drawings, and writing forms (e.g., sharing opinions or retelling a story) and publish products of their choice. Children also are allowed to choose their own letter combinations and engage in invented spelling.

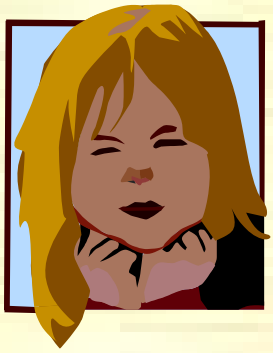
Best practices also indicate that there is an extensive amount of spoken communication between teachers and students, and among peers, throughout the writing process. This communication involves a range of topics, some of which might include sharing a new idea, discussing a new angle, or providing suggestions for improvement. Finally, evidence does not exist indicating the need for symbol writing as a first step in the writing development of children who use AAC. Whenever possible, it is important that these students be provided with access to orthography when engaged in the writing process.

Language, Communication, and Writing

While language is recognized as central to literacy learning, children who use AAC often struggle to acquire basic language and communication skills. Across language domains they frequently demonstrate significant needs, including vocabulary delays, morphological difficulties, a predominance of 1–2 word utterances, poor syntax, impaired pragmatic skills, and restricted speech acts. Given what we know about the inseparable links between speaking, listening, reading, and writing, a solid foundation in language and communication is essential to full participation in classroom writing opportunities. Development of conventional writing skills will be enhanced when children who use AAC have rich background knowledge, access to a broad range of vocabulary to express that knowledge, and the communication competence to convey their background

knowledge using a range of AAC systems.

When setting up writing experiences for students who use AAC, we can use observations of skilled writers as a point of reference. Skilled writers set goals for writing, have a sense of audience, and approach writing tasks with strategies. They spend an extensive amount of time planning, generate ideas easily, and have an understanding of a variety of text structures. The act of writing involves the juggling of multiple factors, including audience, word choice, sentence development, and text organization. Skilled writers are able to manage these multiple constraints by quickly moving among these factors while in the writing process. From their earliest writing experiences, it is critical that students who use AAC have access to instruction and technology tools that allow them to move recursively among all writing processes.



Supporting Beginning Writers

Beginning writers are persons who are in the emergent to early conventional stage. They are in the process of learning that text makes meaning. In our research at the University of North Carolina at Chapel Hill, we learned that typically developing children in kindergarten and first-grade classrooms received an average of 85 opportunities during the school year to learn how to make meaning through writing. These same students created more than 100 drawings. Most students in general education classrooms achieve more conventional writing forms by the end of first grade.

Beginning writers focus their energy on generating ideas and producing text. They use images in their head to decide what to share through pictures and words. Central to idea generation is having knowledge of the topic at hand. Beginning writers typically use drawings to plan their topic before they begin to write. They chat with each other and their teacher about what they are writing. When this beginning text is created using invented spelling, the drawing and the oral language communicated during the writing process support joint reference between the creator and the receiver.

Our research also shows that beginning writers don't focus exclusively on narratives. They choose to compose a variety of forms of emergent text structures, including text labels, opinions, and story retellings. Students who use AAC can learn about text structures through frequent readings of a variety of types of books and through teacher models that illustrate multiple purposes for writing. Revising and editing are not core components of the writing process for beginning writers. Until second grade, revision during writing involves "saying more" by adding to already-composed text. Therefore, it is not essential that children who use AAC have their writing products edited for errors by teachers at this stage of writing development.

It is important that beginning writers focus on fluent expression of ideas in text. The goal is for students to write and then write more. Students who use AAC need rich life experiences and a solid language base that enables them to share through writing. Persons who use AAC can be beginning writers across the age-span. Understanding the key aspects of early writing experiences and the qualities involved in exemplary writing instruction will allow SLPs to offer appropriate writing support for students of every age.

Colin

Colin, a first-grade student with cerebral palsy, provides insight into the development of writing supports for a student who uses AAC. Colin uses a Dynavox as his dedicated communication system and actively communicates through gestures and facial expressions. Academically, he knows his numbers, colors, and letters of the alphabet and can identify rhyme in words.

Colin is fully integrated in a general education first-grade classroom. His teacher uses a "writers' workshop" model of instruction where students choose their own topics; share and discuss with teachers and peers before, during, and after writing; and publish writing projects of their choice. Colin's teacher provides writing instruction through a series of short mini-lessons that help students pay attention to different aspects of the writing process. During a typical large group lesson, his teacher provides a model for writing by thinking aloud about her own

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writing process. For example, she may talk aloud about how she generates and chooses a writing topic. Following this lesson, students might be asked to create a folder that contains a list of possible topics for their daily writing. Mini-lesson topics take on a variety of forms, ranging from use of writing conventions to development of sophisticated text structure to selection of vocabulary.

In order for Colin to successfully participate in writing, it is important that he have access to writing tools as well as vocabulary on his AAC system. Because of physical difficulties that result in a slow writing rate, Colin will not be able to compose as many writing products as the other children in his class. It is essential that his writing tasks be carefully chosen to reflect appropriate writing development and high-quality instruction. When Colin plans his writing, he works with his parents to take and choose photographs that reflect important events in his life. These photographs will be used as his "drawings" and allow him to choose topics that reflect his knowledge and that are important to him. The photographs parallel the drawings created by his peers and fit nicely with a mini-lesson on generating and choosing topics.

To be successful during classroom writing sessions, Colin also has access to vocabulary on his AAC system that allows him to communicate with his peers and teacher. For example, he may ask a peer, "Hey, let me see what you picked," to ask about a writing topic. Composing means that Colin's "pencil" includes several AAC tools—an eye gaze frame, a Dynavox, an alternate keyboard, and an alternate mouse system.

While composing, Colin can engage in "writing" through a variety of forms. He can use a Qwerty keyboard array, either on his Dynavox or on an alternate keyboard, to compose text. Like his peers, composing using standard orthography will allow Colin to use invented spelling when writing. Also like his peers, the photograph selected as Colin's "drawing" will support his teacher and his peers in understanding Colin's invented text. Colin also may use word banks located on the eye gaze frame, alternate keyboard, or word-processing program that support him in composing text at a faster rate. When using the word banks, Colin chooses among words that set him up for different types of emergent text forms. For example, he can choose "I like…" to compose a text reflecting his opinions. He also may have vocabulary choices that represent his writing topic.

In this classroom the teacher uses "author's chair," a writers' workshop activity that features individual student sharing of writing products and includes a follow-up large-group peer discussion. When it is Colin's day to share his writing, he is able to introduce himself to the group using his Dynavox and tell the class his writing topic. He then releases his writing product line-by-line using the Dynavox or a talking word processor. Students in the class also choose what writing products they would like published and shared with others. Colin has access to publishing software that allows him to print and share his work.

For students who have greater cognitive or language needs, the tasks above can be adapted to reflect their individual learning needs. For example, a student who is not yet able to compose text using orthography can choose a photograph as her "writing." The adult supporting this student can generate a simple label that can be written below the photograph, read aloud using synthesized speech, and published for others to read. For each writing event there are multiple ways in which the task can be adapted to offer meaningful opportunities that foster the writing development of individual students42

The Role of SLPs

SLPs can play a strong role in fostering solid foundations for communication and language that lead to the development of conventional writing skills. A broad range of authentic and meaningful reading and writing should be integrated into the daily curricular experiences of students who use AAC. It is important that these children are afforded rich literacy learning environments that support them attaining their optimal writing performance. SLPs can support the writing development of children who use AAC by:

- understanding the student's individual learning needs. Assessing the capabilities of students who use AAC will assist in knowing where to start with instruction.
- using knowledge of the development of all language domains to support them in building a solid language foundation. Access to rich natural language learning contexts at home and school is essential.
- learning about writing development and best practices of writing instruction. Exemplary writing instructional approaches used in general education classrooms can be used as a point of departure for children who use AAC.

- identifying the mode(s) and strategies through which the student will compose text. Children who use AAC will be most successful when supported in being multimodal communicators (e.g., use of a combination of no-tech and high-tech systems).
- ensuring that AAC systems support the range of communication during all writing activities and that these systems reflect students' individual profiles. Students who use AAC need access to vocabulary during each writing event in the day. The amount and sophistication of their messages will depend on the student's language and communication skills.
- selecting systems that will support ease of movement between communication and writing and in the writing process. Ideally, students who use AAC will have their communication and writing tools readily accessible at all times. They should be able to move back and forth between talk with others and text production.
- assisting with home-to-school transfer of personal experiences that can be used to stimulate topic and idea generation for writing. The transfer of information between home and school can be fostered through a variety of formats, including activity logs, journals, remnants, photographs, and recorded messages.
- building background knowledge that supports topic and idea generation for writing.
- working together with the school team to generate and organize photos that can serve as "drawings" to support students' writing. Photographs shared by the family will only be used in the classroom if they are set up in a user-friendly format that allows teachers to access them easily. Students who use AAC can assist with prioritizing and organizing photos as potential writing topics. When they begin planning, students will be familiar with what is available and their selection will be made easier.
- identifying classroom discourse patterns (e.g., peer conferences or author's chair) of the writing curricula. Event-specific communication overlays can be created together with the school team that reflect the classroom communication patterns of the writing curricula.
- fostering classroom-based communication opportunities during writing events. SLPs can role-play together with children who use AAC to develop communication competence across the writing process. For example, these role-playing activities may involve learning how to use communication overlays, communication tools, or word banks. These activities also may foster the student's knowledge of the form, function, and timing of messages essential to successful classroom participation.
- being available in the classroom during writing events to facilitate the student's success in communicating orally or in text. As students work to build communication competence, it is important that they have adult or peer supports available that scaffold them during writing experiences.

Looking Toward the Future

In the future, it is critical that we move greater numbers of students who use AAC from emergent to conventional writing. From infancy, critical connections between language and literacy learning must be made. We must look together to find out which writing activities are most appropriate for students at varying levels of language and literacy development. We should examine which writing activities at varying grade levels provide core foundational experiences across literacy levels. We also must determine which writing tools are best for different writing tasks. Together with educational teams, SLPs have the opportunity to play a core role in the integration of communication, language, reading, and writing. The SLPs' knowledge of language learning applied in the development of writing skills can enable greater access to the world for persons who use AAC.

Janet M. Sturm is an associate professor in the department of communication disorders at Central Michigan University. Her research and clinical interests relate to computer-supported literacy, tying together literacy assessment and instructional strategies, classroom communication, and educational integration of AAC users.

Resources on Writing

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Story-Boxes: A Hands-On Literacy Experience

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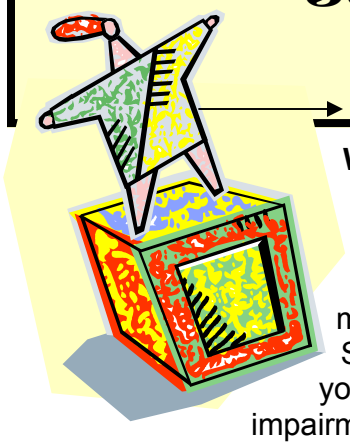

What is a Story Box?

It is simply a collection of items in a box or bag that corresponds to the items mentioned in a story. A Story Box is a way for young children with visual impairments to experience a story. It is an early literacy event that can easily fit into your daily routines as well as a tool to enhance the learning of concepts. In short, it is a fun, interactive learning experience for children and adults alike.

REMEMBER:

- ☞ It takes more time to figure out what an object or shape is through tactual exploration than through vision. A tactual learner needs to examine parts of an item separately then put the information they have gathered together to gain full understanding of the item.
- ☞ Words are just symbols representing ideas and concepts. Without meaning, words are a series of disconnected sounds and letters. Hands-on experiences help to provide meaning to words.
- ☞ You need not present all the items in a box with each reading. Determine your child's interests and attention so as not to over whelm her with *stuff*.
- ☞ Share your story boxes with young sighted children. They are very popular.

Why Story Boxes?

The purpose of a story box is to create hands-on literacy experiences for your child. Educators have long emphasized the importance of tactual exploration, i.e. hands-on learning, for young children with Visual Impairments. This is important not just for future Braille readers who will be using their finely tuned sense of touch to discriminate letters and to decode words, but also for all young children so that they can take in information, build concepts and further understand their world. Purposeful exploration involves thinking, and concept building. Children gather information through the experiences that they have. This is how they develop an understanding of how things relate. These experiences give meaning to their lives through the development of concepts. Literacy for any child emerges from hands-on experiences. Sighted children's experiences are rich with opportunities for learning that occur by chance, however, children with Visual Impairments

seldom, if ever, take in information incidentally. Yet teachers often expect that the youngster with blindness comes to school with the same information that sighted children have picked up on TV, through pictures, etc. Hence, the importance of hands-on experiences such as Story Boxes for young learners with blindness.

Step 1: Books, Books Everywhere: Choosing a Story

⇒ When selecting a story for your child, choose one that is simple and tells about familiar objects and concepts. Story Boxes can range from very concrete hands-on to the more complex and abstract.

⇒ Initially a box might contain items that your child uses during daily routines. You can make up a story about the routine or family activity. Your child may be the main character of your story. It can be about a trip to Grandparents, bath time, mealtime or a playtime with Dad. No book is really needed.

⇒ Choose books about familiar activities. Those stories will be meaningful for your child

⇒ Variety is fun. Expose your child to different types of books. Adaptations may make the book more accessible and interesting. Simple board books can be enhanced with Braille Dymo tape. Twin Vision books provide enrichment for siblings as well. Sound books can be made accessibly by affixing a little texture to the spoon one must depress to activate.

CHOOSE:

☺ Books that have characters and items that are readily available. Remember the complexity of the story and the number of items presented should be suited to your child. Often, simple is better.

☺ A story to match your child's attention span. Short and sweet works well for young children.

☺ A book that does not rely on visual experiences or pictures to provide meaning to the story.

☺ Books that are predictable and that have rhythm and rhyme.

Step 2: Getting It All Together: How to Actually Construct the Story Box

Choose an appropriate book

Select corresponding items. You may choose to go on a shopping spree but often collecting familiar objects from your household will do just fine.

Place the book and items in a storage container. Although many folks us Zip-Lock bags or shoe boxes, sweater-sized plastic containers are preferable as they are stackable and durable, thereby affording you an opportunity to establish a story box "library".

NOTE: prying these boxes open is a beneficial activity which develops the hand strength needed to read Braille.

Label the exterior of the container. A tactile marker will enable you and your child to "read" the title; e.g. three pieces of fake fur might be a good label for the story of *Goldilocks and the Three Bears.*

Step 3: Reading the Story

- Handle the objects in the box one at a time giving your child lots of time to explore. Comment on the item's size, its shape, and texture then name the item. If it's a spoon, pretend to eat. if it's a shoe, try it on. Allow the child to explore freely. Compare items.

- After tactually exploring the items, place them aside. Read the story and once again present the items as they are mentioned in the story. Avoid clutter. Too many items at once can be very confusing for young children with blindness.

- Have fun when reading. Use sound affects and dramatic intonation to peak your child's interest.

- When you finish with the story box, put clear closure on the activity by having your child help place the objects back in the box. This provides another opportunity to handle the objects.

- Children can experience the same story box at many levels over time. Some children will want to touch the Braille on the page. Others will enjoy anticipating and their favorite items, while still others will memorize the book and tell the story to the