Early in 1989, *Augmentative Communication News* (ACN) published an issue on literacy and augmentative and alternative communication (AAC). At that time I wrote, “We know very little about how individuals with severe expressive communication impairments learn to read and write,” and I predicted that “AAC models for literacy learning will undoubtedly evolve.” The good news is we have made progress.

- We are becoming more familiar with emergent literacy research so we know more about factors that contribute to literacy skill development.
- We are more knowledgeable about the typical literacy experiences of young children, adolescents and adults who use AAC techniques and devices.
- We have begun to use best teaching practices to support the development of reading and writing skills in AAC users.
- We are adapting literacy materials and experiences to accommodate the physical, sensory, cognitive and language impairments of AAC users.
- We have publications and products that raise the knowledge base of professionals and support the literacy learning process of individuals who use AAC.
- We are well on our way. Perhaps the best news is that many AAC clinicians (cont. on page 2)

For people with severe speech impairments, being literate means even more. “Literacy is a key to self-expression, a way to say exactly what is on your mind.” Only literacy provides unrestricted access to language.

Pictographic symbol sets and systems enable people who are unable to speak to select words, parts of speech and phrases. Many hypothesize that they also serve as a scaffold to conventional literacy. However, no symbol system, no matter how linguistically-based or how many thousands of vocabulary items it can represent, can compare to the alphabet. With just a small set of letters (e.g., 26 in English), any literate individual who is unable to speak can write anything, in any way she or he chooses. Also, literate individuals can more easily co-construct meaning with their communication partners and are more likely to be precisely understood. For these reasons, supporting the development of literacy skills should be a high priority for AAC professionals.

At present, many people with severe communication impairments who use AAC techniques do not read or write very well. Without going (cont. on page 2)
UPFRONT (continued from page 1) teachers, developers and researchers have become convinced that literacy really IS a very important priority for people with severe expressive communication impairments.

The bad news is that whenever researchers, master clinicians, manufacturers and researchers make rapid progress in an area, many practitioners tend to be left behind in a cloud of dust. Inevitably, a gap develops between what is known by a few and what is done in the real world by the majority. Teachers, clinicians, parents and others who need to know how to support AAC consumers have had to scramble to keep up. A related piece of bad news is that researchers now believe that a major reason for the limited success of many AAC users in developing literacy skills has been the inability of the clinicians, teachers and parents working with them to recognize the importance of teaching literacy. This means that consumers are paying the heaviest price of all for our inability to implement research information, new technologies, materials and clinical methods.

This issue focuses on the development of emergent literacy skills in individuals who use AAC. Emergent literacy refers to the earliest phases of literacy development—the period between birth and the time when children read and write conventionally. Literacy learning occurs as a result of the interaction between ability and experience. Thus, emergent literacy is as relevant to adolescents and adults who do not read and write as it is to young children. The next issue of ACN will focus on literacy issues for AAC users who are in the process of learning (and using) conventional reading and writing skills. Both issues are designed to provide a little help in closing the gap between what we know and what we actually do every day.

In this issue, Clinical News discusses literacy and AAC and why emergent literacy principles apply across the age span. For Consumers looks at the roles family members can play in supporting the emergence of literacy skills in individuals who use AAC. Research shares a list of ideas generated at the 5th Symposium on Literacy and Disabilities Studies regarding next steps in emergent literacy research for AAC users. Governmental announces International Literacy Day. The Equipment section suggests useful emergent literacy materials. Finally my thanks to those whom I interviewed for their time and willingness to share so much. They are listed on page 8.

This is the first issue of ACN that used Internet resources. A new computer with lots of memory and a fast modem transformed our office into an international library. What a world! Guess I've finally been "surfing." If you want more information about emergent literacy resources on-line, e-mail Harvey Pressman at Presssoc@aol.com

Sarah W. Blackstone, Ph.D., Author

Clinical News (cont. from page 1) into the specifics, it is important for AAC professionals to know that three major reasons are the lack of: (1) expectations, (2) opportunities to interact with and about books and (3) appropriate teaching received. Today we have a cadre of adults (and children in some areas) who do not read or write because no one has bothered to teach them.

What is literacy?

Literacy is a psychosocio-linguistic process and an integral part of the development of language. To become literate requires an ability to integrate listening, reading, speaking, writing and viewing in meaningful contexts. Children learn to talk and understand spoken language simply by being exposed to people talking. Children also "pick up" important information when they observe others reading and writing and when they are actively engaged in the literacy learning process (e.g., bedtime stories, drawing, writing their name). Literacy skills exist along a continuum. Some people have minimal abilities. Others are scholars, poets and novelists. Most of us have skills that lie somewhere in between.

Individuals with developmental disabilities often do not acquire conventional literacy skills at the same time as their able-bodied peers. However, many do learn that print is a form of communication and that newspapers and books are sources of enjoyment and information. Some develop reading and writing skills that serve them very well. It is very important for professionals and family members to realize that all AAC users—no matter what their age or diagnoses—currently fall somewhere along the continuum of literacy skills and
that their skills could improve with appropriate intervention.

**How does emergent literacy apply to AAC users?**

Six basic principles of emergent literacy and supporting evidence are listed in Table 1.12-15 These principles reflect current knowledge about how literacy develops across languages and cultures. To summarize, reading and writing are interrelated skills that emerge as part of an interactive language and communication process. The process begins in infancy and continues until conventional literacy is achieved. For most people, this phase lasts about six to seven years. For many AAC users, however, the phase of emergent literacy can last for decades.

While extensive research exists on emergent literacy for young, normally developing children, a substantial body of research is not yet available to support the efficacy of using these principles with children, adolescents or adults who use AAC. Preliminary clinical evidence, however, suggests that AAC users, like other children and adults, acquire literacy skills in increasingly sophisticated forms when other people take AIMM at literacy and provide them with:16

- Access to print materials. Adaptations may be necessary.
- Interaction opportunities that relate to literacy experiences and materials prior to, during and following their use, using communication boards/devices.
- Models of diverse use of print so individuals understand the range of possible applications and the personal relevance of learning to read and write.
- Motivation or encouragement to engage in literacy related events and interactions over time and across tasks and contexts.

Several gifted clinicians and researchers are developing materials to support emergent literacy skills in persons who use AAC. Examples and ideas follow. **For Consumers** gives specific ways to help families. Then, the **Equipment** section lists useful materials and gives a preview of some exciting new publications and products. In summary, knowing how important literacy is and having access to appropriate materials, AAC professionals now can support the emergence of literacy in all AAC users.

<table>
<thead>
<tr>
<th>Principle</th>
<th>Evidence that supports principle</th>
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<tbody>
<tr>
<td>Learning to read and write is a developmental process. It begins very early in life. Individuals pass through stages in a variety of ways and at different ages.</td>
<td>Contact with written language begins in infancy. By age 2 or 3, many children can identify familiar signs, labels and logos. Early scribbling shows characteristics of the writing system of the culture. You can identify from their writing what language children speak by age 4.</td>
</tr>
<tr>
<td>Reading and writing develop concurrently and interrelatedly.</td>
<td>Writing seems to help children with reading and vice versa.</td>
</tr>
<tr>
<td>Literacy skills develop in real life settings while accomplishing real life goals.</td>
<td>Most literacy experiences are embedded in activities that go beyond the goal of literacy itself. Children learn that reading and writing are fun, meaningful and can get things done.</td>
</tr>
<tr>
<td>Active involvement in the processes of reading and writing is necessary.</td>
<td>Children learn to reconstruct meaning by rereading favorite books. Their invented spelling reconstructs their knowledge of written language.</td>
</tr>
<tr>
<td>Adult interactions occurring around the process of reading and writing influence literacy learning.</td>
<td>Being read to daily is one of the greatest gifts we give our children. By listening to and seeing words, people develop a feel for the pattern and flow of written language.</td>
</tr>
<tr>
<td>Reading and writing are skills and must be practiced.</td>
<td>The best predictor of literacy progress is the amount of time someone spends reading and writing.</td>
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</table>

**For Consumers**

What can families of individuals who use AAC do to encourage the development of emergent literacy skills? Plenty! The role of the family is critical. Today, most young children who start school without hundreds of hours of experience reading and drawing/writing are at a significant disadvantage in developing literacy skills.17

Unless things change drastically, individuals who use AAC techniques/devices to communicate will continue to grow up and live in environments that have a negative impact on their literacy skill development. Research tells us that parents of children with severe physical and communication impairments (SSPI) are so busy meeting the basic physical needs of their children and surviving day-to-day, that literacy activities simply don't happen very often. When they do occur, parents do not intuitively know how to adapt reading and writing experiences in a way that will optimize the benefits.8,9,18 Clinical experience suggests that parents of children with severe language and communication impairments, such as autism and Down syndrome, also need help with literacy. Finally, families and AAC users who gave up on reading and writing years ago need our encouragement to change their expectations, as well as our knowledge to pry open the door to conventional literacy.

Any AAC user who is not yet conventionally literate is, by definition, in the phase of emerging literacy. These individuals require the attention of someone who (cont. on page 4)
For Consumers (cont. from page 3)

takes an active interest in their development of literacy skills. Ideally this person should have substantial and regular contact with them.16 Reading and writing activities are a fun, interactive part of daily life. If families don't have the time or energy to do the job, summon the troops—grandparents, siblings, friends, neighbors and volunteers. Positive expectations and four simple steps can make all the difference.16,19,20,21,22

Step #1. Provide opportunities for reading and writing. Everyone who is still learning to read and write should have ample opportunities to:

- Observe others reading newspapers, mail, magazines, books, recipes, street signs, product labels and TV ads.
- Observe others making lists, paying bills, writing notes, using a computer and taking notes.
- Be read to regularly. [Note: The individual who uses AAC should see the text being read.]
- Repeatedly read favorite books.
- Watch TV and videos in ways that support literacy. [Note: All new TVs have closed captioning capability with a switch on the back of the TV set. Researchers say it helps children and adults (including those with head injuries, learning disabilities and second language learners) learn to read.]
- Use tools to draw/write.
- Use communication displays/devices to interact about text.

Step #2. Watch for and report signs of emergent reading. Be on the lookout for emergent reading skills. Tell family members and professionals when AAC users:

- Turn pages of a book/magazine. [Note: Individuals can be taught to make a sound or use a communication device to say "Please turn the page."]
- Recognize signs, symbols or print in environment (MacDonalds, STOP, Nike) and in books/magazines.
- Ask/answer questions about books.
- Participate in repeated readings of favorite books.
- Anticipate events/words during repeated readings.
- Begin to show an awareness of sound/symbol relationships.
- Read some familiar words (sight vocabulary).

Step #3. Watch for and report signs of emergent writing. Be aware that drawing is an early stage of writing. Be on the lookout for and report when AAC users:

- Scribble/make marks
- Draw
- Label drawings
- Attempt to make letters
- Invent spelling
- Use picture symbols to create story
- Copy name
- Write name
- Make lists

For older AAC users, writing may open the door to literacy in ways that reading cannot because:

- Reading instruction, if the individual had any, obviously didn't work.
- These individuals have life experiences they can write about.
- Age-appropriate reading materials they can read successfully are extremely scarce.

Step #4. Find professionals who can assist with adaptive tools and strategies for writing, reading and using communication displays.

Writing. Many AAC users need adaptations to write and draw because they have difficulty handling a pencil. Nearly all, however, can become engaged in writing activities using markers, crayons, stamps, magnetic letters and so on. Make sure materials are easily accessible. Alphabet charts/magnetic letters should be low enough so children and those in wheelchairs can reach them.

For those with severe motor impairments, high-tech adaptations that allow access to drawing and writing, like features available in KidPix software, can even permit scribbling. Individuals who need adapted access should have opportunities to scribble, draw and write using the tools they'll most likely to use later on, i.e., computers. Therefore, the equivalent of scribbling may be banging on a keyboard with a blank word processing screen and speech output or selecting random letters, numbers and symbols from a scanning array.

While figuring out access, don't neglect writing. Composition is thinking on paper, not just the physical process of writing. Individuals can engage in the process of writing by dictating while someone writes down what they say.

Reading. Early reading is a cooperative activity. It doesn't mean passive listening. Readers can encourage interaction by asking questions, making comments and connecting content to the individual's experiences. Adaptations for reading often begin with positioning because readers-to-be need to see the text as it is being read. Young children often sit on an adult's lap. However, alternative positions are necessary for older individuals. Also, books belong on shelves that are low enough for emergent readers to get for themselves. Other adaptations to consider are page separators, page turners, book pages inserted in plastic page protectors, adapted book, books on CD-ROM, books on tape, closed-captioned TVs and videos. Also, you can download texts from Web sites and drop them into Write OutLoud or other talking software programs.

Communication displays. Individuals who use communi-
Individuals who use communication displays and devices rarely have them available during literacy related activities. This is unacceptable. Communication displays that support emergent story reading activities should include printed words and graphic symbols, as necessary. Vocabulary depicted should represent different parts of speech and be arranged so that the individual can construct relevant language using single words and word combinations to make comments, ask questions, identify actions and retell the story. [Note: It makes sense to try out your ideas for a display with the individual before finalizing the display.]

Communication displays serve two additional purposes: (1) They allow families and professionals to learn more about what the emergent reader understands and doesn’t understand, and (2) They provide opportunities for AAC users to see others using communication displays. The emergent reader should not be the only one using a display/device. Call it “aided language stimulation,” “modeling,” “augmented language,” “augmenting comprehension” or anything else you choose—but please, use the display to talk to and with the emerging reader. If a voice output communication aid (VOCA) or computer is available, it can enable individuals to repeat lines, hear rhymes, select single words, hear what word combinations sound like, use word combinations, do sound effects, listen to the sounds of letters and so on.

Sample activities
Emergent reading materials should reflect characteristics of books listed in Table II. While many publications exist for young children at the emergent literacy level, their content is too juvenile for older children and adults. The following ideas can help address the needs and interests of older emerging readers. Efforts required to prepare these materials are worth it, because they can be used over and over again. It is important for individuals to be exposed repeatedly to materials of interest to them.

<table>
<thead>
<tr>
<th>Table II. Characteristics of books for emergent literacy</th>
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<tbody>
<tr>
<td>1. Simple, repeated lines</td>
</tr>
<tr>
<td>2. Predictable text</td>
</tr>
<tr>
<td>3. Rhyme and rhythm</td>
</tr>
<tr>
<td>4. Familiar meaningful content</td>
</tr>
<tr>
<td>5. Large, highly visible print and pictures</td>
</tr>
<tr>
<td>6. Short simple text</td>
</tr>
<tr>
<td>7. Simple graphics to depict concepts</td>
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</tbody>
</table>

Use page fluffers, make book holders, use page protectors and so on.

Fourth, make a communication display for the adapted book as discussed earlier. Leave some blank spaces so you can add symbols. Read books again and again if the individual is interested.

2. Projects. Life is full of projects, and every project has a plan. Projects offer many reading and writing opportunities. For example, a recycling project can involve making lists about recyclable items (e.g., cans, bottles), looking up phone numbers, making calls, writing letters, preparing written announcements, charting pick-up schedules and making a bulletin board about recycling.

3. Daily activities. Recreation, Music ties people to their culture and peer group. Popular songs often have simple, repetitive, rhyming lyrics—perfect emergent literacy texts. Determine an individual’s favorite song and make a book for him/her to “read” as they listen to it. Cut out pictures or use graphic symbols to represent each line and write the lyrics using a large, bold font. Put a picture of the singer(s) on the front of the book. Individuals can share the book with others or read it to themselves.

4. Recreation. Music ties people to their culture and peer group. Popular songs often have simple, repetitive, rhyming lyrics—perfect emergent literacy texts. Determine an individual’s favorite song and make a book for him/her to “read” as they listen to it. Cut out pictures or use graphic symbols to represent each line and write the lyrics using a large, bold font. Put a picture of the singer(s) on the front of the book. Individuals can share the book with others or read it to themselves.

5. Guest “readers.” Individuals who have emerging literacy skills can “read” simple text to young children using a voice output communication aid. This can work very well in schools and in families where AAC users with emergent literacy skills have young children, siblings, cousins or willing friends.

In conclusion, most daily activities provide opportunities for literacy. It’s all about remembering to take the time that can make the difference.
Research projects that relate to the process of emergent literacy in individuals who use AAC are now well underway. Several target areas for research are listed in Table III.

Since the late 1980’s, research has focused primarily on: 1) identifying characteristics of AAC users who are literate and those who are becoming literate and 2) describing home and school literacy experiences of AAC users. As a result, we’ve learned that when emergent literacy principles are actively supported, many AAC users (including those with significant cognitive impairments) can and do develop literacy skills along the continuum of literacy development. Research confirms that we should not “blame the victim.” The reason AAC users do not develop emergent or conventional reading and writing skills is not because they are lacking. Instead, adults at home and in school have not expected them to or taught them to, and then, have given up on them far too soon.

A recent focus of research in the area of emergent literacy relates to language. Researchers are asking about the relationships among literacy, language development, AAC symbol learning and use, and speech output devices. We have no definitive answers, but are developing many good questions. We even have a few important controversies brewing. Some researchers hypothesize that individuals who use graphic symbols may learn literacy skills in unique ways. Others feel AAC users learn the same as individuals who don’t use graphic symbols. “AAC users learn what they are taught. The problem is that sometimes what we think we’re teaching is not always what we are actually teaching.”

Research demonstrates also that technology tools, such as word prediction and speech synthesis, enhance literacy learning. Effects are more pronounced when technology is used in conjunction with good instruction. Some current projects focus on assessment strategies and ways to instruct AAC users who are developing literacy skills.

Much remains to be done. Table III lists research questions generated by a group of approximately 20 professionals at the 5th Symposium on Literacy and Developmental Disabilities in January, 1996.

<table>
<thead>
<tr>
<th>AREA</th>
<th>RESEARCH QUESTIONS</th>
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<tr>
<td><strong>AAC user characteristics</strong></td>
<td>What are the best ways to engage children with SSPI in the reading process? What strategies do AAC users use to develop literacy skills? What literacy outcomes are desirable for AAC users? How do specific approaches to literacy impact AAC user’s functional status? Does consumer satisfaction vary with different approaches? How can we best teach children with autism to read and write? Are there ways to use print-based experiences more systematically to support social interactions and communicative behavior? Can we teach children with Down Syndrome, apraxia, cerebral palsy, sensory impairments to read and write? How do adults with severe disabilities learn to read and write?</td>
</tr>
<tr>
<td><strong>Language issues</strong></td>
<td>What conceptual framework should we use? How do children who use AAC (i.e., picture-based systems) develop syntax? How can we support the development of syntax? How should we teach symbols? How and when should we pair pictures with words? What effects do symbol sets, pre-stored phrases and words and other AAC system characteristics have on the development of the different skills involved in reading and writing? How do various approaches to literacy development impact differently on the clinical status of individuals with developmental disabilities?</td>
</tr>
<tr>
<td><strong>Home context</strong></td>
<td>What are the effects of closed captioning in the homes of families who have individuals with severe speech impairments?</td>
</tr>
<tr>
<td><strong>School context</strong></td>
<td>What instructional strategies should we use? How should we assess reading and language comprehension, writing and social cultural contexts so we can gain a truer picture of what AAC users actually know, or need help with? What is the impact of different contexts (i.e., inclusion, segregated, pull-out, “restructured schools”) on literacy and language learning and use?</td>
</tr>
<tr>
<td><strong>Community context</strong></td>
<td>What are benefits/costs of literacy skill development on adolescents and adults with developmental disabilities who use AAC (i.e., How do specific literacy interventions impact functional status? Quality of life)? What outcomes are desirable for programs that teach literacy to AAC users? Does family satisfaction increase? Does AAC user independence increase?</td>
</tr>
<tr>
<td><strong>Technology issues</strong></td>
<td>What is the impact of using software with “natural language” for literacy learning? What cognitive skills (not prerequisites) are required to use features of certain technology (e.g., word prediction; word processing features)? What effects do word prediction, speech output and other forms of technology have on the development of skills involved in reading and writing (i.e., decoding, sight word identification, silent reading comprehension, composition)? What is the impact on emergent literacy skills to have books available in electronic format? How should text be presented electronically (highlight)? What are the benefits of combining the “read it, hear it, write it” approach to early literacy training? What technology adaptations are effective (e.g., Dynamic display (how and when should we use? Color coding? Symbol systems—which? Rate enhancement techniques? Auditory output)?</td>
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Governmental
International Literacy Day

September 8th is International Literacy Day. The United Nations Educational, Scientific and Cultural Organization (UNESCO) established the day in 1967 to mark the importance of literacy worldwide. Each year the

"Literacy is not a luxury; it is a right and a responsibility. In an international community increasingly dedicated to the principles of equality and opportunity, illiteracy is unacceptable."  

International Reading Association presents an award honoring organizations that make a difference. Each community can find ways to highlight the importance of literacy for all persons by celebrating International Literacy Day.

- Ask your local newspaper to write an article about International Literacy Day and to include information about literacy for persons with disabilities.
- Get involved in an event at your local bookstore on September 8th.
- Suggest that your school or agency find a way to celebrate the day.

Equipment
Emergent literacy materials

Professionals working with AAC users now have access to excellent publications and "cookbooks." Although incomplete, the list of products cited below represents a starting point. Publications that say "in press" will be available in 1996.


OWL (Oral, Written Language) activity guide for preschool augmented communicators. Pierce, P., Erickson, K., Barnes, L. (In press). Mayer-Johnson Co., PO Box 1579, Solana Beach, CA 92075. Uses off-the-shelf books to foster inclusion. Includes goals and objectives for small and large group reading and writing activities, implementation suggestions and AAC displays.

Emergent literacy kits. CLDS (See next page for address). Sixty-three kits for 25 popular preschool books (laminated and Brailled), PCS symbols (nouns only), page fluffers, page extenders, talking strips so recordings can be made (with examples), rubber stamps. Each kit has either Big Mac or Cheap Talk 4 or 8. Felt characters for flannel boards. PVC pipe eye gaze frame.


Software

The Living Books on CD-Rom for computers. Provide independent access to very popular children’s books (mouse button can be used as a switch). Local stores.

Discus Books. Not as well known, but you can manipulate text in these books. Local stores.

Edmark Software. Excellent software, e.g., Bailey’s Book House. Local stores.

Write:OutLoud. Using Keynote as interface to AAC device, users can compose text using symbol sets on their device and share what they’ve written. Don Johnston, Inc. 1000 N Rand Road, Bldg 115, Wauconda, IL 60084.

Discover series (Don Johnston, Inc.) provides independent access for scanners and switch users. Also, they have wonderful software for literacy.

IntelliTalk. Easy-to-use features allow users to create, read, see and hear text. IntelliTools, Inc. 55 Leveroni Court, Suite 9, Novato, CA 94949.
On September 1, 1996 the Center for Literacy and Disability Studies (CLDS) will relocate—8 miles down the road. Activities will expand so the Center can provide a broader array of direct services in addition to their existing teaching/research activities. Personnel remain unchanged: David Koppenhaver, Director; David Yoder, Associate Director; Karen Erickson, Coordinator of Educational Services. Their yearly Literacy Symposium will take place as scheduled: January 23-24, 1997. Be on the lookout for a CLDS web site and newsletter. Contact CLDS to receive more information.

REFERENCES

10 Head Start Emergent Literacy Project, University of Idaho, Moscow, ID 83844. (208) 885-3741; (208) 885-3628 (fax). http://www.ets.uidaho.edu/ced/emflrt/people.htm
21 Denise DeCoste, (July, 1996). Personal communication.

RESOURCES

Pati King-DeBaun. Creative Communicating, P.O. Box 3358, Park City, UT 84060. (801) 645-7737 (Fax and phone).

Denise DeCoste. Team Leader for InterAct, 2600 Hayden Drive, Silver Spring, MD 20902. (301) 649-8057 (phone); (301) 649-8051 (fax).

Karen Erickson, Center for Literacy and Disability Studies (CLDS), Univ. of NC-Chapel Hill, CB #8135, Chapel Hill, NC 27599. (919) 966-7486 (phone); (919) 966-3864. [until September 1, 1996].

Janice Light, Penn State University, Dept of Communication Disorders, 217 Moore Building, University Park, PA 16802. (814) 863-2010. jcl4@psuvm.psu.edu.

David Koppenhaver. CLDS. See box above.