

Evidence-based Literacy Intervention for Individuals Who Require AAC

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Importance of literacy skills for individuals who require AAC

- Literacy skills
 - Allow fuller participation in education
 - Enhance cognitive development & advance learning
 - Increase access to employment opportunities
 - Expand communication options significantly
 - Increase self-esteem & perceptions of competence
 - Facilitate use of technologies (e.g., Internet)
 - Support social relationships (e.g., via email, IM)
 - Foster personal expression (e.g., blogs)
 - Allow access to enjoyable leisure pursuits

Literacy outcomes for individuals who require AAC

- Many individuals who require AAC
 - do not have basic literacy skills
 - are underachieving compared to typically developing peers
- A major factor that has contributed to poor literacy outcomes is the lack of appropriate evidence-based instruction adapted to meet the needs of individuals who require AAC

Components of effective evidence-based literacy intervention

- Sufficient time allocated for instruction
- Appropriate instructional content
- Appropriate instructional procedures
- Adaptations to allow active participation of individuals who require AAC

Sufficient time allocated for literacy instruction

- Current best practices recommend
 - All students in grades 1-3 receive at least 90 minutes of literacy instruction per day
 - At risk students should receive an additional 40-60 minutes of instruction per day
- Need to ensure that sufficient time is allocated for literacy instruction
 - Ideally intensive instruction provided
 - However, our research demonstrates significant literacy gains can be achieved in less than ideal conditions

Appropriate instructional content

- Instructional content based on recommendations of National Reading Panel (2000)
 - Reading to individuals who require AAC & talking about texts
 - Phonological awareness skills
 - Sound blending skills
 - Phoneme segmentation skills
 - Knowledge of letter-sound correspondences
 - Decoding skills
 - Sight word recognition skills
 - Reading and understanding books / other texts
 - Early writing skills

Appropriate instructional procedures

- Instructional procedures /teaching methods based on recommendations of National Reading Panel (2000)
 - Direct instruction in basic skills
 - Frequent opportunities to apply these skills in the context of meaningful, motivating literacy activities

Instruction in basic skills

- Model
 - Instructor demonstrates the skill
- Guided practice
 - Instructor provides scaffolding support to help student perform skill successfully
 - Gradually fades scaffolding support
- Independent practice
 - Student performs skill independently
 - Instructor provides feedback

Instruction in basic skills

- Feedback
 - If student performs skill correctly
 - Instructor provides positive feedback
 - If student is incorrect
 - Instructor directs student's attention to error
 - Models the correct response
 - Provides guided practice for student to ensure success
 - Provides additional opportunities for independent practice

Applying skills in meaningful literacy activities

- Provide frequent opportunities to apply skills in meaningful literacy activities
 - Demonstrate purpose of instructional activities
 - Establish that reading is meaningful & fun
 - Increase motivation for learning to read
 - Enhance generalization of skills
 - Provide additional opportunities to practice skills & thereby build fluency
 - Provide additional opportunities to practice taking meaning from texts

Adaptations for individuals who require AAC


- Adapt procedures to accommodate unique needs of individuals who require AAC
 - Eliminate the need for spoken responses
 - Provide insight into areas of difficulty to support instructional decisions
 - Systematic foils and error analysis
 - Compensate for lack of oral production /rehearsal
 - Model oral production /rehearsal for student
 - Encourage internal subvocal rehearsal

First steps Read and talk about books

- Read to student regularly & talk about text
 - Build language skills & world knowledge
 - Develop foundations for reading comprehension
- Procedures
 - Select appropriate books
 - Introduce the topic and new vocabulary
 - Read the book to the student
 - Provide opportunities for the student to ask questions or comment
 - Ask appropriate questions
 - Model the use of AAC
 - Encourage the student to become the storyteller


Instruction in sound blending

- Goal
 - The student will blend phonemes presented orally in sequence & determine the target word
- Task
 - Present 4 or more AAC symbols & label orally
 - Say the target word orally with each phoneme extended 1-2 seconds
 - Student must blend the phonemes & point to the AAC symbol or say/sign the word



Instruction in phoneme segmentation

- Goal
 - The student will match a target phoneme presented orally to the AAC symbol that starts with the phoneme
- Task
 - Present 4 or more AAC symbols & label orally
 - Say target phoneme e.g., /b/
 - Show letter (e.g., b) at the same time
 - Student must point to the AAC symbol of the word that starts with the target phoneme or say/sign the word



Instruction in letter sound correspondences

- Goal
 - The student will match a target phoneme presented orally to the correct letter
- Task
 - Present 4 or more letters
 - Say the target phoneme e.g., /b/
 - Student must point to the letter that represents the target phoneme

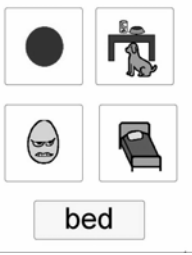
m	t
a	b

Progression of instruction in letter-sound correspondences

- Teach letter sounds, NOT letter names
- Introduce letters/sounds incrementally in the following sequence:
 - a, m, t, p, o, n, c, d, u, g, h, f, i, s, b, l, e, r, w, k, x, v, y, z, j, q
 - Teach lower case letters first
 - Teach letters that are used most frequently first
 - Separate letters that are similar
 - Teach short vowels before long vowels
 - Teach blends once most single letter-sound correspondences are mastered


Instruction in single word decoding

- Introduce decoding once student
 - Is competent with sound blending
 - Knows 6-7 letter-sound correspondences
- Goal
 - The student will decode a written word & match it to the correct AAC symbol or say/sign the word
 - Start when sound blending & 6-7 letter sounds acquired
- Task
 - Present 4 or more AAC symbols
 - Present the target written word
 - Student must read the word and point to the AAC symbol of the target word or say/sign the word



Instruction in shared reading

- Provide opportunities for students to apply decoding skills during shared reading
 - Highlight target words in the text for the student
 - Read sentence out loud and track words with finger; pause at the highlighted target word
 - Student must decode highlighted target word and then select the AAC symbol of the target word from communication display or SGD
- Gradually increase the number of target words until students are reading full sentences



Instruction in sight word recognition

- Incorporate instruction in sight word recognition
 - Highly motivating words that are too complex to decode
 - Irregular words that are frequently occurring

horse	high five
the	because

Building reading comprehension

- Reading comprehension is complex; it requires
 - track through sentence from left to right
 - decode or recognize by sight each word in sequence
 - access meaning of words
 - process all words in sequence to derive meaning of sentence (or longer text)
 - relate meaning to prior knowledge /experience to comprehend text
- Introduce reading comprehension strategies
 - E.g., Summarization strategy
 - Generating questions
 - Answering questions

Writing instruction

- Skilled writing requires integration of
 - Semantic, syntactic, morphological & narrative skills
 - Phoneme segmentation
 - Letter sound correspondences
 - Sight word skills /spelling of irregular words
 - Keyboard knowledge
- Teach basic skills
- Provide opportunities to apply skills in meaningful writing activities
 - Telling stories to adults
 - Writer's workshop
 - Publishing books
 - Use the books for reading activities
 - Share books with others

Best practices in literacy instruction

- Promote high expectations
- Encourage participation in a wide range of meaningful & motivating literacy activities
- Provide effective evidence-based literacy instruction
 - Sufficient time allocated for instruction
 - Appropriate instructional content
 - Appropriate instructional procedures
 - Adaptations to allow active participation of individuals who require AAC

Additional resources

- Website
 - Light, J. & McNaughton, D. *Literacy instruction for learners with autism, cerebral palsy, Down syndrome and other disabilities*. <http://aacliteracy.psu.edu>
- Webcast
 - Light, J. & McNaughton, D. (2006). *Maximizing the literacy skills of individuals who require AAC*. Webcast presented through the AAC-RERC. www.aac-rerc.com
- Publications
 - Light, J. & McNaughton, D. (2009). *Accessible Literacy Learning (ALL) Curriculum: Evidence-based reading instruction for learners with autism, cerebral palsy, Down syndrome and other disabilities*. San Diego, CA: Mayer-Johnson
 - Light, J. & McNaughton, D. (2009). Meeting the demands of the curriculum for conventional and advanced readers and writers who require AAC. In G. Soto & C. Zangari (Eds.), *Practically Speaking: Language, literacy, and academic development for students with AAC needs*. Baltimore, MD: Paul H. Brookes Publishing Co.
 - Light, J., McNaughton, D., Weyer, M., & Karg, L. (2008). Evidence-based instruction for individuals who require augmentative and alternative communication: A case study of a student with multiple disabilities. *Seminars in Speech and Language*, 29, 120-132.

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