

SIGN LANGUAGE

CHARACTERISTICS OVERVIEW CHART

Verbal Skills	Grade Levels	Cognitive Level	Areas Addressed
<input checked="" type="checkbox"/> Nonverbal	<input checked="" type="checkbox"/> PK	<input checked="" type="checkbox"/> Classic	<input type="checkbox"/> (Pre)Academic/Cognitive/Academic
<input checked="" type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Elementary	<input type="checkbox"/> High	<input type="checkbox"/> Adaptive Behavior/Daily Living
<input checked="" type="checkbox"/> Verbal	<input checked="" type="checkbox"/> Middle/High	Functioning	<input type="checkbox"/> Behavior
			<input checked="" type="checkbox"/> Communication/Speech
			<input type="checkbox"/> Social/Emotional

BRIEF INTRODUCTION

Sign language is a form of unaided augmentative and alternative communication (AAC). Unaided communication does not require any equipment external to the body but involves the use of symbols such as manual signs, pantomimes, and gestures (Mirenda, 2003). Sign language is used among the general public by people who are deaf. It is important to note that signing does not impede the development of spoken language.

DESCRIPTION

A large body of research has compared total communication with speech alone and/or manual signing alone to teach receptive and/or expressive vocabulary to children with autism (AU) who have limited or no functional speech. In a meta-analysis of 50 studies of 232 individuals over 20 years, Schlosser and Lee (2000) found that unaided AAC approaches, including sign language, were more effective than aided approaches with regard to acquisition. Both approaches were similar in terms of generalization and maintenance.

According to Mirenda (2003) and Goldstein (2002), studies on AAC suggest that manual signing or total communication results in faster and more complete receptive and/or expressive vocabulary acquisition than does speech alone. Not all children with autism perform equally well with manual sign learning; one variable that appears to be related to outcome is fine-motor ability.

Millar (2006) conducted a meta-analysis of AAC studies. Fourteen of the AAC studies of 21 individuals focused on sign language. Outcomes were positive, and 94% demonstrated increased speech when introduced to sign language or another AAC device.

BRIEF EXAMPLE

Joni, a primarily nonverbal 6-year-old with AU, was taught sign language. She appeared to like this mode of communication, particularly when her peers were also taught some basic signs. The number of signs Joni used grew dramatically over a one-year period. At that time, she began to talk.

SUMMARY

Overall, sign language studies have shown positive outcomes for students with AU, including the promotion of the use of verbal skills.

RESEARCH TABLE

Number of Studies	Ages (year)	Sample Size	Area(s) Addressed	Outcome
54*	4-18	244	Functional language use	+

Note: Includes reviews of literature by Schlosser & Lee (2004).

STUDIES CITED IN RESEARCH TABLE

1. Carbone, V.J., Sweeney-Kerwin, E.J., Attanasio, V., Kasper, T. (2010). Increasing the vocal responses of children with autism and developmental disabilities using manual sign mand training and prompt delay. *Journal of Applied Behavior Analysis, 43(4)*, 705-709.
3 boys (2 with ASD) were taught to emit a vocal request in conjunction with a previously learned manual sign when requesting an item using a prompt-delay + vocal model + shaping procedure to reinforce successive approximations of a vocal request in a multiple-baseline-across-participants design. 1 of the 2 participants with ASD showed an increase in both unprompted and prompted use of the vocal request following the introduction of the prompting and shaping procedures, while the other participant only showed a slight increase in prompted vocal requests.

2. Gregory, M. K., DeLeon, I.G., & Richman, D.M. (2009). The influence of matching and motor-imitation abilities on rapid acquisition of manual signs and exchange-based communicative responses. *Journal of Applied Behavior Analysis, 42*(2), 399-404.

Matching and motor imitation skills were assessed for six children with autism (7 to 17 years of age), followed by training to request the same set of preferred items using exchange-based communication and manual signs. Three participants displayed both skills and rapidly acquired both communicative response forms. Three others displayed neither skill; 1 mastered exchange-based responses but not manual signs, and neither of the other 2 easily acquired either response form.

3. Carbone, V., Lewis, L., Sweeney-Kerwin, E., Dixon, J., Loudon, R., & Quinn, S. (2006). A comparison of two approaches for teaching VB functions: Total communication vs. vocal-alone. *Journal of Speech-Language Pathology and Applied Behavioral Analysis, 1*, 181-191.

One 7-year-old girl with autism and limited verbal skills participated in a study to determine whether sign plus vocal instruction or vocal alone would result in acquisition of picture labels. She acquired picture labels twice as quickly in total communication condition versus vocal alone and acquired four times the number of labels under total communication condition versus vocal alone.

4. Schlosser, R. W., & Lee, D. L. (2004). Promoting generalization and maintenance in augmentative and alternative communication: A meta-analysis of 20 years of effectiveness research. *Augmentative and Alternative Communication, 16*, 208-226.

A meta-analysis of 50 studies of 232 individuals over 20 years found that unaided alternative and augmentative communication approaches, including sign language, were more effective than aided approaches with regard to acquisition. Both approaches were similar in generalization and maintenance.

5. Tincani, M. (2004). Comparing the Picture Exchange Communication System and sign language for children with autism. *Focus on Autism and Other Developmental Disabilities, 19*, 152-163.

Two children with autism, ages 5 and 6, used the Picture Exchange Communication System (PECS) and sign language. Sign language produced more vocalizations than did PECS. Results were unequivocal. One student profited more with PECS whereas the other benefited more from sign language.

REFERENCES

- Carbone, V., Lewis, L., Sweeney-Kerwin, E., Dixon, J., Loudon, R., & Quinn, S. (2006). A comparison of two approaches for teaching VB functions: Total communication vs. vocal-alone. *Journal of Speech-Language Pathology and Applied Behavioral Analysis, 1*, 181-191.
- Carbone, V.J., Sweeney-Kerwin, E.J., Attanasio, V., Kasper, T. (2010). Increasing the vocal responses of children with autism and developmental disabilities using manual sign mand training and prompt delay. *Journal of Applied Behavior Analysis, 43(4)*, 705-709.
- Goldstein, H. (2002). Communication intervention for children with autism: A review of treatment efficacy. *Journal of Autism and Developmental Disorders, 32*, 373-396.
- Gregory, M. K., DeLeon, I.G., & Richman, D.M. (2009). The influence of matching and motor-imitation abilities on rapid acquisition of manual signs and exchange-based communicative responses. *Journal of Applied Behavior Analysis, 42(2)*, 399-404.
- Millar, D. C. (2006). The impact of augmentative and alternative communication intervention on the speech production of individuals with developmental disabilities: A research review. *Journal of Speech, Language, and Hearing Research, 49*, 248–264.
- Mirenda, P. (2003). Toward functional augmentative and alternative communication for students with autism: Manual signs, graphic symbols, and voice output. *Language, Speech, and Hearing Services in Schools, 34*, 203-216.
- Schlosser, R. W., & Lee, D. L. (2004). Promoting generalization and maintenance in augmentative and alternative communication: A meta-analysis of 20 years of effectiveness research. *Augmentative and Alternative Communication, 16*, 208-226.
- Tincani, M. (2004). Comparing the Picture Exchange Communication System and sign language for children with autism. *Focus on Autism and Other Developmental Disabilities, 19*, 152-163.

RESOURCES AND MATERIALS

- American Sign Language: <http://www.lifeprint.com/>
This site includes information and resources for both learners and educators.
- Autism and Sign Language: <http://www.babies-and-sign-language.com/autism.html>
This site is devoted to the use of sign language in babies and young children.

- Autism Treatments and Therapy Options: <http://autism-treatments.org/treatment-types/sign-language-for-autism/>
This links the user to an article concerning using sign language with children with autism. It also provides links to other helpful information in treatments and therapy.
- Nonverbal Users of Sign Language: <http://deafness.about.com/cs/signfeats1/a/nonverbal.htm>
Helpful information about nonverbal users of sign language; the site also offers multiple resource links.

GENERAL RESOURCES

- Autism Internet Modules (AIM) www.autisminternetmodules.org. The Autism Internet Modules were developed with one aim in mind: to make comprehensive, up-to-date, and usable information on autism accessible and applicable to educators, other professionals, and families who support individuals with autism spectrum disorders (ASD). Written by experts from across the U.S., all online modules are free, and are designed to promote understanding of, respect for, and equality of persons with ASD.
- The Autism Web Course: http://cdd.unm.edu/swan/autism_course/about/index.htm. This web course was developed out of materials from the Interactive Collaborative Autism Network (ICAN). The Autism Programs at the University of New Mexico has updated and added information to this web course.
 - Characteristics
 - Assessment
 - Academic Interventions
 - Behavioral Interventions
 - Communication Interventions
 - Environmental Interventions
 - Social Interventions
 - Family Support Suggestions
- Indiana Resource Center for Autism (IRCA) <http://www.iidc.indiana.edu/irca/fmain1.html>. The Indiana Resource Center for Autism staff's efforts are focused on providing communities, organizations, agencies, and families with the knowledge and skills to support children and adults in typical early intervention, school, community, work, and home settings.
 - IRCA Articles: <http://www.iidc.indiana.edu/index.php?pageId=273>
- Texas Statewide Leadership for Autism www.txautism.net. The Texas Statewide Leadership for Autism in conjunction with the network of Texas Education Service center with a grant from the Texas Education Agency has developed a series of free online courses in autism. Please check the training page, www.txautism.net/training.html, for update lists of courses, course numbers and registration information. Current courses include the following:

- Asperger Syndrome 101
- Augmentative and Alternative Communication and the Autism Spectrum
- Autism for the General Education Teacher
- Autism 101: Top Ten Pieces to the Puzzle
- Classroom Organization: The Power of Structure for Individuals with ASD
- Communication: The Power of Communication for Individuals with ASD
- Futures Planning for Students with Autism Spectrum Disorder
- Navigating the Social Maze: Supports and Interventions for Individuals with ASD
- Solving the Behavior Puzzle: Making Connections for Individuals with ASD