

FUNCTIONAL COMMUNICATION TRAINING

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 checked="" type="checkbox"/> (Pre)Academic/Cognitive/Academic
<input checked="" type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Elementary	<input checked="" type="checkbox"/> High	<input checked="" type="checkbox"/> Adaptive Behavior/Daily Living
<input checked="" type="checkbox"/> Verbal	<input checked="" type="checkbox"/> Middle/High	Functioning	<input checked="" type="checkbox"/> Behavior
			<input checked="" type="checkbox"/> Communication/Speech
			<input checked="" type="checkbox"/> Social/Emotional

BRIEF INTRODUCTION

The majority of students with autism (AU) experience social and communication challenges that require direct intervention. Strategies that are positive and fit within the child’s typical environments have been shown to increase student skills in this area.

DESCRIPTION

Functional communication is a positive behavior support (PBS) intervention designed to reduce problem behaviors by replacing them with meaningful or functional communication – whether verbal or gestural. In other words, rather than students having a tantrum or displaying other disruptive behaviors when frustrated at not getting their needs met, they communicate their needs in a more socially acceptable way through the use of words, alternative communications systems, such as the Picture Exchange Communication System (PECS), or gestures, such as pointing.

The emphasis of the communication is on functionality as opposed to form. Functional communication training relies on an accurate understanding of the function behind the problem behavior (attention seeking, access to preferred items, escape/avoidance, etc.) in order to effectively eliminate it.

STEPS

The following steps should be used when implementing a functional communication approach.

1. Identify why the behavior is occurring of the problem behavior through (a) interview with the student, teachers, and parents; (b) observation of the student on several occasions in a variety of settings; and (c) collection of data regarding the frequency and specific circumstances under which the behavior/s occur. At this point a hypothesis is formed about the cause or function of the behavior.
2. Match the function of the behavior to the message of the alternative communication that will be taught. For example, if the function of a student's tantrum is determined to be escape/avoidance, offer the student an effective way to signal the need for a break.
3. Prompt the use of the communication and reinforce the desired behavior with the desired outcome (attention, access to preferred items, breaks). Use ABA/PBS and other strategies to support the communication of individuals with autism (see Applied Behavior Analysis/Positive Behavior Supports, Environmental Supports).
4. Ignore the problem behavior and prompt the use of the appropriate communication.

BRIEF EXAMPLE

Andrew is a 10-year-old with autism who has few verbal skills and communicates by using objects instead of pictures. His speech-language pathologist and parents wanted to provide additional communication options for him at home and at school. Andrew's speech-language pathologist created a "What Did You Do in School Today?" packet that contained actual items representing Andrew's day. At the end of the day, Andrew and his paraprofessional reviewed the packet, and when Andrew got home, his parents and he were able to communicate about the day's events by referring to the objects in the packet. One of Andrew's "What Did You Do in School Today?" packets appears on the next page.



From Savner, J. L., & Myles, B. S. (2000). *Making visual supports work in the home and community for individuals with Asperger Syndrome and autism*. Shawnee Mission, KS: Autism Asperger Publishing Company. Reprinted with permission.

RESEARCH TABLE

Number of Studies	Ages (year)	Sample Size	Area(s) Addressed	Outcome
38*	3-15	124	Functional communication training, reduction of problem behaviors, picture schedules, Picture labels, gestural communication, self-injury, task completion, escape, elopement	+

*Note: Includes meta-analysis, but does not include other interventions identified simply as behavioral in the research article even though they used the functional communication training steps.

STUDIES CITED IN RESEARCH TABLE

1. Danov, S.E., Hartman, E., McComas, J.J., Symons, F.J. (2010). Evaluation of two communicative response modalities for a child with autism and self-injury. *Journal of Speech-Language Pathology & Applied Behavior Analysis*, 70-79.
The purpose of this study was to evaluate the preference for either a verbal or picture request to be used during FCT intervention for a 3-yr old boy with ASD. In an alternating treatments design, the child made more only one independent verbal request, while repeatedly making independent picture requests across multiple experimental sessions. This study indicates that the choice of response form when using FCT may play a role in how often the child uses the request and that child preference for response forms should be assessed.
2. Falcomata, T.S., Roane, H.S., Feeney, B.J., Stephenson, K.M. (2010). Assessment and treatment of elopement maintained by access to stereotypy. *Journal of Applied Behavior Analysis*, 43(3), 513-517.
This study reports the successful use of FCT to reduce the elopement of a 5-yr old boy with ASD in a multiple-baseline-across settings design.
3. Gibson, J.L., Pennington, R.C., Stenhoff, D.M., Hopper, J.S. (2010). Using desktop videoconferencing to deliver interventions to a preschool student with autism. *Topics in Early Childhood Special Education*, 29(4), 214-225.
The authors of this study report the reduction of elopement of a 4-yr old boy with ASD via FCT training delivered by teachers trained during videoconferences with the investigators. The teacher successfully implemented a reversal design to demonstrate the effectiveness of the treatment for the child.
4. Olive, M., Lang, R., & Davis, T. (2008). An analysis of the effects of functional communication and a voice output communication aid for a child with autism spectrum disorder. *Research in Autism Spectrum Disorders*, 2(2), 223-236. The purpose of this study was to examine the effects of functional communication training and a VOCA (Voice Output Communication Aid) on the challenging behavior and language development of a 4- year-old girl with autism. The participant’s mother implemented modified functional analysis (FA) and intervention procedures at home. A multiple probe design across activities was used to analyze intervention effectiveness. Functional Communication Trainings with a VOCA (Voice Output Communication Aid) successfully decreased challenging behavior and increased VOCA use. A secondary analysis revealed increased pronoun use.
5. Casey, S. D., & Mercial, C. L. (2006). The use of functional communication training without additional treatment procedures in an inclusive school setting. *Behavioral Disorders*, 32, 46-54.
The premise behind functional communication training is to replace maladaptive behaviors with a communicative response that is either verbal or gestural. Such responses are the functional equivalent of the maladaptive or self-injurious behavior except that they are more socially

acceptable. In order for this to be successful, the communicative response must be reinforced heavily while the maladaptive or self-injurious behavior is reinforced minimally, if at all. One 11-year-old student participated in this study. Results showed a decrease in maladaptive or self-injurious behaviors.

6. Drager, K., Postal, V., Carrolus, L., Castellano, M., Gagliano, C., & Glynn, J. (2006). The effect of aided language modeling on symbol comprehension and production in two preschoolers with autism. *American Journal of Speech Language Pathology, 15*, 112-126.
Two 4-year-olds with autism participated in this study to determine the efficacy of Aided Language Modeling (ALM; Picture Communication Systems and natural language strategies) to improve receptive language symbol comprehension and production. Results indicated that ALM is an effective intervention to increase both symbol comprehension and production. The effects were maintained over the 37 sessions of the study.
7. Mancil, G. R., Conroy, M. A., Nakao, T., & Alter, P. (2006). Functional communication training in the natural environment: A pilot investigation with a young child with autism spectrum disorder. *Education and Treatment of Children, 29*, 615-633.
This study examined functional communication training for one 4-year-old boy over 60 sessions. Results demonstrated a reduction in maladaptive or disruptive behaviors, an increase in communication, and a reduction in response time to distracters.
8. Martin, C. A., Drasgow, E., Halle, J. W., & Brucker, J. M. (2005). Teaching a child with autism and severe language delays to reject: Direct and indirect effects of functional communication training. *Educational Psychology, 25*, 287-304.
The study examined the effects of direct functional communication training, involving prompting, differential reinforcement, and error correction procedures, in teaching a 10-year-old child with autism to reject items by touching an icon. Results indicated that the training was successful at replacing pushing away with touching an icon to reject items, but it had variable effects on the other behaviors serving a rejecting function.
9. Schindler, H., & Horner, R. (2005). Generalized reduction of problem behavior of young children with autism: Building trans-situational interactions. *American Journal on Mental Retardation: 110*(1), 36-47.
The effects of functional communication training on the generalized reduction of problem behavior with three 4- to 5-year-old children with autism and problem behavior were evaluated. Interventions incorporating functional communication training reduced problem behavior in one setting.
10. Bopp, K. D., Brown, K. E., & Mirenda, P. (2004). Speech-language pathologists' roles in the delivery of positive behavior support for individuals with developmental disabilities. *American Journal of Speech-Language Pathology, 13*, 5-19.
This meta-analysis of 14 studies with 19 participants with autism examined the efficacy of functional communication training with alternative or augmentative communication as well as the use of visuals such as picture schedules. All of the studies showed positive results in

reducing disruptive or problematic behaviors and improving communication. However, there were no reports of generalization or maintenance.

11. Polirstok, S. R., Dana, L., Buono, S., Mongelli, V., & Trubia, G. (2003). Improving functional communication skills in adolescents and young adults with severe autism using gentle teaching and positive approaches. *Topics in Language Disorders, 23*, 146-153.
The study examined the therapeutic intervention program for young adults with severe autism at the Oasi Institute in Troina, Sicily. The program, which integrates gentle teaching, humanistic applied behavior analysis, and functional communication training, values human interactions and provides opportunities to acquire functional skills through errorless learning activities. Eighteen adolescents with autism participated in the study. Results of an 18-month study indicated significant improvements in functional communication skills and an accompanying reduction in maladaptive/stereotypic behaviors in the environment using gentle teaching and positive approaches.
12. Delprato, D. J. (2001). Comparisons of discrete-trial and normalized behavioral intervention for young children with autism. *Journal of Autism and Developmental Disorders, 31*, 315-325.
The study examined a series of 10 controlled studies in which traditional operant behavioral procedures were compared with more recently developed normalized interventions for teaching language to young children with autism. In all eight studies with language criterion responses, normalized language training was more effective than discrete-trial training. Furthermore, in the two studies that assessed parental affect, normalized treatment yielded more positive effect than discrete-trial training. There were 63 participants in these 10 studies.
13. Braithwaite, K. L., & Richdale, A. L. (2000). Functional communication training to replace challenging behaviors across two behavioral outcomes. *Behavioral Interventions, 15*, 21-36.
The study examined the effectiveness of an intervention that included extinction and functional communication training to reduce multiply controlled, self-injurious, and aggressive behaviors in a 7-year-old boy with autism in a school setting. Analysis of behavioral antecedents and consequences suggested that self-injury and aggression served the dual behavioral outcomes of escape from difficult tasks and access to preferred objects. Treatment consisted of teaching the boy an alternate request, while challenging behaviors were concurrently placed on extinction. Acquisition of the alternate requests was associated with a decrease to zero levels of self-injury and aggression across the two behavioral outcomes, which was maintained when a 5-second delay was implemented. Results showed that challenging behaviors with different behavioral outcomes can be replaced with functionally equivalent communication.
14. Buffington, D., Krantz, P., McClannahan, L., & Poulson, C. (1998). Procedures for teaching appropriate gestural communication skills to children with autism. *Journal of Autism and Developmental Disorders, 28*, 535-547.
Four children with autism, ages 4-6 years, participated in 72 sessions designed to increase appropriate use of gestural communication with verbal and nonverbal prompting. All

participants increased their rate of appropriate responses, and generalization was reported across other environments.

15. Lalli, J. S., Casey, S., & Kates, K. (1995). Reducing escape behavior and increasing task completion with functional communication training, extinction, and response chaining. *Journal of Applied Behavior Analysis, 28*(3), 261-268.
The effects of functional communication training, extinction, and response chaining on participants' (10, 13, 15 years of age) escape behavior by evaluating the effects of response chaining following the implementation of functional communication training. Participants were taught an escape response and then a response chaining procedure to increase their participation in the task. Results showed that the treatment reduced rates of aberrant behavior and that the chaining procedure was effective in decreasing the availability of escape.
16. Carr, E. G., & Kemp, D. C. (1989). Functional equivalence of autistic leading and pointing: Analysis and treatment. *Journal of Autism and Developmental Disorders, 19*, 561-578.
A less desirable form of requesting, leading was addressed by strengthening a more desirable form of requesting, pointing. The study was conducted with 4 children (aged 3 and 5 yrs) with autism. Intervention included verbal and physical prompting of the pointing response as well as tangible reinforcement for child-initiated instances of that response. Verbal requesting was also taught to accompany the pointing. Following intervention, generalization was observed.

REFERENCES

- Bopp, K. D., Brown, K. E., & Mirenda, P. (2004). Speech-language pathologists' roles in the delivery of positive behavior support for individuals with developmental disabilities. *American Journal of Speech-Language Pathology, 13*, 5-19.
- Braithwaite, K. L., & Richdale, A. L. (2000). Functional communication training to replace challenging behaviors across two behavioral outcomes. *Behavioral Interventions, 15*, 21-36.
- Buffington, D., Krantz, P., McClannahan, L., & Poulson, C. (1998). Procedures for teaching appropriate gestural communication skills to children with autism. *Journal of Autism and Developmental Disorders, 28*, 535-547.
- 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.
- Carr, E. G., & Kemp, D. C. (1989). Functional equivalence of autistic leading and pointing: Analysis and treatment. *Journal of Autism and Developmental Disorders, 19*, 561-578.

- Casey, S. D., & Merical, C. L. (2006). The use of functional communication training without additional treatment procedures in an inclusive school setting. *Behavioral Disorders, 32*, 46-54.
- Danov, S.E., Hartman, E., McComas, J.J., Symons, F.J. (2010). Evaluation of two communicative response modalities for a child with autism and self-injury. *Journal of Speech-Language Pathology & Applied Behavior Analysis, 70-79*
- Delprato, D. J. (2001). Comparisons of discrete-trial and normalized behavioral intervention for young children with autism. *Journal of Autism and Developmental Disorders, 31*, 315-325.
- Drager, K., Postal, V., Carrolus, L., Castellano, M., Gagliano, C., & Glynn, J. (2006). The effect of aided language modeling on symbol comprehension and production in two preschoolers with autism. *American Journal of Speech Language Pathology, 15*, 112-126.
- Falcomata, T.S., Roane, H.S., Feeney, B.J., Stephenson, K.M. (2010). Assessment and treatment of elopement maintained by access to stereotypy. *Journal of Applied Behavior Analysis, 43(3)*, 513-517.
- Gibson, J.L., Pennington, R.C., Stenhoff, D.M., Hopper, J.S. (2010). Using desktop videoconferencing to deliver interventions to a preschool student with autism. *Topics in Early Childhood Special Education, 29(4)*, 214-225.
- Lalli, J. S., Casey, S., & Kates, K. (1995). Reducing escape behavior and increasing task completion with functional communication training, extinction, and response chaining. *Journal of Applied Behavior Analysis, 28(3)*, 261-268.
- Mancil, G. R., Conroy, M. A., Nakao, T., & Alter, P. (2006). Functional communication training in the natural environment: A pilot investigation with a young child with autism spectrum disorder. *Education and Treatment of Children, 29*, 615-633.
- Martin, C. A., Drasgow, E., Halle, J. W., & Brucker, J. M. (2005). Teaching a child with autism and severe language delays to reject: Direct and indirect effects of functional communication training. *Educational Psychology, 25*, 287-304.
- Olive, M., Lang, R., & Davis, T. (2008). An analysis of the effects of functional communication and a voice output communication aid for a child with autism spectrum disorder. *Research in Autism Spectrum Disorders, 2(2)*, 223-236.
- Polirstok, S. R., Dana, L., Buono, S., Mongelli, V., & Trubia, G. (2003). Improving functional communication skills in adolescents and young adults with severe autism using gentle teaching and positive approaches. *Topics in Language Disorders, 23*, 146-153.
- Schindler, H., & Horner, R. (2005). Generalized reduction of problem behavior of young children with autism: Building trans-situational interactions. *American Journal on Mental Retardation: 110(1)*, 36-47.

RESOURCES AND MATERIALS

- Autism Internet Module. Functional Communication Training:
<http://www.autisminternetmodules.org/>
- Center on the Social and Emotional Foundations for Early Learning. [What Works Briefs:](http://csefel.vanderbilt.edu/briefs/wwb11.html)
<http://csefel.vanderbilt.edu/briefs/wwb11.html>
Using Functional Communication Training to Replace Challenging Behavior (Brief 11). This site also provides practical information on functional communication skills used with young children with autism.
- Durand, V. M. (2002). *Severe behavior problems: A functional communication training approach (Treatment manual for practitioners)*. New York: Guilford Press.
This article offers information on teaching functional communication skills.
- Functional Communication Training:
<http://www.asaonline.org/intervention/procedures/functional2.htm>
This website discusses how to teach functional communication skills to students with autism.
- National Professional Development Center on Autism Spectrum Disorders: Evidence-Based Practices Brief: Functional Communication Training:
<http://autismpdc.fpg.unc.edu/content/functional-communication-training>
- Preis, J. (2007). Strategies to promote adaptive competence for students on the autism spectrum. *Support for Learning*, 22, 17-23.
This article offers information on teaching functional communication skills.

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