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**Topic:** Mand Training across Modalities:  
Effective Methods to Teach Functional  
Communication

**Speaker:** Erin Lombard, M.Ed., BCBA



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# Professional Training Series



**Step by Step**

## **Mand Training across Modalities: Effective Methods to Teach Functional Communication**

*Presented by: Erin Lombard, M.Ed., BCBA*



**Special Learning**



# Speaker Bio

**Erin Lombard** is currently a behavior consultant with over 12 years of experience working with children with autism and developmental disabilities in homes, schools, and center based programs. She is a Board Certified Behavior Analyst and a previous certified Special Education teacher in Arizona. Along with providing consultation through SBSA, she also currently teaches graduate level Positive Behavior Support courses at Northern Arizona University.

**Erin** is originally from California where she finished her undergraduate degree in Child and Adolescent Studies from California State University, Fullerton. She obtained her master's degree in Special Education from the University of Phoenix. She completed her coursework in applied behavior analysis through the University of North Texas. She is currently working on her PhD in Psychology at Capella University.





# Objectives

- At the end of this presentation, participants will be able to:
  - Identify and select from 5 communication modalities based on consumer needs
  - Conduct a task analysis related to communication needs of individuals
  - Design an intervention plan to increase functional communication





# Verbal Behavior

- Skinner (1957) proposed that verbal behavior is functionally independent and similar topographies of verbal behavior may result in multiple functions. Lerman, et al. (2005) describe four of these operants as important to developing functional language interventions:
  - Tact
    - Tact refers to “making contact with the” environment (Skinner, 1957, p. 81). The verbal response is strengthened by the stimulus in which the speaker has made contact.
  - Echoic
    - Echoic has point to point correspondence with a vocal stimulus.
  - Intraverbal
    - Intraverbal is a response to vocal or textual verbal behavior and does not have point to point correspondence.
  - Mand
    - Mand is a verbal operant in which the response is evoked by a motivational operation and the consequence is access to the stimuli representing the motivational operation.





# Verbal Behavior

- All verbal behavior, is dependent upon a stimulus, response, and a consequence (Skinner, 1957).

	Stimulus	Response	Consequence
Tact	Fresh Apple	“Apple”	“Yes, that is an apple”
Echoic	“Apple”	“Apple”	Smiles and tickles
Intraverbal	Tell me a fruit	“Apple”	“You’re right!”
Mand	Hungry and sees apple slices	“Apple”	Given apple slices to eat





# Importance of Mands

- The focus of this presentation is on the verbal operant, mand.
- Manding is the only verbal operant in which a motivating operation evokes the response. There fore, the consequence is unique in that the speaker receives the specific stimuli desired.
- When an individual is unable to mand, the individual is unable to directly receive the stimulus representing the motivating operation. This can lead to incredible frustration or extinction of attempts to mand.
- The remainder of this presentation will look at various communication modalities and developing a mand training for each type of communication.





# Where to begin?

- Mand Training follows the same procedures utilized for any behavioral intervention.
- Content Area 8 (Third Edition BACB Task List)
  - Task Analysis
  - Recommend Goals and Interventions based on “client preference, task analysis, current repertoires, supporting environments, constraints, social validity, assessment results, and best available scientific evidence”
  - State goals in observable, measurable terms





# Task Analysis

- Often, a task analysis is considered when a behavior has multiple steps and chaining will be utilized
  - Brushing Teeth
  - Tying Shoes
  - Folding Laundry
- A task analysis can be written for any behavior. A task analysis provides the road map for all the behaviors that are needed to produce the desired outcome.
- Compare the ideal task analysis to the current repertoire of the individual learner
  - What steps are missing?
- Consider a task analysis for manding for a cookie
  - Must be an EO for a cookie
  - Know who can give the cookie
  - Gain attention to the person who can give the cookie
  - Request for the cookie (say “cookie”, point to cookies, sign cookie, give a picture of a cookie, push a button representing cookie, etc..)





# Task Analysis - Manding

## Ideal task analysis

- Must have an EO for a cookie
- Know who can give the cookie
- Gain attention to the person who can give the cookie
- Request for the cookie (say “cookie”, point to cookies, sign cookie, give a picture of a cookie, push a button representing cookie, etc...)

## Current Repertoire

- Has an EO for cookie
- Opens pantry door
- Tries to climb up shelves to reach cookie
- When falls, throws tantrum
- Caregiver rushes in and offers choice of cookies or chips
- Individual grabs for cookies



# Task Analysis - Manding

Task Analysis

Current Repertoire





# Choosing a Modality

- Determining how the individual you are teaching will communicate:
  - Vocal Communication
  - Sign Language
  - Picture Exchange
  - Augmentative Communication
- The Communication Modality Assessment
  - 25 items rated as YES or NO
  - Results suggest a recommended communication modality





# Five Communication Modalities

- Vocal words
- Sign Language
  - This includes specific American Sign Language (ASL) and modified sign language.
- Picture Exchange
- Low Tech Augmentative Communication
  - a switch or other single element
- High Tech Augmentative Communication
  - Electronic Communication Devices, Tablets, Smart phones





# Assessing for Communication Modality

- Determining which communication modality to begin mand training is the important first step in developing a mand training program.
  - What pre-requisite skills does the individual possess?
  - Is he active?
  - Is he computer savvy?
  - Does she have joint attention skills?



# The Communication Modality Assessment

## Communication Modality Assessment

Answer Yes or No to the preceding questions. Use the scoring guide below to determine the recommended communication modality

1. The individual points to objects	YES	NO
2. The individual babbles at least 6 times in an hour	YES	NO
3. The individual tolerates physical prompting	YES	NO
4. The individual has at least 1 word in his repertoire	YES	NO
5. The individual has demonstrated imitation skills	YES	NO
6. The individual has demonstrated receptive language skills	YES	NO
7. The individual can imitate at least 2 sounds upon request	YES	NO
8. The individual enjoys cause and effect toys (push a button to make noise/light up)	YES	NO
9. The individual is able to pick up small objects with fingers	YES	NO
10. The individual can expressively label at least 2 items	YES	NO
11. The individual becomes easily frustrated	YES	NO
12. The individual has difficulty sitting in one spot for a given task	YES	NO
13. The individual tolerates others manipulating his hands	YES	NO
14. The individual appears "unaware" of other people	YES	NO
15. The individual can operate a DVD/VCR player	YES	NO
16. The individual says at least one word in a given hour	YES	NO
17. The individual only (or most of the time) gets items himself	YES	NO
18. The individual can reliably play a computer game	YES	NO
19. The individual uses gestures to get his needs met (example: puts arms up to be held)	YES	NO
20. The individual brings items to you when he needs help	YES	NO
21. The individual brings items to you when he wants interaction	YES	NO
22. The individual rarely seeks attention (does not include attention seeking tantrums)	YES	NO
23. The individual has echolalia	YES	NO
24. The individual can reliably navigate the web to reach a desirable website/program	YES	NO
25. The individual can walk/move to get to a desired location/person	YES	NO

### Scoring Guide

The row with the most circles corresponds with a likely recommended communication modality

Circle the items answered "YES".	Recommended Communication Modality
2 4 7 10 16 23	Vocal Words
1 3 5 9 13 19	Sign Language
1 6 9 12 20 21 25	Picture Exchange
1 8 11	Low Tech Augmentative Communication
3 5 6 13 15 18 24	High Tech Augmentative Communication
11 14 17 22	Pre-Requisite Communication Training





# Beginning Mand Training

- The second step in beginning a mand training program is determining what items to target
- Regardless of communication modality chosen, do not expect the individual to generalize their communication to every item.
- Many individuals with autism will need to be taught many targeted items before generalization will occur
- Choose an item (reinforcer) wisely! Once an item is targeted, the individual should only access the item when he correctly mands for the item (prompting is OK!)\*
  - This is why vocal words may be particularly challenging. If vocal words are the chosen modality, also choose an alternative form of communication for when the individual simply cannot say the word or even an approximation to the word.
- \*With that being said – not accessing a favorite item can be very frustrating! Ensure success with errorless learning. This is when you ensure the individual performs the correct response even before he has tried and failed.





# Vocal Words

- Vocal words to communicate is the most desirable form of communication. Most individuals utilize vocal communication to speak. The speed in which a speaker can communicate to a listener is faster than most other forms of communication. (Individuals who are fluent in sign language also utilize a fast rate of communication to a listener).
- Vocal words may be a primary choice of communication if the individual currently utilizes vocal words daily.
- An individual who has vocal communication in their repertoire should also display the ability to use the verbal operant echoic.
- Some individuals may have echolalia. These individuals may also be able to be taught to mand using vocal words.
- Vocal words are the most difficult to teach as one cannot physically “make” someone talk.
- Pre-requisite skills
  - Vocal imitation
  - Established vocal words in repertoire
- If the individual cannot say words clearly, write out phonetically how the individual will request for the given item.





# Benefits and Concerns of Vocal Words

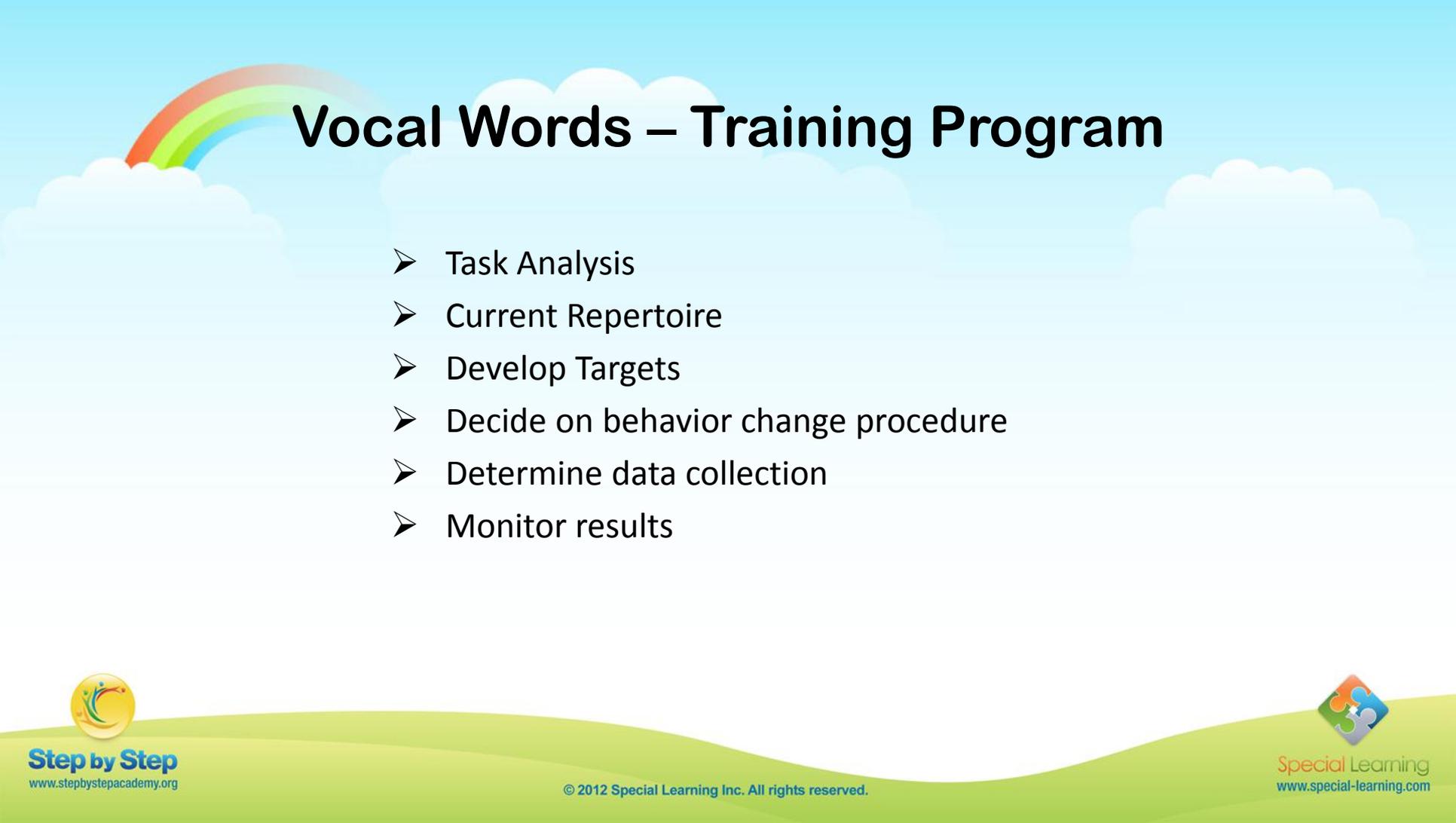
## Benefits

- Preferred method of communication
- Vocal words communicate rapidly
- Most individuals will be able to reciprocally communicate

## Concerns

- If vocal communication is not clear (pronunciation is poor) may be difficult to reciprocally communicate
- Cannot physically prompt a correct response





# Vocal Words – Training Program

- Task Analysis
- Current Repertoire
- Develop Targets
- Decide on behavior change procedure
- Determine data collection
- Monitor results





# Sign Language

- Sign Language may be appropriate for individuals who have demonstrated imitation skills and can tolerate physical prompting, particularly by their hands.
- A great resource is <http://aslbrowser.commtechlab.msu.edu/browser.htm>
  - Hint: Use the Find button under the Edit tab to enter in the desired word. Make sure you are on the corresponding letter's page. This saves time from scrolling through all the words listed.
- When starting a manding program using sign language, limiting to only American Sign Language is not necessary. Modifying the signs to fit the individuals capabilities will be important.





# Benefits and Concerns of Sign Language

## Benefits

- “Words” are always with the individual
- Sign Language can be nearly as “rapid” as vocal word exchanges
- Can communicate across a room
- Can prompt and use errorless learning to teach new signs

## Concerns

- Most individuals will not know the learner’s specific signs
- Communication may be limited in the community





# Sign Language – Training Program

- Task Analysis
- Current Repertoire
- Develop Targets
- Decide on behavior change procedure
- Determine data collection
- Monitor results





# Picture Exchange

- Picture Exchange is exchanging an icon or picture for the desired item.
- Pictures can be small or large depending on the needs of the individual
- Pictures can be drawn, clip art, or “real” pictures
- In addition to simply exchanging pictures, the individual may need to be taught to pick up the picture and approach an individual.
- Although I am describing a very brief and informal method of using pictures to communicate, there is a formal approach to this method. For the complete information on using the official Picture Exchange Communication System (PECS) visit <http://www.pecs.com/>





# Benefits and Concerns of Picture Exchange

## Benefits

- Can communicate with nearly everyone as pictures are universal
- Can prompt or use errorless learning to teach new mands

## Concerns

- Need to remember to “bring” words with you
- Communication is slower reciprocally with others





# Picture Exchange – Training Program

- Task Analysis
- Current Repertoire
- Develop Targets
- Decide on behavior change procedure
- Determine data collection
- Monitor results





# Augmentative Communication

- Augmentative communication utilizes technology to communicate
  - There are many types of augmentative communication devices. Some are very high tech, while others may be considered low tech.
  - If this is the communication modality that may be best, discuss augmentative communication devices with your Speech-Language Pathologist.
- Communicating via augmentative communication may require the learner to navigate a sequence of steps. Prerequisite skills of following two or more step directions and receptive language skills will be helpful
- Before starting, write down the specific sequence needed for the individual to navigate to make the request for each item being taught





# Benefits and Concerns of Low Tech Augmentative Communication

## Benefits

- Can communicate with nearly everyone as pictures are universal
- Can prompt or use errorless learning to teach new mands

## Concerns

- Need to remember to “bring” words with you
- Communication is slower reciprocally with others





# Low Tech Augmentative Communication Training Program

- Task Analysis
- Current Repertoire
- Develop Targets
- Decide on behavior change procedure
- Determine data collection
- Monitor results





# Benefits and Concerns of High Tech Augmentative Communication

## Benefits

- Can communicate with nearly everyone as pictures are universal
- Can prompt or use errorless learning to teach new mands

## Concerns

- Need to remember to “bring” words with you
- Communication is slower reciprocally with others





# High Tech Augmentative Communication Training Program

- Task Analysis
- Current Repertoire
- Develop Targets
- Decide on behavior change procedure
- Determine data collection
- Monitor results





# Pre-Requisite Communication Training

- The preceding communication modalities require an individual to demonstrate some basic social interaction and joint attention. Some individuals have not acquired such social skills and therefore none of the communication modalities discussed would be appropriate.
- When an individual is recommended to first begin working on pre-requisite communication training, the target outcomes include
  - Joint attention
    - Pointing to objects
    - Giving items to others
    - Taking items from others when offered
  - Increasing skills in all or some of the following areas:
    - Imitation
    - Echoics
    - Fine motor skills
    - Receptive language skills
    - Vocal exchange





# Pre-Requisite Communication Training Program Development

- Task Analysis
- Current Repertoire
- Develop Targets
- Decide on behavior change procedure
- Determine data collection
- Monitor results





# Choosing Reinforcers

- Write a list of 10 items the individual highly prefers
  - Rank in order of preference with number 1 being the most preferred
- Decide which items can realistically be used for training
  - The individual will not access the item except when he mands
- Place item in a visible, but out of reach location to increase manding opportunities
  - On a high shelf or in a clear container that the individual cannot open
- Items may need to be rotated monthly, weekly, daily, or even by session for some individuals who seem to “tire” of items easily.
  - Make items more desirable by avoiding satiation – keep the item away from the individual for an extended period of time so that the item is most desirable
- Some individuals may be able to be taught more than one item simultaneously





# Data Collection

- Why do behavior analysts collect data?
  - When developing a mand training program, you are developing an intervention to increase the number of mands a person emits. Data will tell you if your intervention is effective.
  - Choose what information you need
    - Frequency of mands per hour/session/day?
    - Number of opportunities vs. independent responses?
    - With item present or not present?
    - Motivating Operation?
- Why should parents or non-behavior analysts collect data?
  - Collecting data not only shows the progress the individual is making, but data keeps the “teachers” on track.
  - Sliding into old habits is sooo easy!
    - “Want Dis”
  - Simply keeping a general tracking sheet on the fridge or in another visible location can keep one on track!





# Mand Target Items List

Mand Training Program – Target List

Communication Modality: \_\_\_\_\_

Consumer Name: \_\_\_\_\_

Target Word/Mand	Topography	Intro Date	Mastery Date







# First Trial Probe Data Sheet

Mand Training Program – First Trial Probe Data Sheet

Consumer Name: \_\_\_\_\_ Communication Modality: \_\_\_\_\_ Teaching Procedure: \_\_\_\_\_

Notes:

Target:			Target:			Target:			Target:		
Staff	Date	+ Ph V G M	Staff	Date	+ Ph V G M	Staff	Date	+ Ph V G M	Staff	Date	+ Ph V G M
		+ Ph V G M									
		+ Ph V G M									
		+ Ph V G M									
		+ Ph V G M									
		+ Ph V G M									





# Frequency Data Collection Item Present / Item Not Present

Mand Training Program – Frequency Data Sheet: Item Present/Not Present

Consumer Name: \_\_\_\_\_ Communication Modality: \_\_\_\_\_ Teaching Procedure: \_\_\_\_\_

Notes:

Target:															
Staff	Date	Item Present	Item Not Present	Staff	Date	Item Present	Item Not Present	Staff	Date	Item Present	Item Not Present	Staff	Date	Item Present	Item Not Present



# Frequency Data Collection Prompted / Independent

Mand Training Program – Frequency Data Sheet: Prompted/Independent

Consumer Name: \_\_\_\_\_ Communication Modality: \_\_\_\_\_ Teaching Procedure: \_\_\_\_\_

Notes:

Target:															
Staff	Date	Prompted	Independ.												





# Shaping

- Shaping is a powerful technique in which behavior can be transformed by first reinforcing approximations (simpler forms of the target behavior).
- If the individual is not independent in using the targeted mand within a couple weeks, consider changing the topography to an easier form
- Eventually, shape this behavior into the actual desired target behavior



## Shaping examples across communication modalities

Vocal Words	Sign Language	Picture Exchange	Augmentative Communication Device
“Aaa”	Touch fingers to cheek	Takes apple icon from person, gives to person	Presses speak (apple has already been selected for him)
“Aaa – puh”	Touch index finger to cheek	Choose apple icon from a single presentation being handed by person, gives to person.	touches apple, presses speak
“Aaa – poh”	Touch index finger knuckle to cheek	Choose apple icon from an array being handed by person; gives to person	Touches fruit group, touches apple, presses speak
“Apple”	Index finger knuckle touching and turning into cheek	Choose apple icon from array, walk to person, and give to person	Touches food group, touches fruit group, touches apple, presses speak



# Communication Assessment

- Conducting an assessment will gauge what skills and sounds the individual currently has in his repertoire , and will also demonstrate which verbal operants the individual currently utilizes.

## Communication Assessment

Consumer Name: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_

During the observation, record the word heard and how the individual pronounces the word. Using frequency counts, record how often the word occurs across the verbal operants. Test each operant the same number of trials (minimum of 5 trials). Directions for testing each operant is listed below:

**Mand:** Entice with a preferred item. Deliver the item contingent upon a correct vocalization of the item.

**Tact:** Hold up the item and ask "What is it?"

**Intraverbal:** Ask multiple questions related to the desired item (the item would not be visible). Example of such questions for "car" may include "Tell me something you drive", "what says vroom?", "what has wheels?"

**Echoic:** Say the given word and wait for the individual to repeat the word

Word	Current pronunciation/topography	Mand	Tact	Intraverbal	Echoic	Total Across Operants

Word most frequently observed: \_\_\_\_\_

Sounds most frequently pronounced: \_\_\_\_\_





# Resources

- <http://aslbrowser.commtechlab.msu.edu/browser.htm>
- <http://www.pecs.com/>
- <http://verbalbehavior.pbworks.com/w/page/8131340/Datasheets%20and%20templates#Mands>





# References

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# ***Mand Training across Modalities: Effective Methods to Teach Functional Communication***



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**These downloadable tools are available at:**

**<http://www.special-learning.com/webinar/july/manding/resources>**

- ***Communication Assessment***
- ***Communication Modality Assessment***
- ***DTT Data Sheet***
- ***First Trial Data Sheet***
- ***Frequency Item Present – Not Present***
- ***Frequency Prompt Independent Data Sheet***
- ***Mand Training Target Items List***
- ***Simple Manding Data Collection***
- ***Task Analysis***

***Mand Training across Modalities:  
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