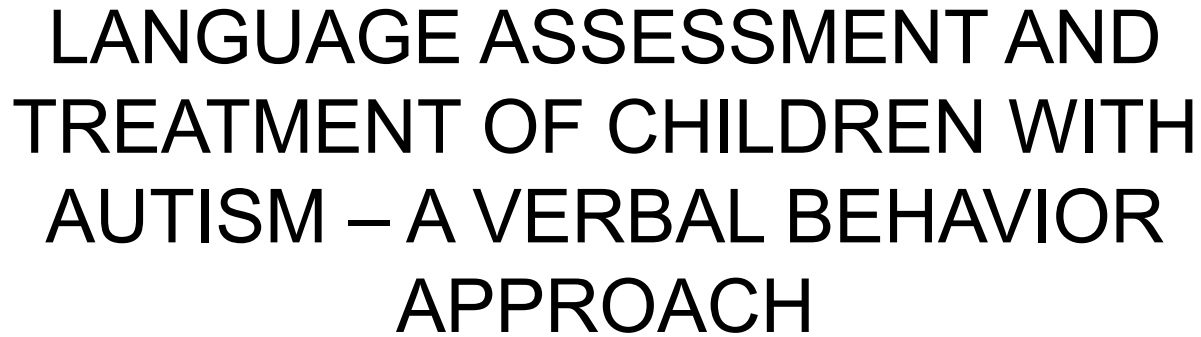# LANGUAGE ASSESSMENT AND TREATMENT OF CHILDREN WITH AUTISM – A VERBAL BEHAVIOR APPROACH

By Lanre Duyile, MPBA, BCBA

Conference Objective

- Furtherance of the central message – Beyond Diagnosis

- An option for parents and teachers in the treatment of children with language delays

- Describe what Verbal Behavior is

- Describe the basic units of language – Verbal Operants

- Describe the assessment tools that are in use

- Limitations and Who can provide these services

Figure 2-1
A filled-out sample of the Milestones Master Scoring Form.

Sample VB-MAPP Scoring Form

A few Scenarios…

- John wants the attention of his Caregiver but does not know how to get it but when he slaps himself, she shows up.

- Jane prefers to be in her room but does not know how to ask but when she bangs her head on the wall, we send her to her room to calm down

A few Scenarios…

- Chidi bites other children each time they try to play with his toys

- Bola hits herself on the cheek and it is becoming a concern for her parents

A few Scenarios…

- Shehu flips the therapy table during sessions and each time he does, the Therapist stops asking him to complete a task

- Omoruyi covers his ears with both hands during recess and when other kids are playing tag

A few Scenarios…

- In all these scenarios, the Behaver is making efforts to communicate

- However, most typically developing children do not engage in these behaviors; they use words

A few Scenarios…

- So why do some children and even adults with special needs engage in these behaviors?

- There are several factors involved but one major factor is COMMUNICATION

The Impairments

●Recall that to get a diagnosis of autism or developmental disability, there is an impairment in communication

●Specifically with autism: to get a diagnosis, there has to be impairment in communication, behavior and social interaction

The Impairments

- So what specific teaching do we provide to people who have impairment in communication?
- That brings me to the core of my message at this year's conference
- How do we assess where a child is in terms of language and other related skills?

Language Intervention

Traditional Language Assessment	Behavioral Language Assessment
Cognitive and biological variables are the primary sources of control for verbal behavior	Environmental variables are the primary sources of control for verbal behavior
There is no distinction on teaching expressive and receptive language	Speaker and listener behaviors are separate repertoires to be taught
Based on the expressive-receptive distinction mediated by cognitive processors	Based on verbal operants mediated by environmental factors
The unit of analysis is words, phrases, sentences and mean length of utterances	The unit of analysis involves ABC relation of the elementary verbal operants
Focus is on formal properties of language – phonemes, syntax, semantics, nouns, verbs, pronouns, adjectives, etc	Focus is on functional properties of language – what causes/maintains verbal behavior

Behavioral Language Intervention

- Why do we need a language assessment and intervention?

- We need to determine where a child is operating compared to typically developing counterparts

- We need to identify language acquisition and learning barriers

Behavioral Language Intervention

●BF Skinner did a lot of groundbreaking research and analysis of human behavior and language (1953, 1957)

●His work form the basis of the behavioral approach to language assessment and instruction

●Skinner considered the term 'Speech' but it was too limiting (narrow); he considered the word 'language' but found that it was general

Behavioral Language Intervention

● He coined the term **Verbal Behavior** and it is not restricted to vocal speech only.

● It includes all forms of communication such as sign language, gestures, pictures, written language, etc.

● Language is a learned behavior mediated by environmental factors

Behavioral Language Intervention

●The focus of verbal behavior is on individual speakers and listeners rather than a whole language community. Emphasis is on speaker behavior – the person doing the talking

● Speaker and Listener behaviors both require different skills

●The unit of analysis are what Skinner called the basic verbal operants

Basic Elementary Verbal Operants

- The verbal operants are the basic/elementary forms of language needed for functional communication

- A complete language repertoire is composed of different types of speaker and listener behaviors such as the **Mand, Tact and Intraverbal**

- These 3 are traditionally classified as 'expressive language'.

- Using 'expressive language' masks important distinction between the 3 functionally independent verbal operants.

Basic Elementary Verbal Operants - MANDS

● 1. Mand from Com**mand**, De**mand**, Repri**mand**:

● A verbal behavior under the functional control of motivating operations (what a person wants) and specific reinforcement (what the person gets).

● Motivation can be strong or weak, learned or unlearned, to get an item or get rid of an item

Basic Elementary Verbal Operants - MANDS

- For example, a child enjoys being on a swing and wants to go on the swing but parent/Caregiver is busy.

- She may cry, use gestures, push someone, bite someone – all these behaviors are possible mands for getting pushed on the swing. We need to make them appropriate mands.

Basic Elementary Verbal Operants - MANDS

- Mands are the first type of communication a child develops – crying when in need of food, comfort, when in pain, cold or afraid, etc.
- These are very important for early language development

Basic Elementary Verbal Operants - MANDS

- Typically developing children soon learn to replace crying with words or other standard forms of communication

- Atypical children may not learn to replace crying with words

- Manding lets children control the delivery of reinforcers to them and also begins to establish the speaker and listener roles that are essential for language development

Basic Elementary Verbal Operants - MANDS

- Mand is a strong form of verbal behavior in that helps a child satisfy an immediate need leading to an increase in this form of behavior

- Eventually, the child learns to mand for multiple different reinforcers including asking 'w' questions (who, what, and where)

Basic Elementary Verbal Operants - MANDS

- At this level, mand play a critical role in social interaction, conversations and other aspects of human activity

- Note that all children (typical and atypical) have basic needs and must be able to communicate such in some way. If not ……..

Basic Elementary Verbal Operants - MANDS

●An Assessor therefore needs to establish a child's current manding skills.

●For example, does the child use words, gestures, signs or pictures to communicate needs?

●Does the child emit challenging behaviors to get his needs met?

Basic Elementary Verbal Operants - MANDS

- Are the behaviors dependent on prompts (echoic or yes/no prompts)?

- How many mands are present?

- When the manded item is provided, does the child use/consume the item

- Answers to these questions inform the individualized mand program to be developed

Basic Elementary Verbal Operants - TACT

- Tact from con**TACT** with the environment: The speaker here names things, actions, attributes in the immediate physical environment.

- The speaker has direct contact with non-verbal stimulus through any of their senses

Basic Elementary Verbal Operants - TACT

- For example, a child says 'chicken' because he sees chicken or if a child hears a train hooting and she says 'train'

- This is similar to 'expressive labeling' in some language training programs for children with language delays

Basic Elementary Verbal Operants - TACT

- Non-verbal stimuli abound in the child's environment and they should learn to 'tact' those.

- For example, Caregivers' names, toys, household items

Basic Elementary Verbal Operants - TACT

- The tacts may be:
- Nouns, adjectives, prepositions, etc OR
- Simple or complex – a bag or Gucci bag OR
- Have multiple properties – The red fire truck under the little table

Basic Elementary Verbal Operants - TACT

- Observable or unobservable – a phone or pain

- Other properties such as colour and size

- Note that tact only training is not advisable as it may not lead to a development of either mands or intraverbal

- If a child has a strong echoic repertoire, tact training may be easier. E.g, say book and the child says 'book'

Basic Elementary Verbal Operants - TACT

- An Assessor needs to determine a child's current tacting skills

- For example, when presented with an item, action or person, can the child provide the name?

- How simple or complex are the tacting skills – car vs blue car vs big blue car?

- In which areas is control strong and where is it weak?

Basic Elementary Verbal Operants - INTRAVERBAL

- Intraverbal is a type of language where a speaker verbally responds to the words of others (including the speaker).

- Develops around 2 years of age. It involves talking about things and activities that are present or not present

- For example, a child saying 'star' as a result of someone saying twinkle, twinkle little ….

- Or answering the question 'what did you eat this morning'?

Basic Elementary Verbal Operants - INTRAVERBAL

- Intraverbal behavior is another important domain that forms the basis of many intellectual repertoires

- In this domain, a verbal stimulus evokes a verbal response that does not have point-to-point correspondence with the verbal stimulus

Basic Elementary Verbal Operants - INTRAVERBAL

- Point-to-point correspondence means that the verbal stimulus and verbal response match or do not match each other.

- Intraverbal behavior facilitates the acquisition of other verbal and non-verbal behavior and it prepares the speaker to respond rapidly and accurately with respect to words and sentences

Basic Elementary Verbal Operants - INTRAVERBAL

- This skill needs to be specifically taught. Just hoping that it will develop from mand and tact training may lead to rote responding, negative behaviors or failing to verbally respond to verbal stimuli or social isolation

The First 3 Operants

- These 3 domains (verbal operants) are different, functionally independent and need to be specifically programmed for because they have separate antecedent and consequent variables

- For example, a child may say water when he sees a glass of water (tact) or say water because he needs water (mand) or say water in response to what do you drink? – The same words (verbal behavior) but different antecedents and consequences

Basic Elementary Verbal Operants - THE LISTENER

- Serves as audience to the speaker.

- Follows instructions or complying with the demands of others.

- Includes paying attention to people when they are speaking

- E.g. Getting your cup when told 'pick up your cup'

- consequates the speaker behavior.

Basic Elementary Verbal Operants - THE LISTENER

● The assessment of listener behavior is to determine if a speaker's verbal behavior evokes a specific non-verbal response from the child. For example, clap your hands, pick the paper, give me the pen, etc. This can be extended to responding by function, feature and class (FFC)

Basic Elementary Verbal Operants - ECHOIC

- Speaker repeats the sounds, auditory verbal stimulus, words and phrases of another speaker

- The ability to echo sounds, phonemes and words of others is essential for aspects of language development

Basic Elementary Verbal Operants - IMITATION

- Like echoic, this is copying someone else's motor movements (as they relate to sign language)

Basic Elementary Verbal Operants - TEXTUAL

●Reading written words. E.g. saying belt because you see the written word 'belt'

Basic Elementary Verbal Operants - COPYING-A-TEXT

- Writing the word 'belt' because someone else wrote the word 'belt'

Basic Elementary Verbal Operants - TRANSCRIPTION

- Spelling words spoken to you. Writing 'belt' because you hear the word 'belt'

Basic Elementary Verbal Operants - INDEPENDENT PLAY

●2 types of play – Independent Play: spontaneously engaging in behavior that is automatically reinforcing. No outside reinforcement needed

Other Milestone Domains-Social Behavior and Social Play

- Social behavior and social Play: much of social behavior involves language such as mands for things, tacting and intraverbal relations

- Social play involves interaction with others and the reinforcement is socially mediated by others in the environment i.e. role playing, pretend play and table top activities

Other Milestone Domains-Spontaneous Vocal Behavior

● Includes vocal play and vocal babbling

Other Milestone Domains-
Classroom Routine and Group Skills

● Important group skills are taught here such as:

● Copying other children – line up when others do

● Turn taking

● Following group instruction

● Self help skills

● Independence and self direction

Other Milestone Domains-Linguistic Structure

- The emergence of more sophisticated language development

- Includes articulation, vocabulary, mean length of utterance (MLU), appropriate syntax and use of various modifiers

Milestone Domains-Math

- This includes measuring activities, counting, identifying specific numbers, tacting numbers, matching quantities
- This occurs on level 3 of the VB-MAPP

The ABLLS and VB-MAPP

- The ABLLS stands for Assessment of Basic Language and Learning Skills developed by James W Partington, Ph.D., BCBA and Mark Sundberg, Ph.D., BCBA (1998, 2006)

- It is based on Skinner's work on verbal behavior

- It is an assessment tool, a curriculum guide and skills tracking system for children with language delays

- It contains a task analysis of many of the skills necessary to communicate successfully and relate with others

The ABLLS and VB-MAPP

- VB-MAPP stands for Verbal Behavior Milestones Assessment and Placement Program developed by Mark L Sundberg, Ph.D., BCBA-D
- The VB-MAPP is also based on Skinner's work on Verbal Behavior

The VB-MAPP Assessment

- The assessment tool contains 16 separate measurements of language and language related skills

- These are presented in 3 linguistic levels

- Level 1 contains 9 measures that are designed to approximate what a typical child between ages 0 -18 months will exhibit

The VB-MAPP Assessment

- Level 2 contains 12 measures that are designed to approximate what a typical child between ages 18 - 30 months will exhibit

- Level 3 contains 13 measures that are designed to approximate what a typical child between ages 30 - 48 months will exhibit

The VB-MAPP Assessment

●Some measures are present in all 3 levels such as mand, tact and listener repertoires while others are contained in only relevant levels such as babbling for level 1, intraverbal and listener responding by FFC for levels 2 and 3 and reading, writing and math for level 3

Figure 2-1
A filled-out sample of the Milestones Master Scoring Form.

Sample VB-MAPP Scoring Form

The VB-MAPP Assessment

- An 18 month old child (level 1) typically emits about 10 mands, 10 tacts and understand about 20 words as a listener. At this level, a score of 5 is the maximum achievable

- This assessment may also be modified to accommodate teenagers and adults who are experiencing language delays.

The VB-MAPP Assessment

● Practitioners must be properly trained in the principles of ABA to be able to complete a language assessment using the verbal behavior approach.

● The Assessor must be able to determine the 'operant level' of the child. That is the current level of skills present – baseline

The VB-MAPP Assessment

- Formal or Informal Testing: In informal testing, the Assessor may observe the child during social play to see if the skills are present.

- However, in formal testing, a child is specifically presented with a task and his response is recorded.

- For example, in the Tact milestone, present an item to the child with the verbal prompt what is that?

The VB-MAPP Assessment

● Observation: involves watching for the skill to occur in any number of environmental situations without any stimulus presentation from the Assessor.

● Timed Observation: In order to receive a score, the child needs to emit the target behavior within the time frame that is prescribed without adult prompt

The VB-MAPP Assessment

- Reinforcement and Scoring: reinforcement should be provided when target skill/behavior is emitted. Assessor may score approximations as correct and note the approximation in the scoring sheet

- Testing Environment: should be conduct with minimal disruption to everyday routine

- Testing Sequence: skills should be tested in the sequence presented in the skill areas

Identifying Barriers to Learning

- Identifying barriers to learning is essential for the success of any instructional design

- This must be conducted simultaneously with the assessment of milestones

- Some barriers (such as disruptions, self stimulation, escape problems, no eye contact and hyperactivity) are obvious and reported by Caregivers

Identifying Barriers to Learning

●Other barriers are not as obvious such as weak MOs, prompt dependency, impaired mands, OCB, defective play and social skills, scrolling, failing to generalize, defective verbal behavior (form vs function)

Day 1 Conclusion

- Verbal Behavior is an evidence-based language assessment and treatment for individuals with language impairment

- This presentation does not minimize the need for other forms of professional intervention – Speech Pathology, Occupational Therapy, etc.

- Whatever intervention you settle for, make sure it is evidence-based

Day 1 Conclusion

- Make sure the Therapist or professional is trained and has a body of successful work to reference

- All the best to you and the children and adults you support

- Thank you for listening

- Thanks to GTB for the opportunity to share my experience and lend my voice. There is lot of work to be done.

Questions

●Thank you for spending your time with me

●Contact:

●Lanre Duyile

●Behaviorprise Consulting Inc, Toronto, Canada.

●lanre@behaviorprise.com or lanreduyile@gmail.com

●647-927-3567

END OF DAY 1

A note to the Parent/Therapist

- After assessment, decide as to where to begin intervention

- Develop personal goals for the child

- Design the specific teaching program for the child

A note to the Parent/Therapist

- Determine how to measure program progress and make changes as required
- Remember that creating a curriculum or teaching program without an assessment is malpractice

Tips for Assessors

● Complete reinforcer assessment

● Establish rapport with child

● Maintain control of test items and reinforcers

● Reinforce correct responses

● Reinforce desirable behaviors

Tips for Assessors

- Use both preferred items and novel items that may be of interest to the child

- Smile when you praise/reinforce

- Choose and use reinforcing activities that are age appropriate

Tips for Assessors

- Follow the child's motivating operations when testing early mand repertoire

- Use gender neutral items or those specific to the child's gender

Tips for Assessors

- Use an appropriate level of enthusiasm
- Allow time for breaks
- Don't allow the child to play with most powerful reinforcers during break
- Acknowledge and respond to appropriate spontaneous vocalizations and gestures

Tips for Assessors

- ●Keep the session interesting and pair yourself with reinforcers

- ●Intersperse known tasks with more challenging tasks

- ●Occasionally provide free reinforcers

- ●Avoid excessive prompts

Tips for Assessors

- Give the child time to respond – 3-5 seconds

- When necessary, repeat question or task presentation

- Use least to most prompting as necessary

- Always end testing session with a correct response and on a positive note

Testing Materials

- Suggested materials needed for Level 1:

- Pictures of family members, caregivers, items in the child's home or classroom

- Common objects such as toothbrush, shirt, pants, spoon, cup

- Age-appropriate Puzzles

- Blocks

- Other items you deem fit for each child

Testing Materials

- Suggested materials needed for Level 2:

- Items to encourage manding such as track without a train, juice box with no straw, food with no cutlery, bubbles without the wand

- Pictures for tacting

- Matching to sample tasks

Testing Materials

- Identical items such as spoons, toy cars,

- Set of similar colored items

- Set of similar shapes

- Set of similar but not identical items such as soccer ball and basketball

- Children's scissor, crayons and paper

- Items or recording of environmental sounds such as baby crying, bell, animal sounds

- Any other that you deem fit for the child

Testing Materials

- Suggested materials needed for Level 3:
- Number cards from 1 to 5
- Cards with shapes and colours
- Block design cards
- Alphabet letter cards
- Step and short story seriation cards

Testing Materials

- Items that are samples of relative adjectives such as light and heavy, clean and dirty, big and small, hot and cold, etc

- Lined paper and pencil

- Arts and craft supplies

- Toys for independent play

- Child clothing or dressing doll with zipper, snap, button, Velcro, buckle

- Developmentally appropriate activity book

- Any other that you deem appropriate

Scoring the VB-MAPP Forms

- There is space on the form for four (4) separate administrations

- The VB-MAPP should be administered once per year or school year

- The Master Scoring Form is used to create a student profile across all domains and levels

- Only score a skill as correct if the child spontaneously emits it or an adult can reliably evoke the behavior on demand
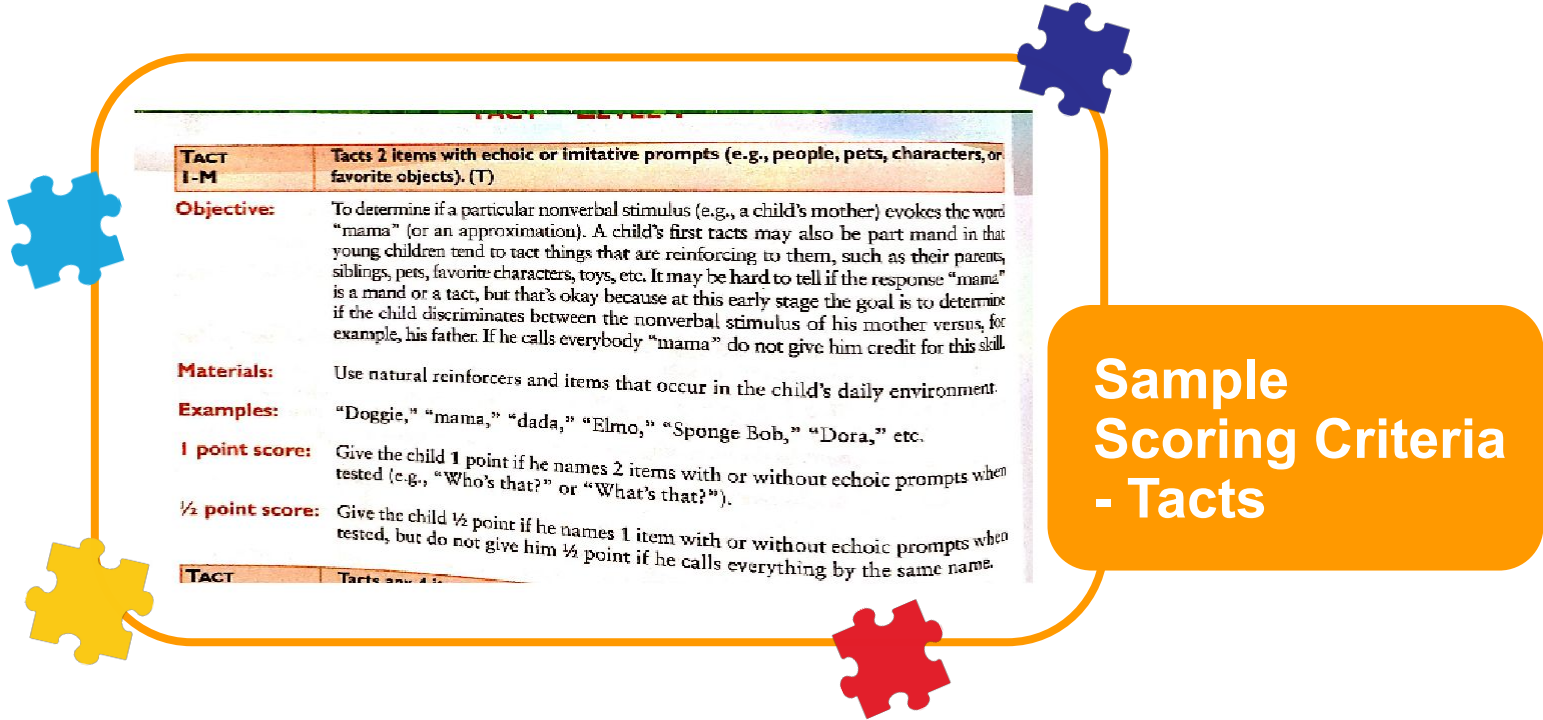
Scoring the VB-MAPP Forms

- There are 4 boxes for each individual item (task area) representing 4 administration of the assessment

- The first box is for baseline scores

- There are 3 options for scoring each skill – 0, ½ or 1

- Score the child based on the scoring criteria provided in the VB-MAPP.

- If score is zero or item is not tested, place 0 in the box

Scoring the VB-MAPP Forms

●Once completed, add up the scores and place the total in the 'Total score section at the top of the skill area. The total all the scores for each area and each level and transfer total score to the appropriate section on the Milestone Master scoring form

●Fill the Milestone form using a different colour for each administration of the VB-MAPP by coloring the appropriate box with the colour designated

Scoring the VB-MAPP Forms

- If the score is 1, fill in the whole box

- If the score is 1/2, fill in the bottom half of the box and leave the top half empty

- If the score is 0, leave the whole box blank

- The small circle at the bottom of each section can be used to indicate that the skill is tested

Theme
Life Beyond the Diagnosis

GTCO

TACT I-M	**Tacts 2 items with echoic or imitative prompts (e.g., people, pets, characters, or favorite objects). (T)**
Objective:	To determine if a particular nonverbal stimulus (e.g., a child's mother) evokes the word "mama" (or an approximation). A child's first tacts may also be part mand in that young children tend to tact things that are reinforcing to them, such as their parents, siblings, pets, favorite characters, toys, etc. It may be hard to tell if the response "mama" is a mand or a tact, but that's okay because at this early stage the goal is to determine if the child discriminates between the nonverbal stimulus of his mother versus, for example, his father. If he calls everybody "mama" do not give him credit for this skill.
Materials:	Use natural reinforcers and items that occur in the child's daily environment.
Examples:	"Doggie," "mama," "dada," "Elmo," "Sponge Bob," "Dora," etc.
1 point score:	Give the child **1** point if he names 2 items with or without echoic prompts when tested (e.g., "Who's that?" or "What's that?").
½ point score:	Give the child ½ point if he names 1 item with or without echoic prompts when tested, but do not give him ½ point if he calls everything by the same name.
TACT	Tacts any 4 i...

Sample Scoring Criteria - Tacts

Sample Assessment Form - Mand

TACT

Does the child tact people, objects, body parts, or pictures?

TOTAL SCORE:

ASSESSMENT			
1st	2ND	3RD	4TH

1st 2ND 3RD 4TH — 1. Tacts 2 items with echoic or imitative prompts (e.g., people, pets, characters, or favorite objects) (T)

1st 2ND 3RD 4TH — 2. Tacts any 4 items without echoic or imitative prompts (e.g., people, pets, characters, or other objects) (T)

1st 2ND 3RD 4TH — 3. Tacts 6 non-reinforcing items (e.g., *shoe, hat, spoon, car, cup, bed*) (T)

1st 2ND 3RD 4TH — 4. Spontaneously tacts (no verbal prompts) 2 different items (TO: 60 min.)

1st 2ND 3RD 4TH — 5. Tacts 10 items (e.g., common objects, people, body parts, or pictures) (T)

Comments/notes:

6   VB-MAPP   Milestones Assessment Level 1

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Sample Assessment Form - Tact

Milestones Assessment: Level 1 (0-18 months)

(T) = Direct testing;   (O) = Observation;   (E) = Either testing or observation;   (TO) = Timed observation

LISTENER RESPONDING

TOTAL SCORE:

ASSESSMENT
| 1ST | 2ND | 3RD | 4TH |

Does the child attend to and respond to the words spoken by others?

1. Attends to a speaker's voice by making eye contact with the speaker 5 times **(TO: 30 min.)**

2. Responds to hearing his own name 5 times (e.g., looks at the speaker) (T)

3. Looks at, touches, or points to the correct family member, pet, or other reinforcer when presented in an array of 2, for 5 different reinforcers (e.g., Where's Elmo? Where's mommy?) (E)

4. Performs 4 different motor actions on command, without a visual prompt (e.g., Can you jump? Show me clapping.) (T)

5. Selects the correct item from an array of 4, for 20 different objects or pictures (e.g., Show me cat. Touch shoe.) (T)

Comments/notes:

Sample Assessment Form - Listener Responding

ASSESSMENT

1ST	2ND	3RD	6TH

TOTAL SCORE: 4½

TACT

Does the child tact people, objects, body parts, or pictures?

1. Tacts 2 items with echoic or imitative prompts (e.g., people, pets, characters, or favorite objects) (T) — 1

2. Tacts any 4 items without echoic or imitative prompts (e.g., people, pets, characters, or favorite objects) (T) — 1

3. Tacts 6 non-reinforcing items (e.g., shoe, hat, spoon, car, cup, bed) (T) — 1

4. Spontaneously tacts (no verbal prompts) 2 different items (O) — 1

5. Tacts 10 items (e.g., common objects, people, body parts, or pictures) (T) — ½

Comments/notes:

VB-MAPP

Sample Completed Assessment Form

Sample VB-MAPP Milestone Scoring Form

Questions

●Thank you for spending your time with me

●Contact:

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●647-927-3567

References

- A Language and Social Skills Assessment Program for Children with Autism and other Intellectual Disabilities Guide, 2nd Edition, VB-MAPP, Sundberg, M, 2014
- A Language and Social Skills Assessment Program for Children with Autism and other Intellectual Disabilities Protocol, 2nd Edition, VB-MAPP, Sundberg, M, 2014