Behavior Analysis in Language Development Programs for Students with Autism

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The Importance of Language and Social Behavior

- The primary focus of an intervention program for children with special needs usually should be on the development of effective language and social skills, and the reduction of negative behaviors
- There clearly are several other areas in need, such as self-care, visual motor skills, academics, fine and gross motor, etc., but language and social skills, as well as barriers to learning are typically the most significant deficits, and careful training is the key to the most significant gains

Assessment of an Individual Child's Needs

- Our first task is to identify the existing skills of each child
- Our next task is to identify the language, social, behavioral, and learning barriers that are preventing more rapid learning
- The failure to conduct an appropriate assessment results in one of the biggest problems in programs that serve children with autism: An inappropriate curriculum
- We need a tool that is easy to use and will provide teachers, parents, and staff with the necessary information to develop an appropriate intervention program



A Behavioral Approach to Language

- Behavioral psychology has a lot to offer those who work with children with autism
- Basic teaching procedures and methodology derived from Applied Behavior Analysis (e.g., prompting, fading, shaping, chaining, reinforcement, extinction)
- These procedures and methods have a solid research foundation that can be easily found in over 1500 empirical studies that have been conducted over the past 60 years
- The functional analysis of behavior (e.g., aggression, SIB)
- Skinner's functional analysis of verbal behavior (1957)

A Functional Analysis of Verbal Behavior: The Basic Principles of Operant Behavior Stimulus Control (SD) Reinforcement Motivating Operation (MO/EO) Punishment Extinction Conditioned reinforcement Conditioned punishment Intermittent reinforcement

Major Components of a Behaviorally **Based Intervention Program**

- The procedures and concepts derived from applied behavior analysis (ABA)
- A language assessment and language curriculum based on Skinner's (1957) analysis of verbal behavior
- The developmental norms demonstrated by typical children



The Behavioral Classification of Language (Skinner, 1957)

- Mand: Asking for reinforcers. Asking for "shoes" because you want your shoes
- Tact: Naming or identifying objects, actions, events, etc. Saying "shoes" because you see your shoes
- Listener: Following instructions or complying with the mands of others. Touching a picture of shoes when asked "Touch the shoes"
- Echoic: Repeating what is heard. Saying "shoes" after someone else says "shoes"



The Behavioral Classification of Language

- Intraverbal: Answering questions or having conversations where your words are controlled by other words. Saying "shoes" because someone else says "What do you need to put on your feet?"
- Imitation: Copying someone's motor movements (as they relate to sign language)
- Copying-a-text: Writing "shoes" because someone else writes "shoes"
- Textual: Reading words. Saying "shoes" because you see the written word "shoes"
- Transcription: Writing and spelling words spoken to you. Writing "shoes" because you hear "shoes" spoken



Verbal Behavior Milestones Assessment and Placement Program: The VB-MAPP

- Based on Skinner's (1957) analysis of verbal behavior
- · Based on typical language development milestones
- An assessment should probe a representative sample of a repertoire
- · Typical verbal milestones provide the frame for the sample
- By identifying milestones, as opposed to a whole task analysis, the focus can be sharper, the direction clearer
- Milestones can help to avoid focusing on minor steps, and targeting skills for intervention that are developmentally inappropriate

Verbal Behavior Milestones Assessment and Placement Program: The VB-MAPP

- Field test data from approximately 75 typically developing children
- · Field test data from over 200 children with autism
- Based on the body of empirical research that provides the foundation of Behavior Analysis
- Based on the empirical research on Skinner's analysis of verbal behavior

Verbal Behavior Milestones Assessment and Placement Program: The VB-MAPP

- There are five components of the VB-MAPP
- The VB-MAPP: Milestones Assessment contains 170 verbal behavior milestones across 3 developmental levels (0-18 months, 18-30 months, 30-48 months) and 16 different verbal operants and related skills
- The VB MAPP: Barriers Assessment examines 24 common learning and language barriers faced by children with autism
- The VB MAPP: Transition Assessment evaluates a child's ability to learn in a less restrictive educational environment across 18 different skills

Verbal Behavior Milestones Assessment and Placement Program: The VB-MAPP

- The VB-MAPP: Skills Task Analysis and Tracking provides a further breakdown of the different skill areas in the form of a checklist for skills tracking
- The VB-MAPP: Placement and IEP Goals provides recommendations for program development for children based on their VB-MAPP profiles, and their specific scores for each of the 170 milestones and the 24 Barriers. In addition, over 200 IEP objectives directly linked to the skills and barriers assessments, and a verbal behavior intervention program are provided



Verbal Behavior Milestones Assessment and Placement Program: The VB-MAPP Skills Assessment

- · The 16 skills assessed on the VB-MAPP include:
- The elementary verbal operants (e.g., echoic, mand, tact, intraverbal)
- · The listener skills
- Vocal output
- · Independent play
- · Social skills and social play
- · Visual perceptual skills and matching-to-sample
- · Grammatical and syntactical skills
- · Group and classroom skills
- · Beginning academic skills



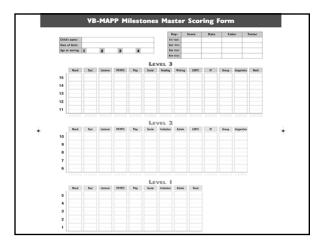
Verbal Behavior Milestones Assessment and Placement Program:

The VB-MAPP Skills Assessment

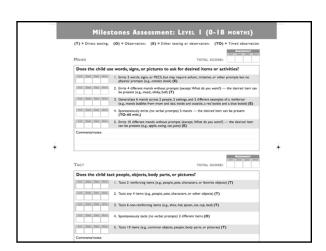
- · The milestones are broken into three developmental levels (see Skills Form)
- Level 1: 0-18 months
- Level 2: 18-30 months
- Level 3: 30-48 months
- The scores for each skill are approximately balanced across each level $% \left(1\right) =\left(1\right) \left(1\right) \left$
- There are 5 items and 5 possible points for each skill area (e.g., level 1, tact)
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 There are four boxes in all sections for four separate administrations

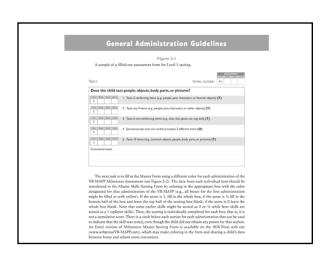
(See Tact Assessment Form Sample)

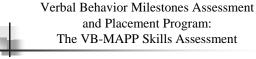
- Each of the 170 items is scored 0, 1, or 1/2 based on the criteria in the VB-MAPP instruction manual
- Looking for the operant level; If the skill is below the operant level score quickly and move on, if it is close to the operant level, test it



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- · The total for the five items is marked on the top of each skill area
- The totals for each skill area are added for all three levels and placed on the VB-MAPP Scoring Form
- The total score on the Echoic sub-test is converted to a milestone score on the VB-MAPP form
- The specific items on the VB-MAPP have been adjusted many times based on the field-test data (See VB-MAPP Assessment Forms)

Verbal Behavior Milestones Assessment and Placement Program: The VB-MAPP Barriers Assessment

- It is important to find out what a child can do (The VB-MAPP Milestones Assessment), but also important to know what they can't do, and analyze why they can't do it
- The VB-MAPP Barriers Assessment is a tool that is designed to identify and score 24 different learning and language acquisition bersion.
- Once a specific barrier has been identified, a more detailed descriptive and/or functional analysis of that problem is required
- There are many ways that a verbal repertoire or related skill can become Impaired, and an individualized analysis will be necessary to determine what the nature of the problem is for a specific child, and what intervention program might be appropriate



The VB-MAPP Barriers Assessment

- There are several different types of barriers that can affect learning and language development
- Strong and persistent **negative behaviors** that impede teaching and learning (e.g., non-compliance, tantrums, aggression, SIB)
- Verbal operants or related skills that are absent, weak, or in some way impaired (e.g., echolalia, rote intraverbals, "mands" that are really tacts)
- Social behavior and the speaker-listener dyad can also become impaired for a variety of reasons (e.g., limited motivation for social interaction, impaired mands, impaired listener skills)



The VB-MAPP Barriers Assessment

- Fundamental barriers to learning that must be analyzed and ameliorated (e.g., the failure to generalize, weak motivators, prompt dependency)
- Specific behaviors that can compete with learning (e.g., selfstimulation, hyperactive behavior, or sensory defensiveness)
- Problems related to physical, medical, or biological barriers that
 must be overcome or accounted for in some way (e.g., articulation or
 motor imitation errors may be due to physical limitations, matching
 errors may be due to visual limitations, listener errors may be related
 to hearing problems, poor performance may be due to illness, sleep
 deprivation, severe allergies, pain, etc.)



The VB-MAPP Barriers Assessment

- 24 Common Learning and Language Acquisition Barriers
- · Behavior problems
- · Instructional control (escape/avoidance)
- · Impaired mand
- · Impaired tact
- · Impaired motor imitation
- · Impaired echoic (e.g., echolalia)
- · Impaired matching-to-sample
- · Impaired listener repertoires (e.g., LD, LRFFC)



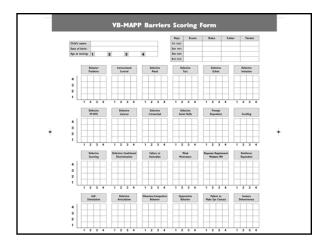
The VB-MAPP Barriers Assessment

- · Common Learning and Language Acquisition Barriers
- · Impaired intraverbal
- Impaired social skills
- · Prompt dependency, long latencies
- · Scrolling responses
- Impaired scanning skills
- Failure to make conditional discriminations (CDs)
- · Failure to generalize
- · Weak or atypical MOs



The VB-MAPP Barriers Assessment

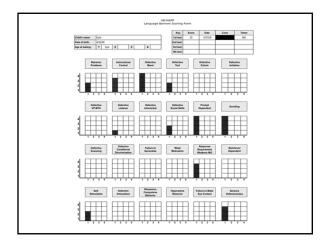
- · Common Learning and Language Acquisition Barriers
- · Response requirements weakens the MO
- · Reinforcer dependent
- · Self-stimulation
- · Articulation problems
- · Obsessive-compulsive behavior
- Hyperactivity
- · Failure to make eye contact
- · Sensory defensiveness





Verbal Behavior Milestones Assessment and Placement Program: The VB-MAPP Barriers Assessment

- · Scoring the VB-MAPP Barriers Form
- Rate the child on the VB-MAPP Barriers Assessment Form using a Likert-type scale of 0 to 4 $\,$
- A score of 0 or 1 would indicate that there are no significant barriers, and a formal intervention plan may not be required.
- A score of 2, 3, or 4 would indicate that there is a barrier, that probably should be addressed as part of the intervention program
- For some children the immediate focus of the intervention program is on removing a particular barrier, rather than language instruction
- The most common immediate barriers to remove involve instructional control problems, or other behavior problems





Verbal Behavior Milestones Assessment and Placement Program: The VB-MAPP Barriers Assessment

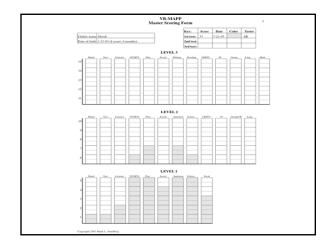
· Impaired Verbal Behavior

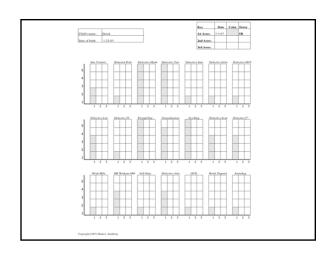
- A descriptive functional analysis of verbal behavior (Skinner, Chap 1)
- A behavioral analysis of words, phrases, and sentences emitted by children with autism
- · Same basic principles of behavior as nonverbal behavior
- · What is the source of control?
- These sources of control will often reveal that what appears to be a correct response in form is actually incorrect in function
- Might not be the same source of control observed in a typically developing child (e.g., What's your name?)
- · Each verbal operant can be susceptible to unwanted sources of control

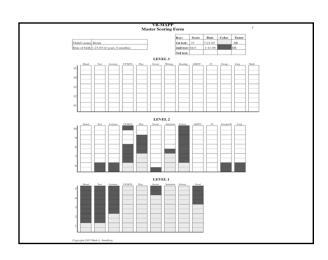


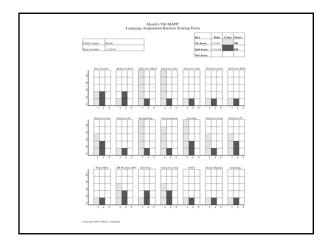
Verbal Behavior Milestones Assessment and Placement Program: The VB-MAPP Barriers Assessment

- Impaired mands (I want candy. What's that?)
- Impaired tacts (Bounce ball, Black car, Under table)
- Impaired intraverbal responses (Poopies evoked by What do you smell in the oven?)
- The behavior analyst must determine what the correct source of control should be, and how that source can be established
- · The functional analysis of verbal behavior is on-going
- The failure to conduct such an analysis may result in rote or Impaired verbal repertoires that can become difficult to change
- This is how behavior analysis is different, this is what we do as behavior analysts











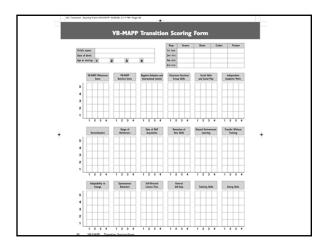
The VB-MAPP: Transition Assessment

- A common goal for many educators and parents of children with special needs is to integrate the child into a mainstream setting
- There are many different levels of integration and the Transition Assessment was designed to identify the skills that increase the probability that a child will be successful in a less restrictive setting
- No single skill will be a good determiner of success, but a collective body of skills can help educators and parents make decisions
- The VB-MAPP Transition Assessment provides a tool to help determine if a child has the necessary prerequisite skills to learn in a less restrictive classroom environment
- · There are 18 skill areas on the Transition Assessment



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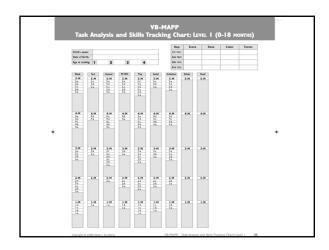




The VB-MAPP Task Analysis and Skills Tracking

- The milestones can be considered floors in a building, and the task analysis contains the steps between each floor
- There are 170 milestones and approximately 900 total tasks in the VB-MAPP task analysis
- · The task analysis form also allows for more detailed skills tracking
- Building a whole repertoire, not just individual skills (e.g., mand, tact, M-T-S repertoires)





Verbal Behavior Milestones Assessment and Placement Program: IEP Goals and Placement

- The results of the VB-MAPP Skills and Barriers Assessment provide guidance for the development for an intervention program
- Specific IEP goals are provided for each milestone and barrier
- The assessment corresponds with the verbal behavior intervention program (Sundberg, in preparation; Sundberg & Partington, 1998)

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