Programming Based on the Analysis of Verbal Behavior

National Autism Conference
July 30, 2013
Amiris Dipuglia

Pennsylvania Training and Technical Assistance Network
PA Autism Initiative

PaTTAN’s Mission and Commitment to Least Restrictive Environment (LRE)

- The mission of the Pennsylvania Training and Technical Assistance Network (PaTTAN) is to support the efforts and initiatives of the Bureau of Special Education, and to build the capacity of local educational agencies to serve students who receive special education services.
- Our goal for each child is to ensure Individualized Education Program (IEP) teams begin with the general education setting with the use of Supplementary Aids and Services before considering a more restrictive environment.

Primary sources of support:

- Work of PaTTAN’s Autism Initiative ABA Supports Team. Staff have over 9 years of experience in developing ABA programs for students with autism in Pennsylvania’s public schools
- Work of Dr. Mark Sundberg
- Work of Dr. Vincent Carbone
- See references

Goals for this session

- Review general programming considerations for students
- Review common programming considerations across learner levels related protocols
- Review several common instructional protocols across learner levels

Programming Overview

- Programs need to be designed to align with Standards
- In PA this means that instruction is aligned with State Academic Standards
- Alternative standards exist for students who do not exhibit the precursor skills necessary to enter the established academic standards
- The PaTTAN Autism Initiative has aligned its assessment practices with the alternative standards and with early childhood standards.

Markle and Tiemann’s System of Instruction (1967)
Programming within PaTTAN's Autism Initiative

- Our design has been derived from the work of Dr. Mark Sundberg (1998; 2007-2008); Dr. Vincent J. Carbone (2003; 2004); Dr. Ivar Lovaas (1993); The MorningSide Model of Effective Instruction (2004); and of Carnine and Engleman (1982; 1991), among many others (specifically: the research base related to educational autism treatments; evidence based educational research.)

PaTTAN Autism Initiative System of Instruction: Program Components Fit Together

- Data Based Decision Making
- Teaching Procedures
- Materials Organization (Card Sort)
- Program/Target Selection
- Assessments (VB-MAPP)
- Staff Training

A critical consideration for assessment and programming:

The Operant Analysis

<table>
<thead>
<tr>
<th>Antecedent</th>
<th>Behavior</th>
<th>Consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivator Operation</td>
<td>Response (Dimensions: topography, temporal, magnitude, location)</td>
<td>Reinforcement (Positive and Negative) (socially mediated and automatic)</td>
</tr>
<tr>
<td>Stimulus (Incentive, Neutral, Oral)</td>
<td>No Response</td>
<td>Punishment (Type I and II) (socially mediated and automatic)</td>
</tr>
<tr>
<td>Prompt (a procedural use of discriminative stimulus)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Verbal Operants

<table>
<thead>
<tr>
<th>Verbal Operant</th>
<th>Antecedent</th>
<th>Behavior</th>
<th>Consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Want</td>
<td>Motivator Operation (wants cookie)</td>
<td>Verbal behavior (says &quot;cookie&quot;)</td>
<td>Direct reinforcement (gives cookie)</td>
</tr>
<tr>
<td>Tact</td>
<td>Sensory Stimulus (sees or smells cookie)</td>
<td>Verbal behavior (says &quot;cookie&quot;)</td>
<td>Non-specific reinforcement (gets praised, for instance)</td>
</tr>
<tr>
<td>Intraverbal</td>
<td>Verbal Stimulus (someone says: &quot;What do you eat?&quot;)</td>
<td>Verbal behavior (says &quot;cookie&quot;)</td>
<td>Non-specific reinforcement (gets praised, for instance)</td>
</tr>
<tr>
<td>Echolalia</td>
<td>Verbal Stimulus (someone says &quot;cookie&quot;)</td>
<td>Verbal behavior (repeats all or part of antecedent) (says &quot;cookie&quot;)</td>
<td>Non-specific reinforcement (gets praised, for instance)</td>
</tr>
</tbody>
</table>

Other Relevant Operants

<table>
<thead>
<tr>
<th>Operant</th>
<th>Antecedent</th>
<th>Behavior</th>
<th>Consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reciprocate (actually not a verbal operant)</td>
<td>Verbal stimulus (someone says &quot;touch cookie&quot;)</td>
<td>Non-verbal behavior (child touches cookie)</td>
<td>Non-specific reinforcement (gets praised, for instance)</td>
</tr>
<tr>
<td>Imitation</td>
<td>Point to point correspondence</td>
<td>Non-verbal behavior (person performs an action, etc.)</td>
<td>Non-specific reinforcement (example: praise; &quot;you’re right!&quot;, &quot;great job!&quot;, high five, pat on back, etc.)</td>
</tr>
<tr>
<td>Match to sample</td>
<td>Non-verbal behavior (presentation of stimulus)</td>
<td>Non-verbal behavior (in presence of one stimulus, a second stimulus is selected with shared properties)</td>
<td>Non-specific reinforcement (example: praise; &quot;you’re right!&quot;, &quot;great job!&quot;, high five, pat on back, etc.)</td>
</tr>
</tbody>
</table>

Operant Analysis and Analysis of Stimuli

- Interconnected Processes
- The operant analysis iterates variables that describe contingent relations between stimuli and response frequency
- The analysis of stimuli iterates the sequence/structure/context of stimuli that will serve as controlling variables for responses. Engleman refers to this analysis as “stimulus-locus analysis” (1991, p374)
- The analysis of stimuli considers how the “task interacts with other tasks”
Analysis of Instruction

- See Engleman and Carnine’s Theory of Instruction, 1982 and 1991
- All measurement systems in education are dependent upon a coherent theory of instruction:
  - The analysis of stimuli

Big Points From Engleman and Carnine

- Learning mechanism consists of:
  - The capacity to learn any quality exemplified through examples
  - The capacity to generalize to new examples on the basis of sameness of quality

Analysis of stimuli and selection of target stimuli

- Picking the pictures/objects used for teaching tacts/LR responding involves consideration of an adequate range of examples
- Such task selection also implies that we need to consider (in a graduated sequence) teaching an adequate number and type of distracter items that are almost correct, but not quite… (close in non-examples)
- More on this later

Formative Assessment

Formative assessment is assessment that is used to drive instruction (as opposed to summative assessment that is used to describe overall functioning at some point in time).

- Consists of:
  - Curricular pinpoints
  - Measurement design based on dimensions of behavior
  - Measurement procedure and calibration
  - Data driven decision making

Selection of Instructional Programs

- Analysis of assessments (behavioral language assessment/VB-MAPP, social skills, CBA’s, echoic assessments)
- Development of program book with data systems to monitor learning objectives:
  - Skills tracking sheets
  - Cumulative graphs
- View VB-MAPP Video

The “analysis” in applied behavior analysis refers to the process of reviewing data to inform decision making: it is the objective review of variables which correlate with behavior change.

*Formative assessment is the process of analysis.*
Why the VB-MAPP?

- Few assessment instruments exist that assess acquisition of verbal operants as defined by Skinner, 1957 (value of functional analysis vs. structural analysis of language)
- Efficiency of assessment: the VB-MAPP is designed to be easy and time efficient to administer
- Allows more detailed analysis of skill sets at the operant level (task analysis) when needed
- Links to typical development
- Includes components that can assist in troubleshooting instruction and aiding in transition to less restrictive environments

### Why the VB-MAPP?

**Level I**

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Level II**

<table>
<thead>
<tr>
<th>Item</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Level III**

<table>
<thead>
<tr>
<th>Item</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Listeners Responding

**Level 3**

<table>
<thead>
<tr>
<th>Item</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

### Body Parts

<table>
<thead>
<tr>
<th>Item</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

### Action

<table>
<thead>
<tr>
<th>Item</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

### Ongoing Diagrams

<table>
<thead>
<tr>
<th>Item</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

### Tact

<table>
<thead>
<tr>
<th>Item</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

### Ongoing?

<table>
<thead>
<tr>
<th>Item</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

### Tact?

<table>
<thead>
<tr>
<th>Item</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

### Tact?

<table>
<thead>
<tr>
<th>Item</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

### Ongoing?

<table>
<thead>
<tr>
<th>Item</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

### Tact?

<table>
<thead>
<tr>
<th>Item</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

### Ongoing?

<table>
<thead>
<tr>
<th>Item</th>
<th>21</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>
General Programming Considerations

Videos: Programming

General Guidelines VB-MAPP Programming

Programming from the VB-MAPP Requires Certain Staff Prerequisites

Interpreting the Overall VB-MAPP Milestone Assessment Results By:

- Complete VB-MAPP assessment
- Note performance level obtained in each column (skill domain).
- For the first gap (skill not acquired) in each column, develop instructional program.
- Remember there may occasionally be exceptions to this rule of thumb
- Refer to task analysis for detailed program selection as necessary.

- Basic skills related to concepts and principles of ABA
- Working skills related to the analysis of verbal behavior
- Ability to read and implement instructional protocols
- Data skills and graphing skills
- Organizational skills
- Motivation: effective implementation must have value to staff

1. **Identifying** the general level of the child
2. **Analyzing** the scores in each of the relevant skill areas;
   - *i.e. determine skill sets in relation to selecting known items, items that can serve as prompts and assist in selection of target items and response forms.*
3. **Selecting Instructional Programs** that are balanced across operants and at appropriate instructional level
When Programming

- Be sure targets are relevant for student:
  - Usually valuable to student
  - Common in day-to-day life
  - Tied to general education curriculum
  - Will promote and facilitate social initiations and interactions.
  - Will promote independence
- Be sure programming is consistent with student’s response form (vocal vs. sign)
- Be sure instructional materials are available for specific items selected within programs (card sort system)

Existing Skills vs. Target Skills
Considerations for DTI Materials Organization

- **EXISTING/KNOWN/EASY**
  - **TARGET SKILLS**
  - **MAINTENANCE ITEMS**

Develop 3x5 index cards and/or pictures of exemplars and place in bank of known items (in our case “easy piles”).

For active programs these items are written on the Skill Tracking Sheet with the word *ASSESS* or *Probe/Out* in the date introduced and mastered columns.

Develop 3x5 index cards and/or pictures of exemplars and place in bank of items to be targeted for instruction (in our case “target piles” or future targets).

For active target skills these items are written on the Skill Tracking Sheet with a date introduced as well as listing them on the cold probe sheet.

For items that will be targeted in the future, list on skill tracking sheet with no date introduced.

The VB-MAPP, with its different levels representing typically developing skill sequences from 0-48 months, provides a guide for selecting instructional programs in different skill areas.

For example you would probably not introduce reading, writing and math goals if your student is a level 1 learner; these pre-academic skills are not usually appropriate for their functional level. Skill areas, such as LREFC and IV only begin to emerge once a child has strong foundational skills in Level 1.

Example of Skills Tracking Sheet:

- 3 types of items listed:
  - Mastered items
  - Target items
  - Future target items

Example of probe sheet for daily assessment of target items:
Considerations for Selection of Assessment Items and/or Target Items

- Relevant content in relation to student’s life circumstances
- Are reasonably common in the cultural setting (e.g. rather than “household appliances” use “things in the kitchen”)
- Reasonable range of exemplars: shows both examples that are “close in” and those that are more regularly associated with the concept
- Sufficient number of exemplars within a program (e.g. number of tacts) and for each item (e.g. number of “car” stimulus items) to allow appropriate generalization and concept development

Where Do Mand Targets Come From?

- Preference assessment
- Items for which there is consistent motivation
- Things that will be needed by the student in their day-to-day life
- Items in which the response form can be prompted and emitted with reasonable accuracy

Selection of Verbal Response Forms

- VB-MAPP protocol
  - Echoic level
  - Imitation skills
  - Spontaneous vocal
- History of response to intervention
  - How long have signs been tried?
  - Verify quality of implementation of training efforts

Selecting Prompts From VB-MAPP Domains

<table>
<thead>
<tr>
<th></th>
<th>Sign</th>
<th>Vocal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mand</td>
<td>imitation</td>
<td>echoic</td>
</tr>
<tr>
<td>Tact</td>
<td>imitation</td>
<td>echoic</td>
</tr>
<tr>
<td>Echoic</td>
<td>NA</td>
<td>earlier established skills (EESA)</td>
</tr>
<tr>
<td>Intraverbal</td>
<td>signed tacts, textual, imitation</td>
<td>Tact, textual, imitation</td>
</tr>
<tr>
<td>Listener Responding</td>
<td>Imitation</td>
<td>imitation</td>
</tr>
</tbody>
</table>

Why Tact Prompts are Generally Superior to Echoic Prompts for IV Trials

- Echoic Prompts: verbal + verbal SD
- Tact Prompts: verbal + sensory SD (textual prompts also fit the bill for certain students) (Vedora, et al. 2009; Goldsmith, et al., 2007)
- Cross modality discrimination may be easier (“boundary detection”)
- Picture prompt on the back of the IV card

Instructional Procedures for Targets Selected from Assessment

- Targets are taught with errorless procedures
  - Most intensive teaching targets: Prompt transfer distract check
  - Mand targets: Prompt followed by transfer trial
- For advanced teams, may be more flexible: after student readily demonstrates corrects on check trials, more immediate fading to time delay may be implemented (see next slide)
Instructional Procedures for Known Items (“easies”) Selected from Assessment

- 2-3 second time delay
- Error correction procedures, as necessary
  - Error/end prompt transfer distract check
- Options for addressing repeated errors on known Items
  - retention criteria as necessary
  - re-target item
  - higher rate of maintenance trials
  - fluency training

How is Response Allocation Determined?

- Card sort system and the 80:20 easy/hard rule (by pile not etched in stone); frequent problem is not enough teaching trials.
- Number of active targets determines ratio of teaching trials for targets: less targets may be helpful in establishing a higher rate of teaching trials and may therefore speed acquisition: sometimes less is more
  - 2 targets: each target hit on average once in 10 trials
  - 4 targets: each target hit on average once in 20 trials
  - 8 targets: each target hit on average once in 40 trials
- Mass trials are not forbidden; some skills may be better learned without mixing and varying between operants (i.e. IV webbing, conditional discrimination for yes/no facts, fluent tact responses, etc.)
- Schedule adequate instructional sessions to ensure enough teaching trials for each program

Common Programming Procedures for Level 1 and Related Protocols

- Saliency of attending response (VP/MTS 1: attends to speakers voice LR1, PI)
- Consideration instructional control
  - Are adults established as conditioned reinforcers for the student: pairing process; “true” delivery (in absence of problem behavior)
- Identification and conditioning of adequate pool of reinforcers
- First programs:
  - Approach behavior
  - Imitation (objects and motor)
  - Match to sample
  - LR in context

Earliest Learners in Level 1

- Signed response form for mand training
- Build imitation skills; may need to start with action on objects, but motor imitation is central
- Often teach specific signs as imitation responses
- Also teach MS/Listener Responding
- Dense schedule of manding/NET/some DTI

Programs for Students with Echoic Skills

- Does not rule out the need for augmentative communication training (sign language)
- If echoic repertoire includes intelligible words, more likely to use vocal response form
- May need to further develop differential reinforcement of vocal responding in mand frame and/or echoic program

Programs for Students with Some Imitation/Minimal Vocal/No Echoics
Level One: Balancing Programs

- Often beginning level one students receive only "pairing", match to sample, imitation and listener responding
- Avoid neglect of procedures to build mand, tact and echoic

Some Related Classroom Organization Issues

- Materials sort vs. card sort (finding enough "easies")
- Portable reinforcement for instructional control/mands
- "Sanitizing": avoiding free access to reinforcing materials
- Adequate NET arrangement (i.e. trampolines, balls, video equipment, computers, magazines, etc.)
- Perhaps limiting staff assignment and establishing an appropriate consistent area for instruction

Impaired Mand: Some Programming Considerations

- Schedule adequate opportunities to mand
- Provide mand trials across a variety of MO items, across a variety of listeners, and across settings
- Check for MO
- Plan to fade mand prompts: two types of mand transfer trials: within trial and second trial transfer
- Consistently use correction procedures for scrolling
- Be careful with use of "generalized mands", especially at first
- Avoid chaining extraneous behaviors into mand responses (reach first, then sign)
- Relation of vocal mands to echoic: select vocal response forms carefully. Use of vocal mand form may require differential reinforcement of vocal responding in mand frame or specific echoic program
- Sequence mand skills carefully: don't move too early to multiple component mands or increased MLU for mands; to yes/no mands

Impaired Tact: Some Programming Considerations

- Teach many tacts
- Teach sufficient exemplars for tact targets
- Be sure student can tact objects
- Provide sufficient tact training opportunities
- Sequence tact instruction carefully: do not stop at tact objects; teach tacts for actions, multiple component tacts, etc.
- Be sure controlling variables are right (that what you think is a tact is really a tact and not a mand, or in the case of prompt dependency, an echoic)

Impaired Imitation

- Schedule adequate opportunities for imitation trials
- Check for MO/be sure instructional control established
- Sequence action to be imitated carefully
- Plan to fade prompts (appropriate use of transfer trials)
- Be sure imitative discrimination is taught (both for object imitation and motor imitation)
- Consistently use correction procedures
- Provide sufficient training to establish generalized imitation repertoire
- Teach imitation to fluency
- Require clean responding (but keep in mind shaping process)

Impaired Scanning

- Avoid "look here" or "Johnny, look here"
- Use sufficient 0 second prompts but fade prompts asap
- Fade in complexity of array
- May need to start with scanning between reinforcers
- Keep field dynamic (avoid shaping up location selection bias)
- Avoid mastering in field size of 2
- Teach skills such as touch item and/or match item in various locations
- Run MS/LR discrimination skills as fluency trials
Social and Play

- The main focus for level 1 learners is conditioning items, activities and peers as reinforcers
- Motivational variables: establishing the value of social interactions
- Be careful not to target eye contact too early (rather condition others as reinforcers as above) Social item 3
- Spontaneity: hard to program for! (Comes from multiple exemplar training and fluent responding) Social items 4-5

Dylan

- 6 Years old
- 1st year in program with ABA supports
- Attends Autism support classroom (elementary)
- Barriers for Dylan included instructional control issues, response requirement weakening MO, and impaired mand repertoire

Dylan Programming

- Initial Programming:
  - Intensive mand training
  - Establishing instructional control
- 2nd Phase Programming:
  - Imitation
  - Match to sample
  - Tacting common items
  - Vocal Shaping
  - Conditioning peers as reinforcers

Seth

- Age: 12 years
- Special Education eligibility: Autism

Seth Programming:

- Response Form: Sign Language
- Mand: Manding for items sign or vocal
- Listener Responding: pictures of common items, performing actions, touch body part
- Tact: common items
- Intraverbal: fill-in song/animal noise/common phrase
- Visual Performance/Match to Sample: shapes/colors, non-identical pictures-field of 10
- Motor Imitation: Fine motor, motor w/objects
- Echoic: CV, some early Kauffman breakdowns

Total Cumulative Skills in 20 weeks: 68 (20 Mands)
Purpose of Level 2 Programs and Considerations

- Careful programming and sequencing of skills helps avoid producing unwanted barriers that will impede development of a broad language repertoire and which we must eventually address in the future.

- Considerations:
  - Don't be tempted to move too fast through these intervention programs.
  - Careful analysis of the appropriate sources of control.
  - Build a solid foundation of prerequisite skills on which to base advanced skills.

Common Programming Procedures for Level 2 and Related Protocols

Level 2 Learners

MAND
- Expand mands for items, activities, actions: be careful not to stop #5 from level 1 at the 10 criteria...
- Increase rate of manding
- Mands for missing items
- Spontaneous mands (solely under MO Control...no item present)
- 2-component mands
- Multiple component mands
- Y/N mands (from task analysis: be careful with this! Remember MO variable, don't teach too early, can become a generalized mand)
- #9 and 10 come with multiple exemplar training and density of opportunity to mand: rarely need specific programming

TACT
- Expand tacts for items
- Tacting ongoing actions
- Tact parts/features of items
- Tact class of set of items
- Two component tacts (noun-noun, noun verb)
- Tact adjectives (relative concepts: long, big, etc)
- Tact prepositions (may need advanced analysis; is a relative concept)
- Yes/No tacts (remember this is really an autoclitic and quite complex to teach: conditional discrimination or joint control protocols suggested)
- Tact exclusion from category
Level 2 Learners

**Listener Responding**
- Discriminating items in larger fields, in messy arrays, and with similar stimuli
- Expand performing motor actions on command
- Discriminating items in picture/book scenes and/or the natural environment
- Discriminate parts/features
- Follow instructions involving adjectives and prepositions
- Follow two component instructions
- Follow three component instructions

**Visual Performance/Match-to-Sample**
- Match identical items in larger fields, messy arrays, and with similar stimuli
- Match non-identical items (same progression as identical, if necessary)
- Replicating 3-D block designs, block designs on pictures as well as from pictures
- Gradually increase difficulty of puzzles
- Replicate and then extend sequence patterns
- Matching items in the natural environment

**Social and Play**
- Peer-Peer pairing
- Peer-Peer manding
- Play/Leisure skills: can, and should, include independent engagement.

**Imitation**
- Imitation of objects requiring discrimination
- Fine motor imitation
- Imitation fluency
- Multiple step motor imitation
- Imitation free of verbal S^D (fluency drills may help in teaching this step)

**IntraVerbal**
- Fill in responses
  - Fun activities
  - songs
- Responding to questions regarding personal information
- IntraVerbal by feature, function, and class
- Answering what, who, where questions

**Brandon**
- Age: 9 years
- Eligibility Category: Autism
- Primary Response Form: Sign Language
Brandon Programming:

- Fine Motor Imitation, MI with objects in discrimination.
- IV: fill in songs, fill in everyday activities, sign given word, personal information - name
- Echoic: sequence of numbers, imitate sounds and blends, reinforcing words/items
- Reading: receptive ID and tact of letters, matching word to picture, receptive ID of name
- Math: receptive & tact numbers 10-20, count sets of items vocally up to 15
- Writing: trace letters capital and lowercase, copy name
- Tact: Label common pictures, body parts on self, body parts on others, body parts by picture, actions of others.
- Listener Responding: follow directions, common pictures, identify items from scenes in a book
- Visual Performance: matching non identical action pictures, replicate sequence

Tommy

- 10 years old
- Attends an autism support classroom at an intermediate school
- Started as a non-vocal learner with limited skills across all operands

Tommy Programming:

- Mands for missing items
- Tacts for items, actions, parts/features of items
- L.R. Following instructions to perform actions, receptive discrimination of parts/features
- Intraverbal FFC’s
- Small group instruction
- Conditioning peers

Common Programming Procedures for Level 3 and Related Protocols
Purpose of Level 3 Programs

- To continue building on basic learning skills that include more complex language skills.
- Building toward academic performance, group instruction and more complex verbal and social relations (Will not cover in depth academic components).
- Procedures need to include:
  - Generalization
  - Spontaneity
  - Transfer between operants
  - Social and verbal interactions with peers
  - Use of new skills in a functional and meaningful way in the student’s day to day natural environment.

Level 3 Learners

MAND
- Mands for removal of aversive stimuli (remember why this is at level 3!)
- Mands for attention
- Mands for information

TACT
- Expand tacts for adjectives, prepositions
- Tact pronouns, adverbs
- Tact at least 4 specific aspects of items when presented with rotating verbal questions about the item.
- Tact emotional states and social situations

Listener Responding
- Discriminate 4-component non-verbal combinations
- Follow instructions involving adjectives and prepositions
- Follow instructions regarding pronouns and adverbs
- Discriminate among common social situations and emotional states

Visual Performance/Match-to-Sample
- Expand non-identical matching (large messy arrays with at least 3 similar stimuli)
- Extend or continue patterns and sequences
- Sorting items into categories
- Matching models of art/craft type activities

Social and Play
- Peer-Peer manding with “Wh” questions
- Play/Leisure skills…independent
- Play/Leisure…with peers
- Verbal exchanges with peers
Level 3 Learners

**LRFFC**
- Select correct item from natural environment when presented with a “WH” question regarding feature, function, or class of items
- Select correct item when given 4-component “WH” questions
- Select multiple items (“all”, specific quantities, “both”)

**Intraverbal**
- Increased range of intraverbal responses (300+); can include expanding FFC’s
- Respond to “WH” questions
- Answer intraverbal yes/no questions
- Describe events, movies, stories
- Answer questions about a story read
- Answer multiple questions regarding a specific topic

**Classroom Routines**
- Work independently in a group for 5-15 minutes and stay on task
- Toileting skills

**Group Instruction**
- Respond in group to known instructions (unison/choral responding)
- Learning new behaviors in a group format

**Academic Skills in Conjunction or Beyond VB-MAPP**
- If student not at grade level, use sequenced and evidence-based curricula to teach academic skills (Reading Mastery, Corrective Reading, Distar Math, Connecting Math Concepts, Language for Learning, Sensible Pencil).
- Make sure students have necessary skills to begin these programs…Placement test does not necessarily give you this information.

**Reading Mastery**
- Echo sounds/words
- Imitate prosody…speed (fast and slow)
- Sustain a sound for about 3 seconds
- Follow simple instructions

**Language for Learning**
- Echo words/phrases
- Discriminate and Tact many items and actions
- Respond to simple yes/no questions
- Perform simple actions on command
- Describe objects (parts/features)
- Respond to name
**Distar Math**
- Echo words/responses
- Respond to simple yes/no questions
- Respond to “Stop”
- Rote count
- Match-to-sample
- Replicate patterns/sequences
- Prepositions/positional concepts (top/bottom, first, next…)

**So what do I teach if he/she is not ready?**
- Start with “show me ready”
  - Ready hands (hands folded on lap)
  - Seated in chair
  - Feet on floor
  - Body and eye gaze oriented toward teacher
- Teach first in imitation, then transfer to listener response

**Other Critical Skills**
- Choral/unison: Students’ ability to respond along with others in a group setting (responding on signal).
- Individual Responding: Student’s ability to respond when called on in a group setting.
- Waiting for others individual responses: Student’s ability to remain quiet and attentive when it is another student’s individual turn to respond.

**Ashley**
- Age: 9 years
- Eligibility Category: Autism
- Vocal response Form

**Ashley Programming:**
- Mandaing: for information using who and where questions
- Peer to Peer Mandaing
- Visual Performance: continuing a pattern, sequencing, replacing block designs
- Two component items/pictures, multiple component nouns/verbs, adjectives, 2 component nouns/suffix and suffix/suffix combinations
- LLI: perform 2 consecutive actions, adjectives, common items/pictures, ID items that don’t belong, 2 step actions
- Echoic: echo phrases, number sequences
- IV: Feature, function, class
- Reading: grade level site words, reading groups of known words and phrases, Headsprout
- Language for Learning and Reading: Mastery, spelling grade level, new words
- Math: count given items

**Damon**
- Age: 9 years
- Category of eligibility: Autism
Damon Programming:

- Mand Frequency
- Mand for Information
- Peer to Peer Mand
- Social Skills Training
- Intraverbal skills (imbedded in social skills training)
- SRA Reading Mastery Level 2
- Math Program

Prior to New Program Selection:

- Issue of response adduction
- Probe for skill acquisition without specific teaching

Contact Information  www.pattan.net

Amiris DiPuglia
adipuglia@pattan.net

Thank You for Your Participation!

Commonwealth of Pennsylvania  Tom Corbett, Governor
Pennsylvania Department of Education  William E. Herring, Ph.D., Acting Secretary
Carrie C. Doppmann, E.D.
Executive Deputy Secretary
John J. Tomassoni, Director
Bureau of Special Education