


Precision Teaching and Advanced Language Skills

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Organization for Research and Learning


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Talk Aloud Problem Solving



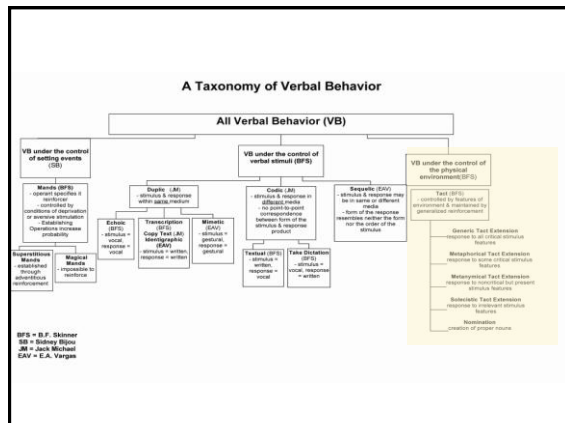
- Learners engaging in self narration while participating in instruction
- Teachers respond to student's verbal behavior to reinforce and correct where needed throughout the measurement process

Advanced Language Skills




Skinner's Analysis of Verbal Behavior (1957)

- Intraverbal Repertoires
 - Sequelic responses
 - Duplic responses
 - Codic responses
- Tact repertoire




Tact Critical features

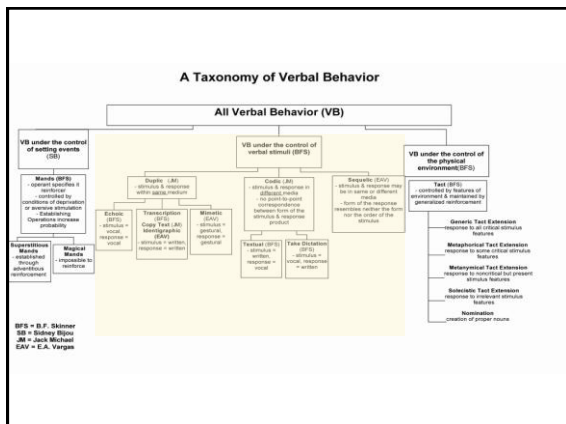


- A Tact
 - A verbal response controlled by features of the physical environment and maintained by generalized conditioned reinforcement
 - Includes all aspects of the physical world that a child comes in contact with
 - Things in a room
 - People
 - People's emotional states
 - Features of the above


Example TAPS Tact Phrases



- "I need to complete this chart to answer the question how many students bought lunches."
- "'Ran down the street' is the predicate of the sentence."
- "This section targets contrast, so I know I'm looking for words that mean the opposite."




Intraverbal Critical features



3 main types of VB controlled by verbal stimuli:


- Duplic**
 - Discriminative stimuli and response both within same medium
 - Formal & ordinal correspondence
- Codic**
 - Discriminative stimuli and response within different medium
 - Ordinal correspondence but no formal
- Sequelic**
 - Discriminative stimuli and response may be within same or different media
 - Neither formal nor ordinal correspondence

Example TAPS Intraverbals




- Duplic**
 - Re copying diagrams or directions provided
 - Counted towards the deceleration target (x) for Leila
- Codic**
 - Re-reading directions repeatedly without operating on them
 - Counted towards the deceleration target (x) for both Leila and Lucas
- Sequelic**
 - "I'm working on contrast, I know that to write clearly means neat, so illegible must mean NOT writing neatly. It could mean writing sloppily." (MRTR)

Subjects




- Leila**
 - 11 years 9 months
 - 18 hours per week of intervention
 - Intervention started at age 5
- Lucas**
 - 9 years 10 months old
 - 8-10 hours per week of intervention
 - Intervention started at age 3

Subjects




- Challenges Identified**
 - Leila:** problem solving, strategizing through any academic task, weak reasoning skills, repeating directions thinking she was solving, repeatedly copy and recopying to make things neat without completing work
 - Lucas:** challenges with "reasoning" required responses in general education math curriculum, also engaged in few doer responses (pointing or showing) and his problem solving was circular

Independent Variables



Leila	Lucas
<ul style="list-style-type: none"> Expectations <ul style="list-style-type: none"> Verbal expectations Visual Template "Modified" Mathematics Corrections (Gilbert, 1961) Differential Reinforcement of Higher rates of behavior (DRH) <ul style="list-style-type: none"> Goals set off "problem solving behavior" = composite of sequelic and tact responses Timed practice combined with Daily improvement goals Response shaping feedback within timings 	<ul style="list-style-type: none"> Expectations <ul style="list-style-type: none"> Verbal expectations "Modified" Mathematics Corrections (Gilbert, 1961) Differential Reinforcement of Higher rates of behavior (DRH) <ul style="list-style-type: none"> Goals set off sequelic responses Timed practice combined with Daily improvement goals Response shaping feedback within timings

Dependent Variables

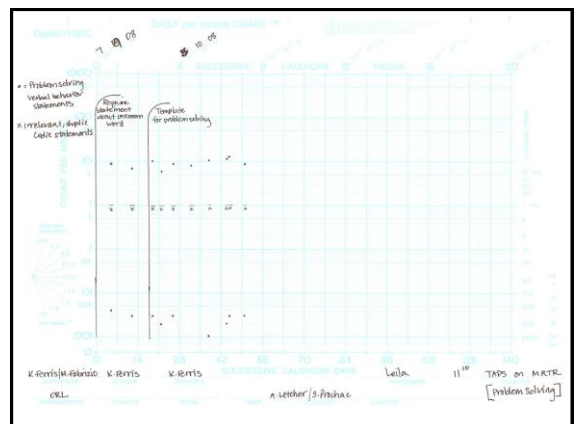
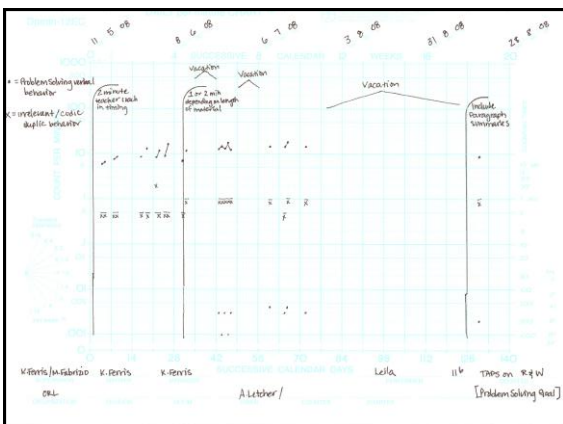
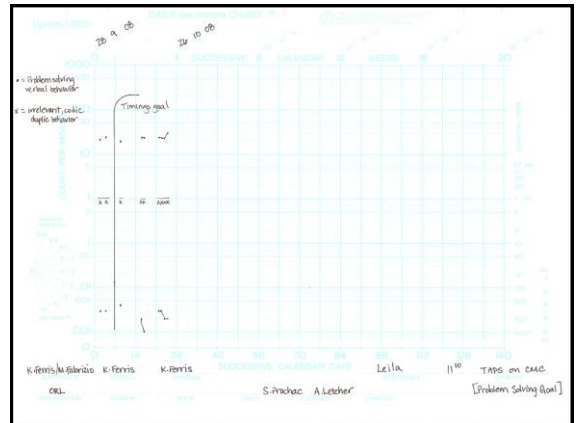
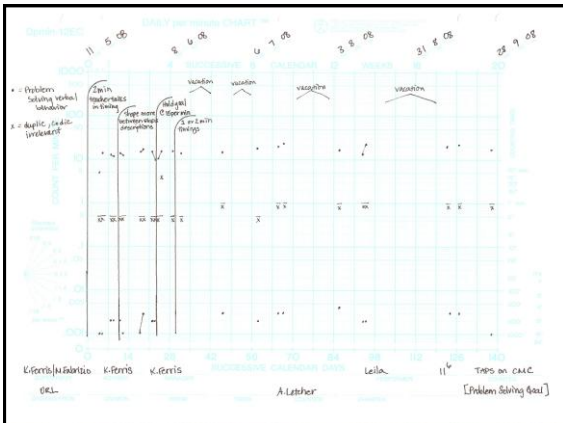
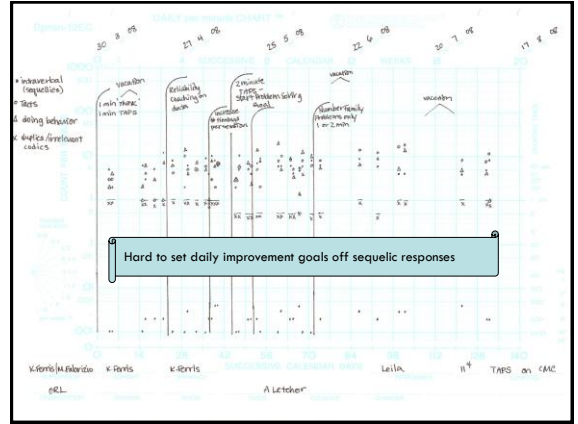


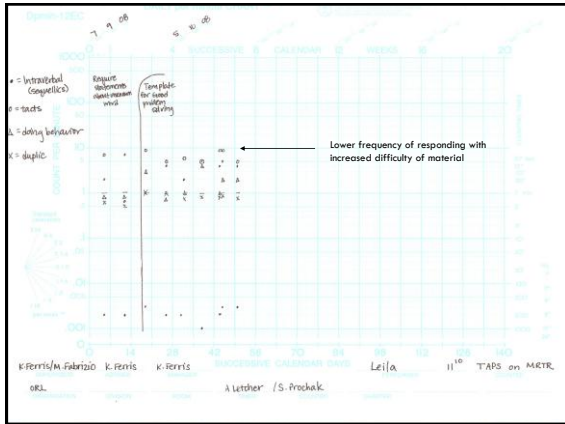
Leila

- Direct Instruction Curricula
 - Reasoning and Writing- level D
 - Connecting Math Concepts- level D
- Mastering Reading Through Reasoning (MRTR)
- Analytical Reading and Reasoning (ARAR)


Lucas

- 2nd grade math word problems
 - Addition, subtraction, division, multiplication operations
 - Graph related problems
- Direct Instruction Curriculum
 - Reasoning and Writing- Level C

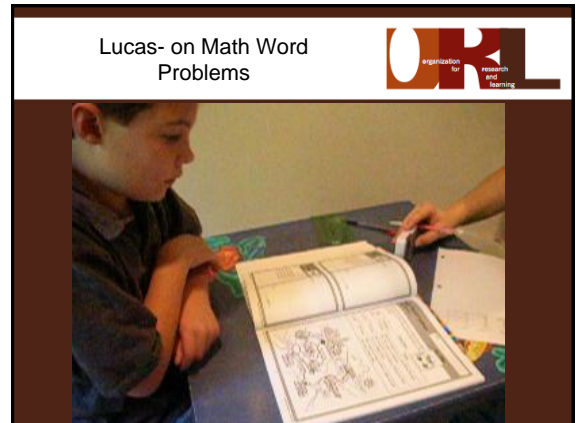
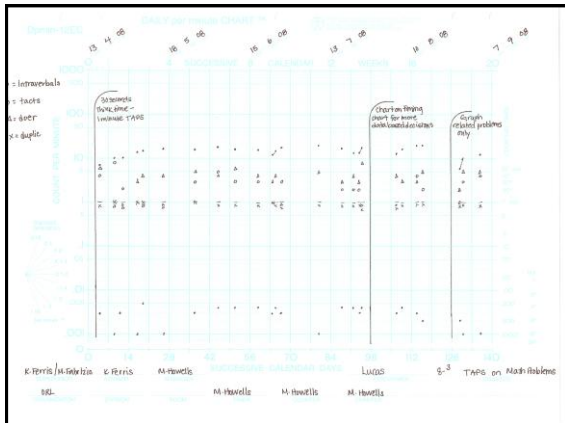





Leila



QuickTime™ and a
TVML2L codec decompressor
are needed to see this picture.




Findings



- Leila
 - Problem solving composite proved to be a better measurement cycle for shaping her TAPS repertoire
 - Instructing across multiple difficulty levels of curriculum appeared to be effective to teach the verbal behavior expectations of TAPS
- Lucas
 - Counting sequelic, tacts, duplic/codic responses separately allowed shaping of his relational tact repertoire

Suggestions



- Count sequelic, tact, duplic, codic responses separately *initially*
 - Identify which operant is weakest
 - Then move to a composite “Problem Solving” measure
- Implement across multiple content areas
- Conduct on-going reliability measures related to the coding of the different verbal operants

Future Directions



- Improved meta level measures tracking improvements in dissecting content slightly beyond a student's instructional level
- Charting IOA instead of using solely as an on-going shaping tool

Thank You!



- Lucas
 - Leila
- ...For allowing their data to be shared

References

Skinner, B.F. *Verbal behavior*. New York: Appleton-Century-Crofts, 1957.