

Assessing the instructional efficiency of discrete trial instruction and timed practices for children with autism and related disabilities

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- Compare Discrete Trial Instruction (DTI) and Timed Practice (TP)
 - Instructional effectiveness
 - Instructional efficiency
 - Social validity

- Independent Variables
- Dependent Variables
- Designs used
- Procedural Reliability

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- Discrete Trial Instruction
- Timed Practice

- Therapist-controlled instructional cue (S^d)
- Overt student response
- Reinforcement/feedback immediately following each response
- Inter-trial period without instruction (2 seconds)
- Counts percent correct

- Predetermined daily improvement goal
 - Based on previous best performance
- Explicitly stated expectations
 - Performance goal
 - Learning skills
- Predetermined lengths of timed practice
- High rates of instructional delivery
 - Therapist presents cues fast enough to not place a ceiling on student's rate of response
- Counts frequency of correct and incorrect response

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- Jennifer
 - 10 years old, moderate autism
- Max
 - 7 years old
- Hear a Category/Say items within the category
 - Number of instructional minutes required to attain mastery criteria
 - 80% correct
 - Number of overt responses required to attain mastery criteria
 - Reports of therapist preference for each instructional method

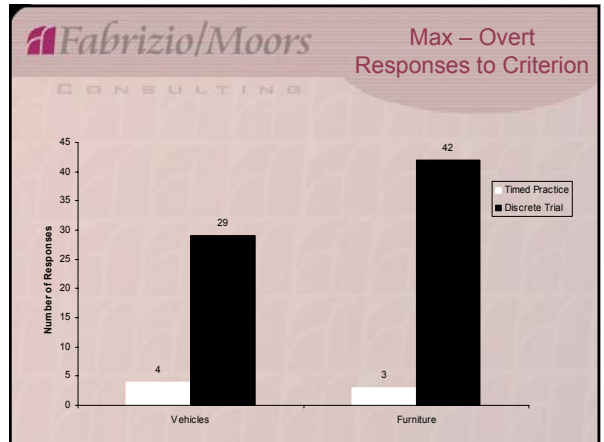
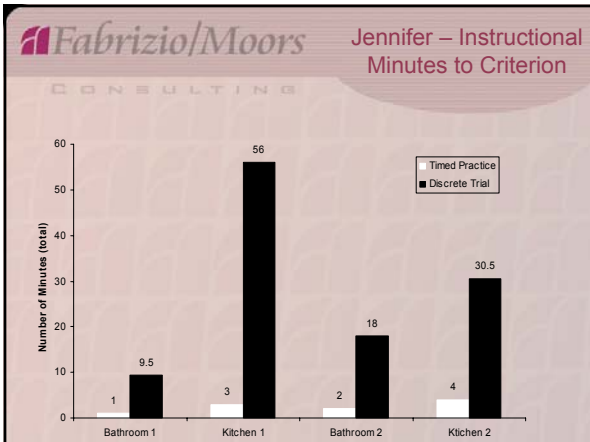
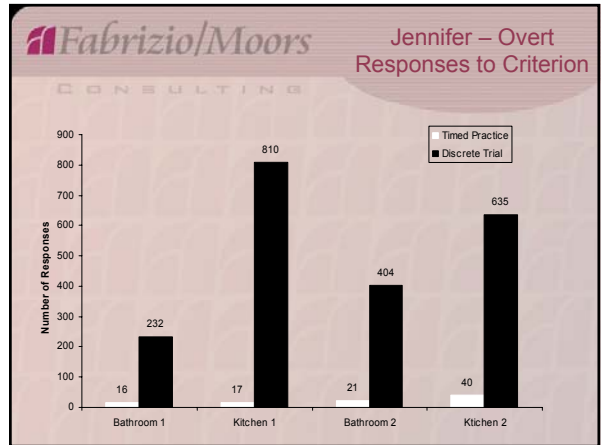
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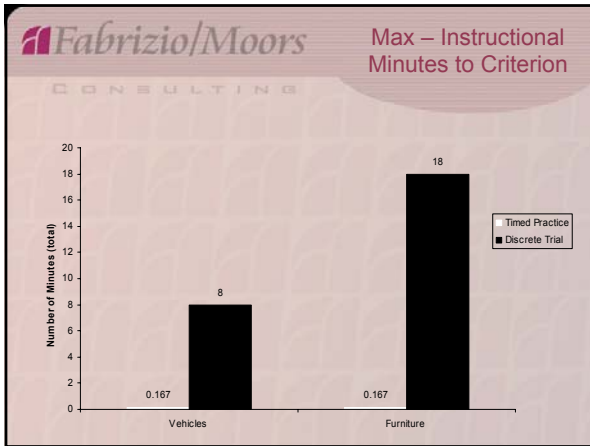
- Alternating treatments (Kazdin, 1982; Richards, Taylor, Ramasamy & Richards, 1999)
 - Items from categories randomly assigned to either DTI or TP

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- Contrived practice to 100% criterion delivering DTI
- Met previous training standards for TP
- Weekly observation
 - ≈ 17% sessions
- Reliability consistently above 90% for implementation and counting

Name: _____ Date: _____		Observer: _____		Instruction Evaluation Form	
				Ratings 4 = Always does when/where appropriate 3 = Usually does correctly when/where appropriate 2 = Sometimes does correctly when/where appropriate 1 = Rarely does when/where appropriate 0 = Never does correctly when/where appropriate NA = Not applicable during this observation	
Area 1: Organization					
Yes / No		Instructional area is neat and clean			
Yes / No		Materials are complete			
Yes / No		Materials are easily accessible			
Yes / No		Materials distributed efficiently			
Yes / No		Site is clear of student			
Yes / No		Provides a clear cue that session is starting			
Yes / No		Time until first response = 2 min.			
Area 2: Expectations					
_____		Locates student goal based on most current data			
_____		Shows student goal visually & audibly			
_____		States and show a visible reinforcer			
_____		States contingent relationship between reaching goal and reinforcer			
_____		States expectation for learning skills			
_____		Follows through on reward delivery			
Area 3: Instructional Delivery					
_____		Secures student's attention before delivering first cue			
_____		Provides a clear focus cue			
_____		Provides a clear response cue			
_____		Clear visual spatial presentation			
_____		Correct learning channel			
_____		Verifies student responses during initial stages of instruction			
_____		Allows thinking time when appropriate			
_____		Provides no inadvertent cuing			
_____		Speech is rhythmic			
_____		Tone of voice is warm			
_____		Once accurate, builds student's rate of responding across stimuli			
_____		Provides pre-corrections			
_____		Imposes no ceilings on student performance			
Area 4: Data Collection/Analysis					
_____		Needs charts are present and set-up before instruction begins			
_____		Records data as instruction progresses (in situ)			
_____		Data are recorded accurately			
_____		Plots student's behavior in context in his chart			
_____		Makes correct data-based decisions			
Area 5: Error Correction					
_____		All errors are corrected before prompts			
_____		Corrects errors when student data indicate this is needed			
_____		Correctly implements Mathematics error correction			
_____		Correctly uses discrimination corrections			
_____		Provides extension opportunities			
_____		Accepts only target responses as correct			
_____		Differentially reinforces correct responses over prompted or corrected responses			
_____		Conducts delayed tests on items previously missed			
_____		Focuses on statement containing the error			
_____		Detects and addresses error patterns			
_____		Selects appropriate intervention given error pattern			
_____		Intervention takes < 30 sec to deliver			
_____		Disciplines behavior when intervention & remedial instruction are needed			
Area 6: Reinforcement					
_____		Praise rate > 6 per minute			
_____		> 5 different reinforcers used during observation			
_____		Uses behavior specific praise			
_____		Reinforces appropriate learning skills			
_____		Reinforcement related to expectations and student goals			
_____		Reinforcers delivered within 2 sec of student response			
_____		Maintain control over primary reinforcers			
_____		Uses intermittent schedule of reinforcement when possible			
_____		Provides more reinforcement on harder tasks, less on easier tasks			
_____		Reinforces rather than verbally			
Area 7: Behavior Management					
_____		Ignores misbehavior			
_____		Continues w/ his task presentation (when possible) in presence of misbehavior			
_____		Provides alternative responses			
_____		Correctly implements behavior management strategies as directed			





Fabrizio/Moors Some Conclusions
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- Timed practice allowed both learners to reach mastery criterion in less time and with less effort (fewer responses)

Fabrizio/Moors Future Research Directions
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- Investigate additive effects of both instructional arrangements
- Extend current work to other students
- Implement current design with naïve staff members for social validity data collection purposes
- Collect direct measures of student behavior correlates which may indicate preference for one instructional arrangement over another

References

Kazdin, A. E. (1982). *Single-Case Research Designs: Methods for Clinical and Applied Settings*. New York: Oxford University Press.

Richards, S.B., Taylor, R.L., Ramasamy, R., Richards, R.Y. (1999). *Single Subject Research: Applications in Educational and Clinical Settings*. San Diego, California: Singular.