

The Effect of Prompting Procedures on the Acquisition, Maintenance and Generalization of Intraverbal Behavior

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Introduction

- The inability to respond meaningfully to the language of others is a characteristic of children diagnosed with autism (Goldsmith, LeBlanc, & Sautter, 2006). Intraverbal behavior is defined as verbal responses that lack point to point correspondance with the antecedent verbal stimulus and includes social interchanges, question answering, and conversational speech (Skinner, 1957).
- Past research has indicated that using textual prompts, tact prompts, and echoic prompts has been effective in teaching intraverbal behavior to children diagnosed with mental retardation and autism (Brahm & Poling, 1983; Finkel & Williams, 2001; Goldsmith, LeBlanc, & Sautter, 2006). Only one study has compared the effect of textual and echoic prompts and found that textual prompts were much more effective in producing intraverbal behavior (Finkel & Williams, 2001).
- The purpose of this study was to compare the effects of echoic, tact, and textual prompts on the acquisition, maintenance, and generalization of intraverbal behavior in children diagnosed with autism.

Method

Participants

- Madeline was a 5 year-old girl diagnosed with autism.
- Nora was a 5 year-old girl diagnosed with autism.
- Tucker was a 4 year-old boy diagnosed with autism.
- Madeline and Nora received approximately 27 hours of in-home Applied Behavior Analysis therapy each week and Tucker received approximately 5 hours of ABA therapy per week from a university autism clinic.

Setting & Materials

- The study was conducted in a therapy room in the child's home or in a private classroom at the child's school. All rooms included a table with one chair. Materials included data sheets, timer, video camera, and picture cards. For Margaret, Nora, and Tucker the pictures that were printed on card stock paper and used as prompts during the tacting condition were shark, fish, sea turtle, dolphin, crayons, scissors, and pencil.

Procedure

Tact, Textual, and Echoic Assessment and Training

- An assessment was conducted to evaluate existing tact, reading words, and echoic repertoire.
- Correctly tacted cards were used in intraverbal training.
- A 5 s constant prompt delay was used to teach the child incorrectly tacted cards.

Intraverbal Training

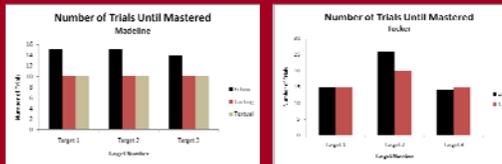
- An alternating treatment single subject experimental design was used to evaluate textual, tact, and echoic prompting procedures.
- Three responses were assigned to each condition. When one target was mastered, which was defined as 6 consecutive correct responses, the next target was taught.
- A 5 s constant prompt delay was used for each condition.
- All trials began with the delivery of a verbal instruction (e.g., "Name a type of school supply"). In the tact and textual condition, a picture or word of the response was presented as a prompt for the first 4 trials.
- The fifth trial was tested for an independent response. If an error occurred, the 3 subsequent trials were prompted. This procedure continued until mastery criteria was met.
- Mastery criteria was defined as six consecutive correct responses.

Generalization and Maintenance Probes

- One trial of a generalization probe was conducted 1-2 sessions following mastery of a target. A maintenance probe was conducted 7-10 days after the mastery criterion was met.

Inter-observer Agreement and Treatment Integrity

- Inter-observer agreement was conducted at least 60% of the sessions and was 100%.
- Treatment integrity was conducted at least 50% of the sessions and was 100%.



Figures 1 and 2. The total trials taken to achieve mastery for each target.

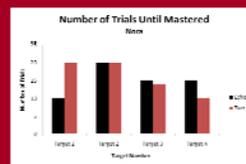
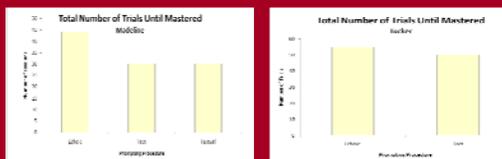


Figure 3. The total trials taken to achieve mastery for each target.



Figures 4 and 5. The total trials taken to achieve mastery for each target.



Figure 6. The cumulative number of trials to meet mastery across 3 conditions.

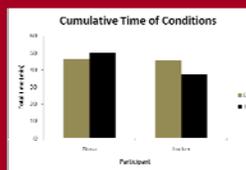


Figure 7. The cumulative amount of time for each condition.

Results

- Figures 1, 2, and 3 depict the total number of trials to meet the mastery criterion for across the three prompting conditions for each participant.
- Figure 1 shows the targets were mastered in 10 trials in the textual and tacting conditions, and 14-15 trials in the echoic condition for Madeline.
- Figure 2 shows the targets were mastered in 15, 26, and 14 trials in the echoic condition, and 15, 20, and 15 trials in the tacting condition for Tucker.
- Figure 3 shows the targets were mastered in 10, 20, 15, and 15 trials in the echoic condition, and 20, 20, 14, and 10 trials in the tacting condition for Nora.
- Figures 4, 5, and 6 shows the collapsed data of all 3 targets across prompting conditions for each participant. Figure 4 indicates that mastery criteria for Madeline took 45 trials for the echoic condition and 20 trials for tacting and textual conditions. Figure 5 indicates that targets were mastered in 60 trials and 64 trials for echoic and tact conditions respectively. Figure 6 shows the results for Tucker's total trials to meet mastery. He reached mastery in the tacting condition (55) slightly faster than the echoic condition (50).
- Figure 7 shows the cumulative time in minutes across prompting procedures.
- Maintenance probes were 0% for Madeline, 50% for Tucker, and 100% for Nora.
- Generalization probes were 0% for all participants.
- Nora made 6 errors on the tact condition and 4 errors on the echoic condition. Madeline had 3 errors on the echoic condition and 0 errors on the tact and textual condition, and Tucker erred 6 times during the echoic condition and 4 times on the tact condition.

Discussion

- Results from this study suggest that tacting prompts should be used when teaching intraverbal behavior.
- Results for the intraverbal training for two participants suggest that tacting prompts result in fewer trials to meet the mastery criterion compared to echoic prompts.
- The results of this study support previous research (Finkel & Williams, 2001), showing tacting and textual prompts worked better in meeting mastery criterion than echoic prompts.
- For Nora, the total number of trials to meet the mastery criterion for the echoic and tact condition were relatively the same, suggesting that the effects of the prompting procedures are similar.
- A limitation of the current study is the small sample size.
- Future research should examine the effects of the textual prompting condition with more children who are able to read. Research should also be conducted to analyze the social validity of the results and determine preferences of prompting procedures among teachers.

Selective References

- Braam, S. J., & Poling, A. (1983). Development of intraverbal behavior in mentally retarded individuals through transfer of stimulus control procedures: Classification of verbal responses. *Applied Research in Mental Retardation*, 4, 279-302.
- Finkel, A. S., & Williams, R. L. (2001). A comparison of textual and echoic prompts on the acquisition of intraverbal behavior in a six-year old boy with autism. *The Analysis of Verbal Behavior*, 18, 61-70.
- Goldsmith, T. R., LeBlanc, L. A., & Sautter, R. A. (2006). Teaching intraverbal behavior to children with autism. *Research in Autism Spectrum Disorders*, 1-12.
- Skinner, B. F. (1957). *Verbal behavior*. New York: Appleton-Century-Crofts.

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