

*TEACHING A STUDENT WITH AUTISM TO  
MAKE VERBAL INITIATIONS:  
EFFECTS OF A TACTILE PROMPT*

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This study examined the effects of a tactile prompting device (the Gentle Reminder) as a prompt for a student with autism to make verbal initiations about his play activities. A multiphase multielement design was used to assess the effects of the device in prompting initiations toward an adult in three different play contexts. Follow-up probes were conducted during cooperative learning activities with typically developing peers in the student's regular education class. The results suggest that the device serves as an effective, unobtrusive prompt for verbal initiations during play contexts and during cooperative learning activities.

DESCRIPTORS: autism, social initiations, prompting, verbalizations

One component of social language that is markedly deficient in children with autism is verbal initiations. Children with autism rarely comment spontaneously about what they are playing with, ask questions, or offer information. Usually, this form of generative language requires systematic instruction (Charlop & Walsh, 1986; Krantz & McClannahan, 1993; Taylor & Harris, 1995) and supplemental prompts such as verbal models, photographic cues (Krantz, MacDuff, & McClannahan, 1993), or textual prompts (Krantz & McClannahan, 1993). Although they have been documented to be effective, these prompts could be obtrusive in natural settings. For example, for a student in a regular education setting, these prompts may be too socially intrusive.

One type of unobtrusive prompt that has not been investigated is the use of a device called the Gentle Reminder (Davidson,

1995), which was designed to prompt teachers to implement various schedules of reinforcement. This device is a programmable vibrating beeper that vibrates for several seconds at specific intervals (e.g., once every 60 s).

The purpose of the present investigation was to examine the efficacy of this device as a tactile prompt for a student with autism to make verbal initiations about his play activities.

## METHOD

### *Participant*

Ron, a student with autism, participated in this study. Ron was 9 years old and attended a regular education second-grade class with a support instructor in his home school district. Ron was selected for this study because he had a history of limited spontaneous social language, and because a discreet unobtrusive prompting procedure would be optimal to cue Ron to talk to his peers in the regular education class.

### *Settings*

Training sessions and experimental sessions were conducted in a classroom after

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school hours. Follow-up probes were conducted during school hours in Ron's second-grade class during cooperative learning activities. Sessions were 10 min in length, and one to three sessions were conducted daily.

### *Design*

A multiphase multielement design was used to assess the effectiveness of the tactile prompt to prompt verbalizations toward an adult during three preferred play activities (i.e., tractors, dinosaurs, and trains). Within each phase, three conditions were conducted: a no-prompt condition (the device was not placed in Ron's pocket and verbal models were not provided), a verbal prompt condition (an adult modeled an initiation every minute), and a tactile prompt condition (the device was placed in Ron's pocket and was preset to vibrate every minute). Each of the play activities was assigned to each experimental condition and were rotated, yielding a total of three phases. A second multielement design was used to assess the effects of the device to prompt initiations in Ron's second-grade class.

### *Dependent Measure*

The dependent measure was the frequency of verbal initiations during 10-min play and follow-up sessions at school. Verbal initiations were defined as verbalizations that were demonstrated in the absence of verbal models, were related to the context of the activity (e.g., "look at this truck"), were directed toward another person (e.g., used the person's name, said "look," or oriented toward the person), and were complete sentences. Statements that were repetitions of prior initiations were not scored. Data were collected by trained observers during all sessions.

### *Interobserver Agreement*

A second observer recorded data during 50% of the baseline sessions, 60% of the

verbal prompt sessions, and 70% of the tactile prompt sessions. Interobserver occurrence agreement was calculated by dividing the total number of occurrence agreements by total occurrence agreements plus disagreements and multiplying by 100%. The mean occurrence agreement for all three conditions was 98% (range, 80% to 100%).

### *Teaching*

Teaching sessions were conducted to teach Ron to talk about his play activities when the device vibrated. A three-step procedure was implemented. During Step 1, Ron was seated at a table with preferred toys (e.g., blocks and cars). A teacher sat at the same table and completed paperwork. At the beginning of the session, the device was programmed to vibrate every 60 s and was placed on the table. Ron's hand was placed on top of the device. Each time the device vibrated, another teacher, who was positioned behind Ron, guided him to turn toward the seated teacher and modeled a verbal initiation for Ron to imitate (e.g., "Mary, I'm making a tiger"). The teacher seated at the table responded with a comment (e.g., "Yes, that's a scary tiger!"). Over subsequent opportunities, prompts were faded using a most-to-least prompting hierarchy, until Ron made a verbal initiation each time the device vibrated. Procedures were the same for Steps 2 and 3, except in Step 2 Ron was taught to respond to the device when it was in his pocket and his hand was placed on top of the pocket. During Step 3, Ron learned to respond to the device in his pocket with both hands free to manipulate the toys. A total of six teaching sessions (approximately 20 min) were required to teach Ron to talk when the device vibrated.

### *No-Prompt Condition*

During the no-prompt condition, Ron sat or stood at a table with one of the play activities. A teacher (different from the one who

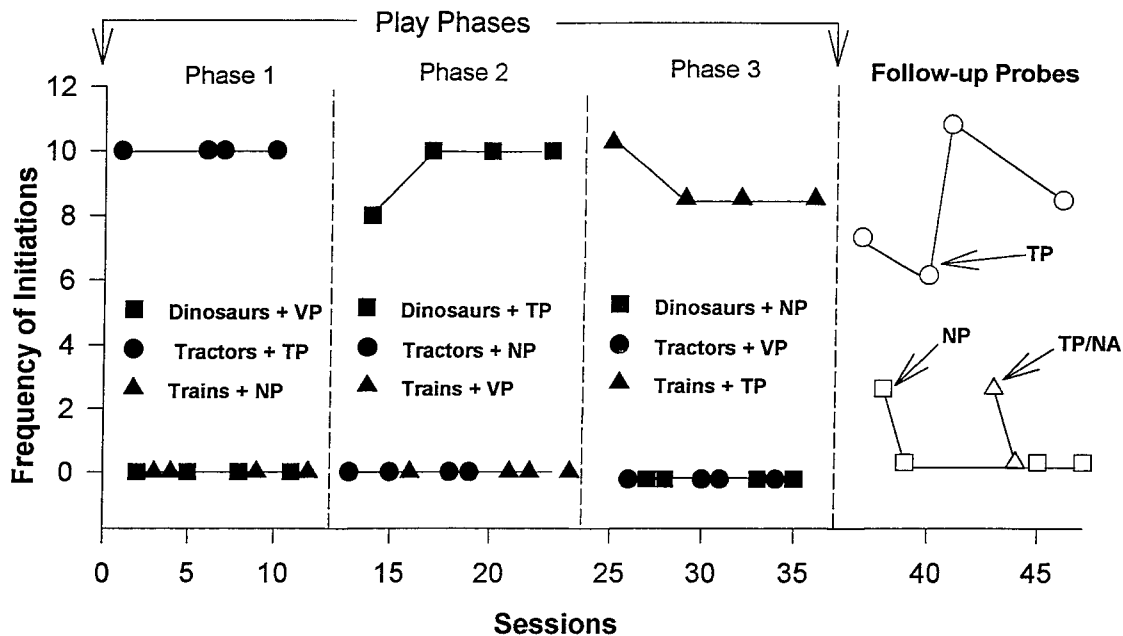


Figure 1. The frequency of verbal initiations during the three play conditions within each phase and during follow-up probes: TP (with the tactile prompt), VP (with a verbal prompt), NP (with no prompt), and TP/NA (tactile prompt not activated).

participated in teaching sessions) sat at the same table approximately 1 m away and completed paperwork. During these sessions, Ron was instructed to play with the toys. The device was not placed in his pocket, and verbal prompts to initiate were not provided by an adult. If Ron made a verbal initiation, the teacher responded with a comment.

#### *Verbal Prompt Condition*

These sessions were conducted in the same manner as the no-prompt sessions, except that verbal prompts to initiate verbal statements were provided once per minute by an adult. Prompts included verbal models to state an initiation (e.g., the adult said to Ron, "Say 'look at this red truck'"). Both prompted initiations and independent initiations were responded to by the adult who sat at the table.

#### *Tactile Prompt Condition*

These sessions were conducted in the same manner as the no-prompt condition,

except that the device, programmed to vibrate every 60 s, was placed in Ron's pocket. Verbal prompts were not provided during these sessions.

#### *Follow-Up Probes*

During these sessions, Ron sat at a table with two typically developing peers and participated in a cooperative learning activity (e.g., peers wrote letters together, completed math problems, or read books together). Neither Ron nor the peers was provided with additional instructions or consequences for talking or responding to one another. Three conditions were compared: a tactile prompt condition (i.e., the device was in Ron's pocket, programmed to vibrate every 60 s), a tactile prompt/not activated condition (i.e., the device was in Ron's pocket but was not activated), and a no-prompt condition.

## RESULTS AND DISCUSSION

The results of the multiphase multielement experimental design suggest that a tac-

tile prompt (the Gentle Reminder) functioned to produce verbal initiations during three different play activities (Figure 1). During all three phases, verbal initiations in the absence of verbal models occurred only when the tactile prompt was used. Further, the results of the second multielement design indicate that significantly more verbal initiations occurred when the tactile prompt was placed in Ron's pocket and was activated than when the device was not activated or when no prompt was used.

Although Ron was observed to imitate the verbal model during the verbal prompt condition, spontaneous initiations did not occur during these conditions. Perhaps additional training and systematic prompt fading, similar to procedures used during the tactile prompt teaching sessions, would have led to the occurrence of spontaneous verbalizations during the verbal prompt conditions. Anecdotal reports, however, suggested that traditional prompting and fading techniques were not effective for Ron in this context.

Although these results are preliminary and reflect implementation with only 1 student with autism, the data indicate that the vibrating device can serve as an unobtrusive prompt for verbalizations. Anecdotal reports indicated that during the follow-up sessions,

Ron's peers were observed to respond and initiate to him and did not appear to be aware that the device signaled him to talk. Future research might evaluate the collateral effects of the device on peers' rates of initiations, as well as identify ways to fade the tactile prompt to transfer stimulus control of the initiations to the natural environment.

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