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Within-Session Progressive Gestural-Prompt Delay to Teach Receptive Identification

Breanne Stiemsma
Western Michigan University, breanne.stiemsma@gmail.com

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Abstract

Receptive identification skills are important for any child to learn. Without these skills, various aspects of development can become impaired. There are many ways to teach receptive identification. This project pulled ideas from previous studies on within-session progressive gestural-prompt delays as well as the different methods of teaching receptive identification skills, simple-conditional method and the condition-only method. The student was not acquiring receptive identification skills with the traditional methods used in the classroom. Within-session progressive gestural-prompt delay was used in this project to teach receptive identification of objects. An AB single-subject design was used in this project. The student responded independently for 10% of trials in baseline. During intervention, she responded independently 12% in phase 1, 45% in phase 1a, 18% in phase 1b, and 27.5% in phase 1c. The student did not phase change. The within-session progressive gestural-prompt delay was not effective in teaching receptive identification of objects to the student in this project. Future research should look at different prompt delays and more concrete prerequisite skills for students.

Within-Session Gestural-Prompt Delay to Teach Receptive Identification

The ability for children to develop receptive language skills is crucial for overall language development (Grow & LeBlanc, 2013). Receptive language or discrimination skills include the following: children being able to follow simple instructions, identify parts of an object, orienting themselves toward sounds in their environment, and spatial and temporal relations (Drash & Tudor, 1993). Children typically start to encounter receptive language while interacting with parents or caregivers (Grow & LeBlanc 2013). There are several reasons that could attribute to a lack of receptive language development. Sometimes specific ways of teaching this skill can be inefficient or ineffective for some children.

The children who attend the Kalamazoo Regional Education Service Agency's (KRESA's) Early Childhood Special Education (ECSE) classrooms are taught receptive language through a variety of procedures. One of those procedures specifically teaches receptive identification. The tutor tells the student to touch a specific stimulus from an array and the child is expected to touch that specific stimulus. Least-to-most is used for prompting when the student engages in an incorrect response. This way of teaching receptive identification can be inefficient or ineffective for some children. Children can still acquire this skill through other ways of teaching receptive identification.

There are two methods commonly used in teaching receptive discrimination in the classroom previously mentioned. More specifically, in early intensive behavioral interventions, the simple-conditional method and the conditional-only method are implemented. The simple-conditional method includes a series of nine steps. According to Grow, Carr, Kodak, Jostad, and Kisamore (2011) steps 1, 2, and 6, of the simple-conditional method, one object is trained in

isolation. The third and fourth steps of the simple conditional method add a distractor item in with the previously trained object. The remaining steps, 5, 7, 8, and 9, include arrays of two or three objects (Grow et. al. 2011). The conditional-only method is similar to the final step of the simple-conditional method. Studies have been conducted to determine which method is more efficient in teaching receptive discrimination. Grow et. al. (2011) found that the conditional-only method was more efficient than this simple-conditional method. A replication of the Grow et al. (2011) study was conducted and they came to the same conclusion (Vedora & Grandelski, 2015).

Vedora and Grandelski (2015) used a progressive prompt delay in their study. A progressive prompt delay was implemented to fade out a gestural prompt. A gestural prompt was administered immediately after the direction was given. The prompt delay increased by two seconds after two correct responses. The prompt was immediate gesture for the 0s delay. The delay increased 2s for prompted correct responses. For independent correct responses, the delay increased to 4s (Vedora & Grandelski. 2015). If the participant responded incorrectly, the S^d was repeated with an immediate gesture prompt. After two incorrect responses, the delay was decreased by 2s. Another prompting procedure is a within-session progressive gestural-prompt delay. At first the prompt is immediately given after the instruction. As the criteria are met for each phase the prompt is delayed by a certain number of seconds until a maximum delay is reached. The goal of within-session prompt delays is to promote independent responses before the prompt is given and limit the amount of incorrect responses.

A within-session progressive gestural-prompt (WSPGP) delay was used in this project. The purpose of this project was for the child to acquire receptive identification skills. A gradual delay was used to fade the gestural prompts. A secondary measure was to determine if using a WSPGP delay is more efficient than least-to-most prompting when teaching receptive

identification of objects.

Method

Participants

The student in this study was a three-year-old girl diagnosed with a cognitive delay. The student was chosen due to a lack of receptive identification skills and difficulty acquiring receptive identification through the methods used in the classrooms at West Campus. The student previously had an ID objects procedure in place. She was not progressing at a fast enough pace. It took the student 33 sessions to phase change in the first phase of the ID objects procedure. Another 21 sessions in the second phase were conducted before she moved onto the third phase. It took eight sessions to phase change to the fourth phase and then it took 16 sessions to phase change to phase five. In the fifth phase, 12 sessions were run until a sub phase was implemented. By the fifth phase the student had seven objects to identify but was only identifying six objects (e.g. car, shoe, doll, sock, phone, book, and dog). She was not maintaining objects from previous phases. The student whistle blew on three sessions of the five phases of the ID objects procedure. Whistle blowing is when a student consistently scores lower than a specified amount. When selecting students for this study an inclusionary criterion was that the child had to have some matching skills and attending in their repertoire.

Settings/Materials

The study took place in an Early Childhood Special Education classroom at Kalamazoo Regional Education Service Agency's West Campus. Sessions took place in the student's booth that contained a desk and two small chairs.

Three novel objects, a data sheet, a writing utensil, and a clear plastic bin were materials

used in this project. Preference assessments were conducted before each session to determine

highly preferred reinforcers for the participant.

Inter Observer Agreement (IOA).

IOA was collected for 18.75% of sessions (3 out of 16). The observer used the same data

collection materials. We took data during the sessions and compared at the end of the session.

Total count IOA was used. IOA was 96.6%

Design

A single-subject AB design was used to measure the acquisition of receptive

identification of objects. We compared the percentage of independent responses during baseline

to the percentage of independent responses during the intervention.

Procedure

Baseline. Baseline data were collected for two sessions. Ten trials were conducted in

each session. The student was presented with three novel objects and the student was given the

direction "put in…". The objects were fish, cat, or snake. The objects and positions (e.g. left,

right, and middle) were randomized using an online list generator. Correct responses were not

reinforced and incorrect responses were not prompted. A variable-interval reinforcement

schedule was implemented. In baseline sessions, there is typically no reinforcement given. This

student had a denser reinforcement schedule. The variable interval schedule of reinforcement

reduced problem behavior being emitted during baseline.

Baseline 2. Gestural baseline was implemented after baseline. Gestural baseline data

were collected for three sessions. The gestural baseline was taken the same way as the regular

baseline but included a gestural prompt. The gesture prompt was delivered immediately after the

direction "put in…".

Phase 1. The same three novel objects were placed on the table and the student was given the direction "put in" fish, cat, or snake. The bin was held by the researcher and the student was supposed to put the correct object into the bin. The independent variable in this study was the use of a WSPGP delay. The delay increased by 2s after two correct or independent responses. The delay decreased by 2s after two incorrect or no responses. The maximum delay was 4s. Correct responses were immediately reinforced. If the student engaged in an incorrect response the researcher moved to the next trial. After two correct responses at the 4s delay, the student moved on to independent responses. There was no prompt for independent responses. The response needed to occur within 4s after the S^d was given for it to be considered an independent response. A response was considered correct if the student put in the correct object within 4s after the prompt was the delivered. A response was considered incorrect if the student touched any object that did not correspond with the direction. A response was considered a no response if the student did not respond within 4s of the prompt being delivered. We moved through the prompt delays (4s, 2s, 0s, TA) if no response occurred. Refer to Appendix A for further descriptions of student's responses. The dependent variable in this study was for the student to independently put the correct object in the bin within four seconds of being given the direction to put in a certain object. We ran, on average, 2.67 sessions a week.

Phase 1a. Edibles were used as reinforcers due to lack of motivation. No major procedure changes were made during this phase.

Phase 1b. An error correction was added for incorrect responses. The error correction was an immediate gestural prompt. To be more specific, the researcher touched the correct object with an index finger while repeating "put in…". If the student still made an incorrect response we would turn away for three seconds. A differential reinforcement procedure was also

implemented in this phase. A neutral "good" was given after a corrected incorrect response or no response. More enthusiastic praise was given for correct and independent responses. All aspects of the intervention remained the same other than the changed mentioned.

Phase 1c. Objects were changed from fish, cat, and snake to three shapes (i.e. triangle, square, and circle). The correction procedure for an incorrect and no responses switched to the immediate gestural prompt after a repeated SD. The shapes were large and were stuck to the wall, at eye level, using Velcro. This phase was implemented to see if the student's vision was a factor for the slow progress being made in previous phases. All major parts of the intervention stayed the same other than what was mentioned.

Results

The purpose of this project was to teach receptive identification of objects using a WSPGP delay. The student in this project was having difficulty acquiring receptive identification skills. The data is shown in Figure 1. During baseline the student responded independently 10% (3 out of 20) of trials. This suggests that the student had some receptive identification skills. In Phase 1 the student responded independently for 12% (6 out of 50). During Phase 1a, the student responded independently for 9 of 20 trials (45%). The results of Phase 1b were similar to the first phase. The student responded independently for 18% of trials (9 out of 50). The results for Phase 1c stated the student responded independently for 27.5% of trials (11 out of 40). These results suggest the WSPGP delay did not produce any significant difference in independent responding.
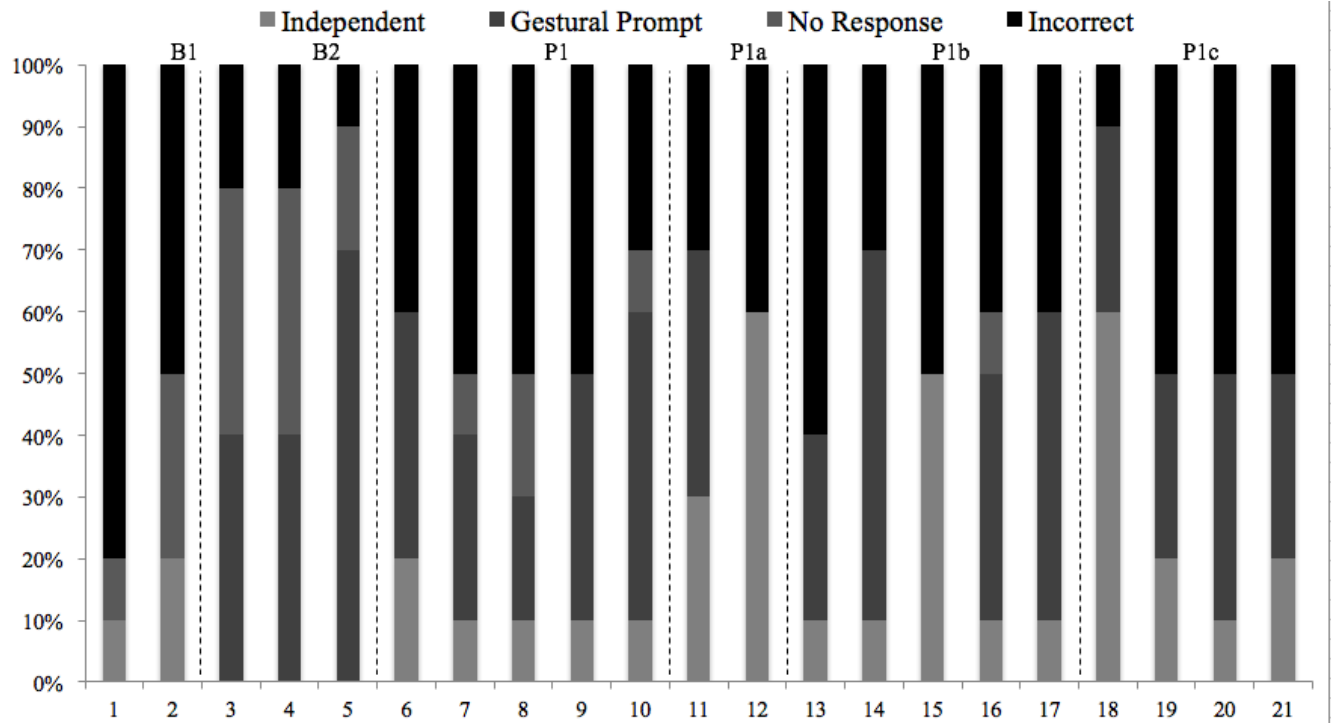
Figure1

Figure 1. Receptive Identification. The percentage of independent responses, gestural prompt, no response, and incorrect responses emitted by student.

Discussion

The project did not reach the goal of teaching receptive identification of objects to the student. The student did not reach phase change criteria. The WSPGP delay was not more effective in teaching receptive identification skills than least-to-most prompting. The within-session progressive gestural-prompt delay may not be effective for all children.

A change that could have been made was shortening the prompt delay. The original prompt day was increased by two seconds after every two correct responses. The student was responding before the prompt during the 2s delay and 4s delay. Changing the delay from 0s, 2s, and 4s to 0s, 1s, and 2s could have increased correct responses.

There were some limitations and potential confounding variables in this project. A

potential confounding variable is that one of the objects used in this project was used in another procedure. In this project we used cat, snake, and fish as our objects and in the student's matching simple pictures procedure cat was also used. In the matching procedure, a picture of a cat was used and in this project a small toy cat was used. Having the same object could have made a difference in her responding to cat versus the other objects. There also was a question of whether the student's vision was effecting the progress being made.

Future research should be conducted using the WSPGP delay. The WSPGP delay is a new way of teaching receptive identification skills and could work for others who are not acquiring them. Future research should look at different prompt delays other than 0s, 2s, 4s, and independent. Also, future research should be conducted using error correction procedures for incorrect responses. Determining prerequisite skills needed for students is another area future research should consider. This project also affects the curriculum of the classroom. Most prompting hierarchies used in the classroom are most-to-least or least-to-most prompting. Some children may not respond well to physical prompting that comes with those two methods and the WSPGP delay eliminates the need for physical prompting.

Acknowledgements

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Appendix A

ID Objects
Within-Session Progressive Gestural-Prompt Delay

Objective: Student will correctly and independently identify 10 objects, with at least 80% accuracy across 3 consecutive sessions or 90% accuracy across 2 consecutive sessions

Materials: ID Objects List A- car, shoe, doll, book, phone, dog,

Reinforcers: Highest MO item as determined by choice of potential reinforcers (Do preference assessment)

Tutor Presentation/S^D:
- Tutor establishes student attending/eye contact
- Tutor says "put in…"
- See data sheet for which object and location of the object

Prompt Definitions:
- **0 second delay-** provide gesture prompt simultaneously with SD
- **2 second delay-** provide gesture prompt 2 seconds after SD
- **4 Second delay-** provide gesture prompt 4 seconds after SD
- **Independent-** do not provide gesture prompt

Independent Response
- A response is independent if the participant responds correctly before the prompt is given

Correct response
What student does:
- If at prompting
  - Student touches object within 4 seconds after gestural prompt is provided
- If at independent
  - Student touches object within 4 seconds after the S^D
What tutor does:
- Immediately deliver edible/tangible and excited praise

Incorrect Response
What student does:
- Student touches any other non-targeted object
What tutor does
- Record as incorrect and move to next trial

No Response
What student does
- If at prompting
  - Student doesn't touch object within 4 seconds after gestural prompt is provided

- If at independent
    - Student doesn't touch object within 4 seconds after the S^D

What tutor does
- Repeat S^D and move to more intrusive prompt delay
- If at a 0s delay turn away for 3s
- Record prompt delay or turn away

Data Collection: 10 trials (+) for correct, (-) for incorrect, (NR) for no response, (I) for independent

Within-Session Progressive Gestural-Prompt Delay
- **After 2 correct or Independent responses** increase the delay
    - If at 0s delay go to 2s delay
    - If at 2s delay go to 4s delay
    - If at 4s delay go to independent
- **After 2 incorrect responses or 2 no responses** decrease the delay
    - If at independent go to 4s delay
    - If at 4s delay go to 2s delay
    - If at 2s delay go to 0s delay
- Sessions begin on the delay that the previous session ended on

To start each session, begin at the delay of the last correct trial of the previous session. The tutor should start at the 0 second delay on the first session. Mark in the Prompt Delay column which delay is used for each trial.

Appendix B

Date:	Initials:	Phase:			
Trial	Prompt Delay	Target	Position	Data	Correction
1	0s 2s 4s Ind				TA 0s 2s 4s
2	0s 2s 4s Ind				TA 0s 2s 4s
3	0s 2s 4s Ind				TA 0s 2s 4s
4	0s 2s 4s Ind				TA 0s 2s 4s
5	0s 2s 4s Ind				TA 0s 2s 4s
6	0s 2s 4s Ind				TA 0s 2s 4s
7	0s 2s 4s Ind				TA 0s 2s 4s
8	0s 2s 4s Ind				TA 0s 2s 4s
9	0s 2s 4s Ind				TA 0s 2s 4s
10	0s 2s 4s Ind				TA 0s 2s 4s
			% Ind _____		

Date:	Initials:	Phase:			
Trial	Prompt Delay	Target	Position	Data	Correction
1	0s 2s 4s Ind				TA 0s 2s 4s
2	0s 2s 4s Ind				TA 0s 2s 4s
3	0s 2s 4s Ind				TA 0s 2s 4s
4	0s 2s 4s Ind				TA 0s 2s 4s
5	0s 2s 4s Ind				TA 0s 2s 4s
6	0s 2s 4s Ind				TA 0s 2s 4s
7	0s 2s 4s Ind				TA 0s 2s 4s
8	0s 2s 4s Ind				TA 0s 2s 4s
9	0s 2s 4s Ind				TA 0s 2s 4s
10	0s 2s 4s Ind				TA 0s 2s 4s
			% Ind _____		

Date:	Initials:	Phase:			
Trial	Prompt Delay	Target	Position	Data	Correction
1	0s 2s 4s Ind				TA 0s 2s 4s
2	0s 2s 4s Ind				TA 0s 2s 4s
3	0s 2s 4s Ind				TA 0s 2s 4s
4	0s 2s 4s Ind				TA 0s 2s 4s
5	0s 2s 4s Ind				TA 0s 2s 4s
6	0s 2s 4s Ind				TA 0s 2s 4s
7	0s 2s 4s Ind				TA 0s 2s 4s
8	0s 2s 4s Ind				TA 0s 2s 4s
9	0s 2s 4s Ind				TA 0s 2s 4s
10	0s 2s 4s Ind				TA 0s 2s 4s
			% Ind		