Teaching requesting and rejecting sequences: An important step in early communication programming

Nancy C. Brady
Department of Speech, Language and Hearing Sciences, University of Kansas, Lawrence, KS, USA

Question: Can four children with severe developmental disabilities learn to produce a sequence of AAC responses aimed at rejecting one object and subsequently requesting another object in highly controlled settings?

Design: A multiple-probe design across participants (Horner & Baer, 1978) was used to examine the effectiveness of intervention within the teaching contexts. Generalization to two untrained contexts was measured pre- and post-intervention, and short term maintenance was assessed.

Allocation: All four children participated in each phase of the study (baseline, intervention, generalization, and follow-up). The authors did not specify how the children were allocated to the tiers in the multiple-probe design.

Blinding: Interventionists, observers, and those analyzing the data were not blind to conditions.

Study duration: The length of the intervention in terms of days is not provided. The participant with the most intervention had 43 sessions, but the number of sessions per day or week was not specified. This participant then had three follow-up probes starting 2 weeks after the last intervention session.

Setting: All training, generalization, and follow-up probes occurred in a partitioned corner of a self-contained public school classroom.

Participants: Four children with developmental disabilities and severe communication impairments participated. Their age range was 6.5–7 years. Three children had autism diagnoses. All four communicated with augmentative and alternative communication (AAC) —three with speech-generating devices (SGDs) and one with a picture exchange system.

Intervention: Each participant had participated in a pre-training phase where they learned to request objects using a "missing object" procedure. For example, one participant was provided with a juice box but without a straw. This context provided the motivation to request a straw. The symbol array available for each participant varied, as did the AAC devices.

Three children used SGDs. Two children used SGDs with arrays of up to 45 symbols that required a two-button response to access desired vocabulary. For example, one participant accessed "straw" by first pushing the cup symbol, which then brought up an array containing "straw." The third SGD contained 32 symbols on a single array. The fourth participant learned to select then exchange paper symbols from a 3-choice array.

The key manipulation for this study was to follow a participant's initial request with either the asked-for object (matched trials) or a wrong object (unmatched trials). Participants were taught to respond to the presentation of a wrong object by selecting a "no" symbol. Prompts were provided if necessary then gradually reduced. One participant required additional procedures to learn to select the "no" symbol. Initially, he was provided with only the "no" symbol, preventing errors. Then the distracter symbols were re-introduced. The next part of the teaching procedures for all the participants involved providing opportunities to re-request. Following the correct selection of the "no" symbol, the experimenter waited up to 10 seconds for the participant to re-request the appropriate object. If the participant did not spontaneously re-request, he was prompted to do so. Treatment integrity was measured through the use of a checklist of experimental procedures completed by an independent observer for 26% of sessions. The checklist results indicated high treatment integrity.

Outcomes: Participants' correct selection of symbols representing requests for matched items, selection of the "no" symbol to reject unmatched items, and re-requests of matched items were recorded. Inter-rater agreement was measured by a second, independent observer who recorded participant responses. The percentage of agreements between the two raters was high for all participants.

MAIN RESULTS

The four participants learned the pre-training requesting response to a criterion of 5 sessions of 100% correct performance in 90, 92, 114, and 206 trials. Three participants learned the reject/re-request sequence in a relatively small number (7–11) of sessions. Each session had 6–8 trials. The fourth participant learned the sequence following the additional, errorless, teaching procedure and 11 regular intervention sessions. All four participants also demonstrated some correct responses to generalization probes with un-trained materials. Follow-up probes completed 2 weeks after training ended showed maintenance of the rejecting and re-requesting responses. However, some decline in performance was noted in the second follow-up session for one participant and by the third follow-up session for another.

AUTHORS' CONCLUSIONS

All four participants learned a sequence of requesting missing items, rejecting unmatched items, and then re-requesting the missing item, using the teaching procedures described in this study.

COMMENTARY

The internal validity of this study is acceptable using criteria of single-subject experimental design studies. All four participants showed relatively flat performance of the rejecting and requesting responses in baseline, and each increased their responding during the intervention phases. The pattern clearly indicates that it is the intervention that is responsible for the changes reported.

This study is clinically significant because it demonstrates an important step in learning to communicate in a back-and-forth exchange. For most people, communication does not stop

after one turn, such as a request followed by receiving the object requested. Back-and-forth interactions between communication partners require multiple discriminations such as those targeted in the current study. Many intervention programs assume that individuals will be able to make these discriminations without specific training, but often individuals do not progress. Specific, targeted interventions such as those described in the current study are needed for many individuals with more significant communication needs.

A relative strength of the design is the fact that multiple generalization probes were conducted during baseline and post intervention when single post-generalization probes are frequently observed in the AAC intervention literature (Schlosser & Lee, 2000). However, it is very difficult to visually discriminate the teaching vs. generalization trials on the graphs, particularly in the baseline sessions.

One of the major limitations to the current study is the limited intervention context and generalization probes. The communication context was limited to a one-to-one massed trial setting in a corner of a self-contained classroom. Generalization probes involved different materials but the same limited context. Future research is needed that focuses on improving communication in additional contexts and environments and with additional partners.

References

Horner RD, Baer DM. Multiple-probe technique: A variation of the multiple baseline. Journal of Applied Behavior Analysis. 1978; 11:189–196. [PubMed: 16795582]

Schlosser RW, Lee D. Promoting generalization and maintenance in augmentative and alternative communication: A meta-analysis of 20 years of effectiveness research. Augmentative and Alternative Communication. 2000; 16:208–227.