# Does Delivering Praise During Error Correction Procedures Result in Slowing the Acquisition Rate of the Target Goal?

VBA
Verbal Behavior Associates

## Matthew Howarth, Ph.D, BCBA-D, CLEO SCHMITT, M.S., BCBA, Heather Diaz, M.A., Elizabeth Sarto, M.A., BCBA

## ABSTRACT

The researcher studied the effects of two different error correction procedures by comparing participant learning rates for novel tact acquisition. Four participants were assigned to matched pairs in an ABA/BAB design, utilizing counter balanced stimuli. The correction procedure entailed prompting the student to respond correctly, contingent on the student emitting an error and then providing an opportunity to respond independently to the same discriminative stimulus a few seconds later. In condition A, the instructor delivered reinforcement (e.g., vocal praise) to participants following correct responses during the error correction procedure. In condition B, the instructor did not deliver any reinforcement to participants following correct responses during the error correction procedure. The dependent variable was the participants acquisition rate for tact instructional objectives, and the independent variable was they type of error correction procedure used. The purpose of this study was to determine whether delivering praise during the error correction procedure would affect the acquisition rate of the target goal. The results of this study showed that correction procedures without praise resulted in slightly faster acquisition rates, however this may be dependent on learner characteristics, and more research needs to be done to determine the variables controlling each participants individual acquisition rate.

## PARTICIPANTS

The participants in this study were 4 students, aged 4-5 years old. They were each enrolled in an ABA home program receiving one-on-one instruction, 2-5 days per week. Procedural data were collected as part of each student's ABA home program. Two students were enrolled in Pre-school and two students were enrolled in Kindergarten during this study. Each child received instruction within their home environment

| Participant | Age | Diagnosis |
| --- | --- | --- |
| A | 5 | ASD |
| B | 5 | ASD |
| C | 4 | ASD |
| D | 5 | ASD |

## LITERATURE REVIEW

Differential reinforcement and error correction procedures are implemented to increase correct responding during discrete trial instruction. Error correction procedures vary in the field of applied behavior analysis and it is important to evaluate the controlling variables in order to determine which are responsible for faster learning rates. Contributions to the research on error correction procedures include evaluating the properties in terms of enhanced stimulus control (McGhan & Lerman, 2013; Worsell, Iwata, Dozer, Johnson, Neidert, & Thompson, 2005), negative reinforcement (Rogers & Iwata, 1991), and extinction (Caroll & Joachim, 2015).

Rodgers and Iwata (1991) investigated the effects of three error correction procedures, including differential reinforcement, practice, and avoidance, across seven individuals during match-to-sample trials. The results of this study showed that, for some individuals, trial repetition enhanced stimulus control over correct responding and that error correction procedures improved performance through negative reinforcement.

Caroll and Joachim (2015) evaluated four correction procedures. The single response repetition, the remove and re-present condition, the re-present until independent condition, and the multiple response repetition. The results of this study showed that the re-present until independent error correction led to the quickest skill acquisition for three of the five participants.

Collectively, the results from the studies described above indicate that participant errors decreased the most when the instructor re-presented the antecedent until the participant emitted an independent response. In each of the above mentioned studies, the instructor delivered praise following correct responses on remedial trials. During the current study, the researcher will compare the effects of the following two error correction procedures on participant rates of learning: 1) the instructor will deliver praise following correct responses during error correction procedures, and 2)"re-present until independent" without praise (following an error correction without praise, the instructor will continue to present the antecedent until the participant responds correctly without a prompt). The purpose is to identify whether delivering praise during an error-correction procedure results in slower acquisition rates of the target goal. The current study is based on the assumption that the student should learn to respond correctly between a correct and incorrect response if the consequences are easily discriminated. If the student is only reinforced for correct, independent responses, then the probability of correct responding should increase while incorrect responding decreases. If the student is reinforced for correct, independent responses as well as prompted correct responses, the discrimination becomes weaker and acquisition of the incorrect response would be slower. The selection of the incorrect response should decrease because of extinction or corrective consequences presented (Mueller, Palcovik, & Maynard , 2007).

## VARIABLES

*Dependent Variable*: The dependent variable for this study was the acquisition rate of the target objective.

*Independent Variable*: The independent variable in this study was the type of error correction procedure that was implemented.

## PROCEDURE

### PRE-INTERVENTION PROBE TRIALS

Prior to the start of the study, the instructor conducted probe trials to ensure that none of the participants had the target tacts in repertoire. During the probe trials, the instructor used three tact sets, each consisting of five target stimuli. The sets included foods (banana split, clam chowder, wasabi, plantain, and thyme), animals (barracuda, pygmy, pollywog, antelope, and bengal), and household items (filing cabinet, ice tray, towel rack, mason jar, and cat mat). The results of the pre-experimental probe trials showed that none of the participants had the tacts in repertoire prior to the start of the study.

### INSTRUCTION WITH CORRECTION PROCEDURE WITH PRAISE (CONDITION A)

This correction procedure was implemented following an incorrect response to a tact trial. Contingent on an error, the instructor prompted the correct tact and had the student repeat the correct tact. The instructor then waited 1-2 seconds before re-presenting the tact card for an independent corrective response. The instructor delivered vocal praise following the independent corrective response. Praise consisted of the instructor saying, "good job," "nice work," or giving a high 5 to the student and saying "that is right!" Following the competion of 20 tact trials, the instructor moved on to another program.

### INSTRUCTION WITH CORRECTION PROCEDURE WITHOUT PRAISE (CONDITION B)

This correction procedure was implemented following an incorrect response to a tact trial. Contingent on an error, the instructor prompted the correct tact and had the student repeat the correct tact. The instructor then waited 1-2 seconds before re-presenting the tact card for an independent corrective response. The instructor delivered praise following correct tact trials but not following corrective responses during an error correction procedure. Following the competion of 20 tact trials, the instructor moved on to another program.

## DISCUSSION

The results of this study demonstrated the correction procedure without praise resulted in slightly faster acquisition rates than the correction procedure with praise. Each participant was matched with another participant with similar verbal language skills. Participant B was the only participant that consistently demonstrated faster tact acquisition during condition B (i.e., correction procedure without praise) versus condition A (i.e., correction procedure with praise). Participant A demonstrated faster tact acquisition during condition A (i.e., correction procedure with praise), while Participant C demonstrated similar acquisition rates across both correction procedures. Overall, participant D demonstrated faster tact acquisition during condition B (i.e., correction procedure without praise) however, his acquisition rates for sets 2 and 3 were identical, despite the fact that they were presented during different conditions. The researcher calculated the average acquisition rate across all participants and conditions, and found that the participants required 60 more trials to criteria during condition A (i.e., the correction procedure with praise) compared to condition B (i.e., correction procedure without praise).

The results from this study demonstrated that the absence of praise during a correction procedure did not always result in faster acquisition rates. Both correction procedures were shown to be effective in teaching correct responding to tact instruction, however further research should be done to individualize correction procedures based on the learner's particular needs and verbal abilities. A confounding variable may be that praise was not reinforcing to all of the participants so it would be important to determine if praise functions as a reinforcer prior to using this as a consequence to teach. Students with different skill levels may require different correction procedures for learning. Identifying the variables within the correction procedure that increase acquisition rates would be valuable in individualizing correction procedures for students.

- Haith, M.M., Bergman, T., & Moore, M.J. (1977). Eye contact and face scanning in early infancy. *Science, 198*(4319), 853-855.
- Maffei-Lewis, J. (2011). The effects of conditioned reinforcement for adult faces and/or voices on the rate of learning and attention to the presence of adults for children with autism spectrum disorder. Unpublished doctoral dissertation, Teachers College-Columbia University.
- Massaro, D. W., & Bosseler, A. (2006). Read my lips. *Autism, 10*(5), 495-510.
- Rovee, C.K., & Rovee, D.T. (1969). Conjugate reinforcement of infant exploratory behavior. *Journal of Experimental Child Psychology, 8*, 33-39.

## RESULTS

The study was conducted as an ABA design and each participant was exposed to both correction procedures.

Participant A required an average of 160 trials to reach criteria during condition A (correction procedure with praise) and 220 trials to reach criteria during condition B (correction procedure without praise).

Participant B required an average of 520 trials to reach criteria during condition A (correction procedure with praise) and 190 trials to reach criteria during condition B (correction procedure without praise).

Participant C required an average of 140 trials to reach criteria during condition A (correction procedure with praise) and 160 trials to reach criteria during condition B (correction procedure without praise).

Participant D required an average of 200 trials to reach criteria during condition A (correction procedure with praise) and 100 trials to reach criteria during condition B (correction procedure without praise).

Overall, the participants' demonstrated an average acquisition rate of 230 trials to criteria during condition A (correction procedure with praise) and 170 trials to criteria during condition B (correction procedure without praise).


Participant A


Participant B


Participant C


Participant D


Comparison of Condition A (correction with praise) and Condition B (correction without praise) (average across participants)

Contact: matt@vbasandiego.com, cleo.schmitt@vbasandiego.com, heather.diaz@vbacalifornia.com, elizabeth@vbasandiego.com
www.vbasandiego.com