



# A Comparison of Mastery Criteria in Young Children Diagnosed with Autism.

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## Introduction

Behavioral intervention for young children diagnosed with autism involves teaching new skills that address the characteristics of autism. When teaching new skills to children diagnosed with autism, skills are taught to a predetermined criterion. A criterion is selected that presumably will result in the skills maintaining after treatment ends. In the past, skills have been taught for varying numbers of days. For example, Eikeseth and Hayward (2009) taught skills to criterion for one session and Chaabane, Alber-Morgan, and DeBar (2009) taught skills to criterion for three sessions. The number of days skills are in acquisition is important so that therapists can be both effective and efficient. No studies to date, however, have investigated how many days are necessary for skills to be acquired and maintained.

The current study investigated the effect of teaching a skill to various criteria (i.e., varying number of days at 100%) on skill maintenance for children diagnosed with autism. The total number of treatment phases to reach a mastery criterion was evaluated.

## Method

**Participants.** Participants were four boys diagnosed with autism ranging from 2-9 years old in age receiving therapy from a university clinic or an in-home autism program.

**Setting and Materials.** Experimental sessions were conducted in a location respective to the participant's program. Food reinforcers that were delivered after each prompted or correct trial were chosen from a multiple stimulus without replacement preference assessment (DeLeon & Iwata, 1996) that was conducted at the beginning of each treatment session.

**Acquisition Programs.** Participants were taught three to five targets for skills that had not been previously taught in their treatment plan.

**Baseline.** Data were collected on each target for three sessions for each participant. There were no programmed consequences in this condition.

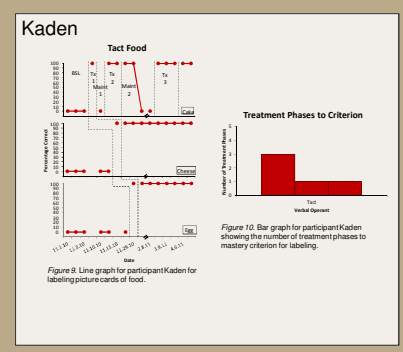
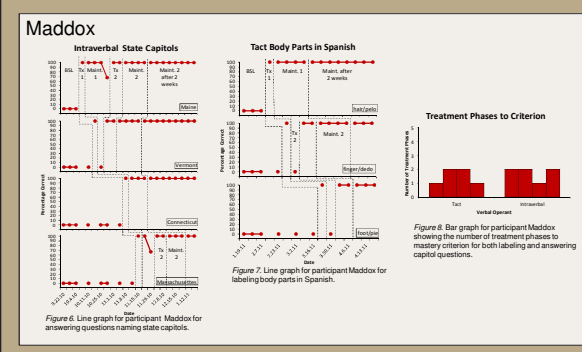
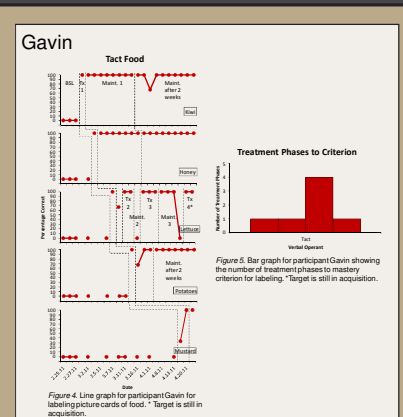
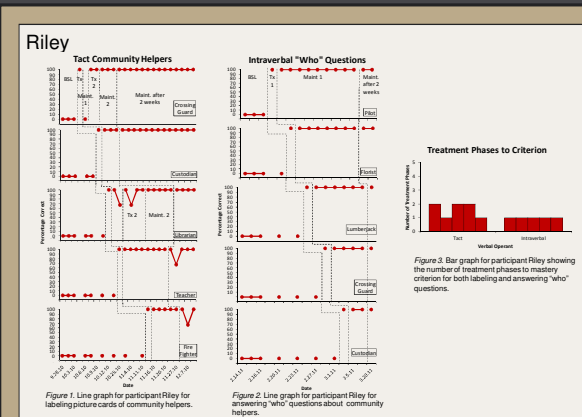
**Treatment 1.** Researchers taught one target per session by using a simultaneous prompt for each of ten trials. After the ten prompted trials researchers conducted three checks of the target. The percentage correct was calculated from the three checks. If the participant did not respond to the checks with 100% accuracy, then the researchers used the simultaneous prompting procedure in subsequent sessions until the participant reached 100% accuracy in the checks for one day.

**Maintenance.** When a target met the mastery criterion of one session at 100% accuracy of three checks, the target was then considered a maintenance target. The target was checked three times in maintenance each day that the researchers had a session.

**Treatment 2, 3, & 4.** If a target fell below 100% accuracy in maintenance, the target was then put back into treatment. The target was then taught to 100% accuracy for the number of days the target was taught in the previous treatment phase plus one day. For example, if the target was in the second phase of treatment, the criterion was changed to 2 days at 100% accuracy. If the target was in the third phase of treatment, the criterion was three days at 100% accuracy.

**Data Collection, Interobserver Agreement and Procedural Integrity.** The therapist recorded the trial as an error, prompt, or correct after each trial was completed. Interobserver agreement and procedural integrity was measured for 29% of all sessions. Interobserver agreement was 98% across all participants. Procedural integrity was 99% across all participants.

**Experimental design and Dependent Variables.** An experimental single subject multiple baseline design across behaviors was implemented. Dependent variables included the number of phases of treatment to achieve 100% for two weeks and percentage correct.



## Results & Discussion

**Riley.** For labeling (tact), three targets took two phases of acquisition and two labeling targets took one phase of acquisition to meet the mastery criterion. For answering questions (intraverbal), all five targets took one phase of acquisition to meet the mastery criterion.

**Maddox.** For labeling body parts in Spanish, two targets took two phases of acquisition and two targets took one phase of acquisition to meet the mastery criterion. For answering state capitals questions, three targets took two phases of acquisition and one answering target took one phase of acquisition to meet the mastery criterion.

**Gavin.** One target took four phases of acquisition and three targets took one phase of acquisition to meet the mastery criterion.

**Kaden.** One target took three phases of acquisition, one target took two phases of acquisition, and one target took one phase of acquisition to meet the mastery criterion.

**Findings.** For Riley, labeling targets took more phases of acquisition than intraverbals to maintain. For Maddox, there was no difference between tacting and intraverbals. For Gavin, there was only one target that needed to be taught for more than one phase. For Kaden, all three targets took a different number of phases.

A mastery criterion set at one session would be sufficient for one participant from this study when teaching from one verbal operant (intraverbal). Mastery criteria set at two or more sessions would be necessary for the remainder of the participants to maintain targets after the mastery criterion was met.

**Limitations.** A limitation to the current study is that the current study's method did not test how a two, four or five day criterion would affect maintenance of a skill.

**Future Research.** Future research should look to find a tool to determine what mastery criteria should be set at for individual participants. Future research could also evaluate how participants maintain targets when taught targets for two days.

We would like to thank the University of Wisconsin - Eau Claire's Office of Research and Sponsored Programs for supporting this research.