

## ABSTRACT

Contemporary literature suggests that to be truly verbal, the speaker must simultaneously behave as a listener (Greer & Speckman 2009, Barnes-Holmes, Barnes-Holmes & Cullinan 2001, Greer & Ross 2008, Horne and Lowe, 1996). Because these two functions of language are initially independent of one another, language development involves the process of joining these two capabilities (Greer, 2009). Multiple Exemplar Instruction (MEI) has been used as an independent variable to teach *Naming*-a verbal developmental learning capability that allows a child to simultaneously acquire speaker and listener vocabularies incidentally" (Greer & Speckman, 2009). For this poster, we analyzed MEI sample data collected by interventionists delivering ABA services in the home and school based setting. The purpose of this review was to determine the effectiveness of MEI in the applied setting to induce naming in learners with Autism. Of the eleven students sampled, ten of them acquired the listening component (point to response) of Naming, while four of them acquired the speaker responses (pure tact and impure tact).

## PARTICIPANTS

Participants in the current study included eleven students, between the ages of 3 and 6, all diagnosed with developmental disabilities. Each Participant was received one on one ABA instruction, either in the home or school setting. All participants demonstrated the pre-requisite skills of matching non-identical 2D stimuli, and echoic tacts.

## SETTING

All students were instructed in either the home or school environment, in a designated work area. Students who received instruction in the school environment did so in an ABA classroom where their individual work area was sectioned off from the rest of the room. All students received instruction at child-sized or dining room table designated for ABA instruction.

## LITERATURE REVIEW

Horne & Lowe, 1996: Identifies *Naming* as the basic unit of verbal behavior, describes conditions under which naming is learned, and outlines its role in the development of stimulus classes.

Greer, Stolfi, Chavez-Brown, & Rivera-Valdes, 2005: Tested the effects of Multiple Exemplar Instruction (MEI) on the transfer or stimulus function for unknown pictures across listener and speaker responses. Results showed that untaught speaker responses emerged at 60%-85% for 2 participants and 40%-70% for one participant.

Greer, Stolfi, & Pistoljevic, 2007: Compared Singular Exemplar Instruction (SEI) and Multiple Exemplar Instruction (MEI) on the emergence of untaught listener and speaker responses (Naming) by preschool children who were missing *Naming*. Results showed that *Naming* emerged for the MEI group but not for the SEI group

Fiorile & Greer, 2007: Identified 4 children with autism, who prior to the study, did not have the listener or speaker component of Naming and no tact responses for 2D stimuli. For all 4 students mastery of tacts alone was not sufficient for the *Naming* or echoic-tact repertoires to emerge. Following MEI, the *Naming* repertoire emerged for all 4 students, for the initial set of stimuli. Also, *Naming* with novel stimuli emerged following tact instruction alone.

## PROCEDURE

### PRE-INTERVENTION PROBES

An assessment set of 5 unknown 2D stimuli, including 4 exemplars of each stimuli was created. The pre-intervention probe was conducted in two phases. In the first phase, the instructor taught the students to match a set of stimuli by visually observing the stimuli and matching while hearing the name of the stimuli. After at least 30 minutes, the second phase of the assessment was conducted. In the second phase, the instructor assesses untaught responses by providing the learner with 10 consecutive listener opportunities, 10 consecutive tact (speaker) opportunities, and then 10 consecutive intraverbal (speaker) opportunities. Criterion on the Naming Assessment is 8/10 or higher on listener and speaker components.

### INTERVENTION: MULTIPLE EXEMPLAR INSTRUCTION (MEI) FOR NAMING:

After achieving mastery during the MEI instruction, the Naming Assessment was conducted again, using the same stimuli that was used during the pre-test. If the student passed the Naming Assessment with this set of stimuli, a novel assessment set was used to ensure that naming was induced. If criteria was not achieved during this assessment (8/10 or higher across both listener and speaker components), MEI instruction was delivered again with a set of novel stimuli.

### POST-INTERVENTION PROBES

An unknown set of 5 2D stimuli with 4 exemplars of each stimuli was created. Instruction on these stimuli rotated across four response topographies: two listener responses (matching and pointing) and two speaker responses (tacts and intraverbals), such that no two responses were presented consecutively. Each response was presented 20 times (in rotation) totaling 80 instructional trial sessions. Once mastery level was achieved (90% x2 or 100%x1) across all four response types, a Naming Post-Assessment was delivered.

## VARIABLES & MEASUREMENT

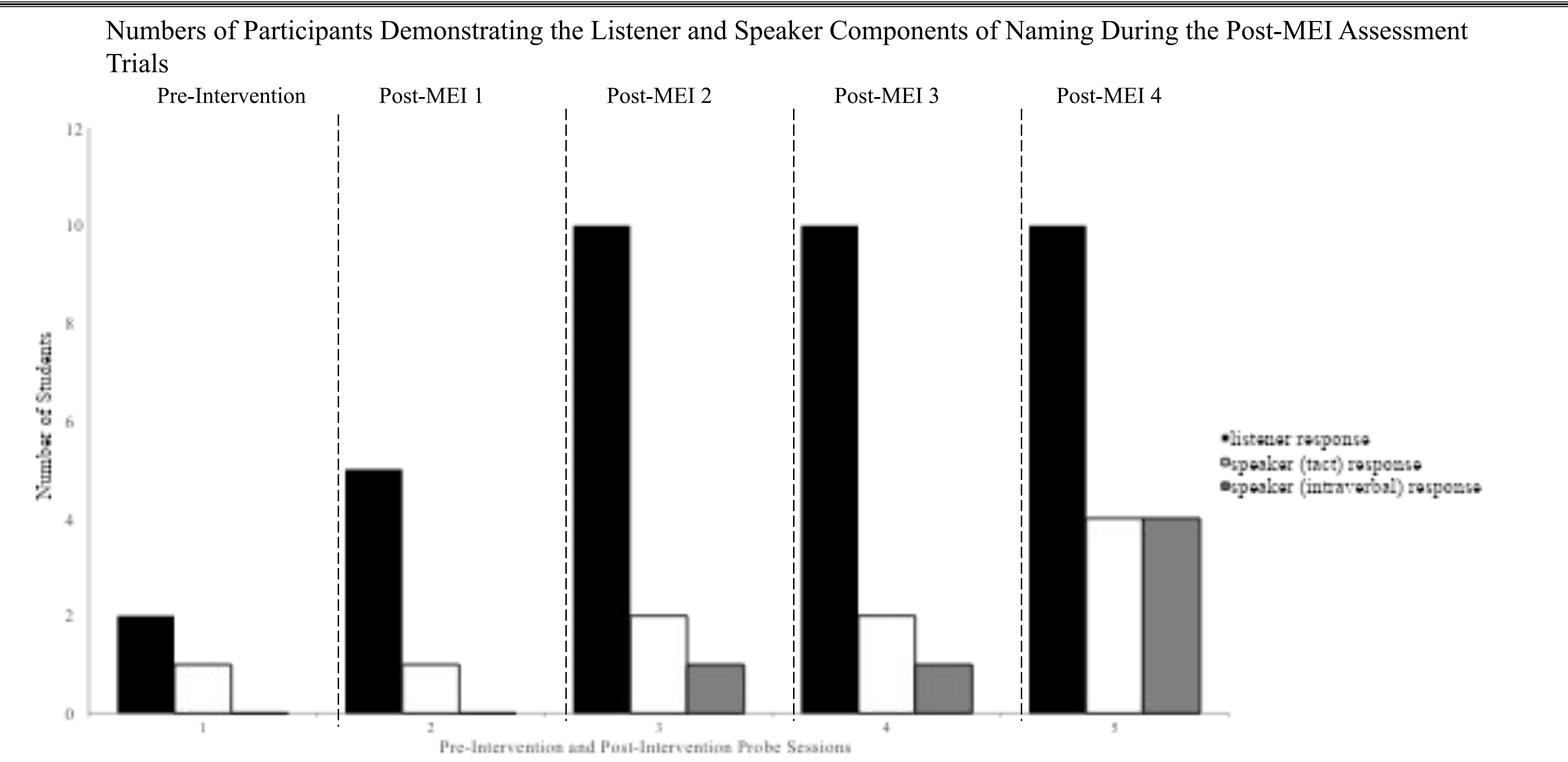
**Dependent Variable:** Number of participants who passed the listener and speaker components of the naming assessment.

**Independent Variable:** Multiple Exemplar Instruction (MEI).

**Measurement:** The Pre-intervention and post-intervention probe sessions were conducted after the Participant met mastery criteria during MEI intervention (i.e. 90% x 2 consecutive sessions or 100% x1) session, across listener and speaker components). The probe sessions were run as follows: Following 40 match opportunities with 5 novel stimuli, the student was asked to identify the target stimuli by, pointing (10 opportunities), emitting a tact response (10 opportunities), and responding intraverbally to the vocal antecedent, "What is it?" (10 opportunities). The instructor conducted the probe trials after 20-30 minutes had elapsed following the match training.

## RESULTS

Results of this study indicate that through MEI, the listener component of Naming was acquired in ten of the eleven participants. Five of the eleven students acquired the listener component of Naming after one implementation of MEI, while ten of the eleven students acquired the listener component of Naming after two implementations of MEI. Following mastery of the first MEI intervention, none of the students demonstrated any of the Naming components. Following mastery of the second and third MEI intervention, only one student demonstrated the tact component of Naming. After mastery of the fourth MEI intervention, four of the eleven students demonstrated the speaker component of Naming.



## DISCUSSION

Ten of the 11 (90%) Participants acquired the listener component of Naming following the MEI intervention, however, only four (36%) demonstrated the speaker component. While MEI consistently induced the listener component of Naming for these Participants, it did not consistently induce the speaker component. During the post-MEI probe trials, a few of the Participants showed the speaker component of Naming in response to the original set of stimuli (assessment set) but not the novel set. Hence, they did not acquire full Naming. Future research should seek to determine pre-requisite skills for students who passed the speaker component of the Naming assessment. Additionally, it would be worthwhile to compare the effectiveness of MEI to other interventions, such as the Learning New Operants Through Listener Instruction procedure.

## REFERENCES

- Fiorile, C. A., & Greer, R. D. (2007). The Induction of Naming in Children with No Prior Tact Responses as a Function of Multiple Exemplar Histories of Instruction. *The Analysis of Verbal Behavior*, 23, 71–88.
- Greer, R. D., & Ross, D. E. (2008). *Verbal behavior analysis: Inducing and expanding complex communication in children with severe language delays*. Boston: Allyn & Bacon.
- Greer, Stolfi, Chavez-Brown, and Rivera-Valdes (2005). The emergence of the listener to speaker component of naming in children as a function of multiple exemplar instruction. *The Analysis of Verbal Behavior*, 21,123-134.
- Greer, R. D., Stolfi, L., & Pistoljevic, N. (2007). Acquisition of naming for two-dimensional stimuli in preschoolers: A comparison of multiple and single exemplar instruction. *European Journal of Behavior Analysis*, 8, 119–131.
- Horne, P.J. & Lowe, C. F. (1996). On the origins of Naming and other symbolic behavior. *Journal of the Experimental Analysis of Behavior*, 65, 185-241.