Using Multiple Baseline Designs to Demonstrate the Efficacy of Using Behavior Therapy to Teach Children to Answer Questions

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The number of autism diagnoses has increased dramatically in the past decade (Association for Science in Autism Treatment). There are a variety of therapies that claim to be effective for treating autism. All clinicians providing treatment should demonstrate treatment efficacy so a non-effective treatment is not continued and also so an effective treatment is not discontinued (Cooper, Heron, & Heward, 2007). One type of therapy that has demonstrated treatment efficacy for children with autism is behavioral therapy (Lovaas, 1987).

Clinicians providing behavioral therapy utilize experimental designs to display the efficacy of clinical treatments. One of several experimental designs that can be used is a multiple baseline design. Clinicians can use a multiple baseline design when there are several targets that need treatment in one behavioral repertoire (i.e., teaching a child how to answer multiple questions). Clinicians utilizing a multiple baseline design stagger treatment temporally across these multiple targets (Baer, Wolf, Risley, 1968). Treatment efficacy is demonstrated only when progress is seen for the target in which the treatment has been implemented and not for any of the other targets where treatment has not been implemented (Cooper, Heron, & Heward, 2007).

At an internship through the Psychology Department students are able to practice providing in-home behavior therapy to young children with autism, as well as practice utilizing experimental designs to demonstrate treatment effectiveness. The current project demonstrates the implementation of a multiple baseline design to demonstrate treatment effectiveness while teaching children to answer questions.

Participants. Two children receiving services through the in-home program participated in this project. One participant was 6 years old, and the other participant was XX years old at the time of the study. Both participants demonstrated they could not answer 'wh' or 'how' questions.

Targets. The targets for both participants were selected based on their performance according to The Assessment of Basic Language and Learning Series (ABLLS).

Treatment. A package treatment was implemented that consisted of using an echoic prompt to teach the correct answer, differential reinforcement to reinforce the correct answer, and using an error correction procedure to correct incorrect answers.

Echoic prompt. The therapist asked the question (i.e., Why do you go fishing?) and immediately said the answer (i.e., To catch fish.). The child repeated the answer back to the therapist, after which the therapist would represent the trial to have the child independently say the answer.

Differential Reinforcement. The therapist gave praise and preferred items contingent on independent correct answers.

Error Correction. If the child gave an incorrect answer (i.e., saying 'in a boat' when asked 'why do you go fishing?'), the therapist repeated the question, prompted the correct answer, and then repeated the question a third time in order for the child to independently say the correct answer.

Figure 1. A multiple baseline design demonstrating that echoic prompting was effective in teaching 'how' questions.

Figure 2. A multiple baseline design demonstrating that echoic prompting was effective in teaching 'why' questions.

Figure 3. A multiple baseline design demonstrating that echoic prompting was effective in teaching 'who' questions.

Figure 4. A multiple baseline design demonstrating that echoic prompting was effective in teaching 'personal' questions.

Brief Discussion
All figures portray an accurate use of a multiple baseline design in order to demonstrate clinical effectiveness. All figures display a clear relationship between the behavioral treatment implemented and the percentage correct of answers to various questions. The treatment for the targets for all four figures was staggered temporally across the targets, and progress was demonstrated only when the behavioral treatment was implemented for all targets. According to Cooper, Heron, and Heward (2007), these figures demonstrate that behavior therapy was effective for teaching children with autism to answer various questions.