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Effects of training and feedback on Discrete Trial Teaching skills and student performance

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Abstract

This study examined the effects of training and feedback on instructor performance of Discrete Trial Teaching (DTT) and support skills. This included an examination of the generalization and maintenance of instructor skills, and the impact of instructor skills on student performance. Six undergraduate research assistants received an 8-h training in DTT and taught a variety of skills and behaviors to four preschool students who had developmental disabilities. A multiple-baseline design was used to assess instructor performance following training alone, during implementation of oral and written performance feedback, and at 2, 4, 6, and 10 weeks follow-up. Instructors demonstrated correct use of DTT and related skills at a rate of 63–80% following training. When performance feedback was provided, all instructors attained proficiency ratings of 90% by the second session and 97–100% by the fourth session. High levels of instructor proficiency were maintained at follow-up and generalized across students and learning tasks. Student learning and instructional efficiency were superior in the feedback and follow-up conditions compared to baseline. The results highlight the need for training programs that allow school personnel to correctly use DTT to effectively facilitate learning and development in students who have developmental disabilities.

Keywords: Discrete Trial Teaching; Training; Supervision; Generalization; Student learning

In the year 2005, almost 700,000 children, or 5.84% of all 3–5-year-olds, received publicly funded preschool services in the United States under IDEA (IDEAdata, 2005). Those numbers reflect a 33% increase in the number of children with developmental disabilities served by public preschool programs in the last decade (U.S. Department of Education, 1996). As the number of

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young children with disabilities served increases, it is important to identify instructional methods that facilitate tangible developmental and educational gains in this population. Equally important is examining how to best train preschool educators and paraeducators to implement those instructional methods that have proven effective when used with children who have various developmental disabilities.

Discrete Trial Teaching (DTT) is an effective instructional method that has been used for decades to significantly improve the developmental and educational outcomes of children with autism spectrum disorders (ASD) and developmental delay (Lovaas, 1987, 2003; McEachin, Smith, & Lovaas, 1993; Smith, 1999). Grounded in the experimental analysis of behavior, DTT is a specific type of teacher-directed instruction that utilizes simple instructional cues, prompting, positive reinforcement, and a continuous formative assessment to shape behavior and improve children's learning (see Smith, 2001 for a description of DTT). DTT has proven particularly effective in helping young children with ASD acquire a wide range of new skills (Coe, Matson, Fee, Manikam, & Lanarello, 1990; Krantz & McClannahan, 1981; Lovaas, 1977; Risley, Hart, & Doke, 1972; Young, Krantz, McClannahan, & Poulson, 1994). Recently, DTT also has been used to facilitate skill development in preschoolers with developmental disabilities other than ASD (Downs, Downs, Johansen, & Fossum, in press).

Because of its many demonstrated strengths and proven effectiveness, it is likely that DTT will continue to be an important component of educational interventions for children with ASD and other developmental disabilities. Indeed, parents of children with ASD have increasingly demanded that their children be provided publicly funded DTT-based educational programming (Choutka, Doloughty, & Zirkel, 2004). Unfortunately, the large majority of educators and paraeducators do not receive training in DTT in their undergraduate and/or graduate training programs. As a result, most have little to no baseline knowledge of DTT procedures or how to use DTT to facilitate development of desired skills and to help students achieve desired learning objectives.

As more educators and paraeducators seek to use DTT to enhance the learning and educational outcomes of their students with ASD and other developmental disabilities, it is critical to address several training issues. First, it is important to demonstrate that individuals with no prior training or experience in DTT can be effectively trained to implement DTT procedures correctly. Some research has addressed this issue and the results have indicated that teachers, paraeducators, and parents can all be taught to correctly utilize basic DTT procedures to teach children important skills (Crockett, Fleming, Doepke, & Stevens, 2007; Koegel, Glahn, & Nieminen, 1978; Koegel, Russo, & Rincover, 1977; Leblanc, Ricciardi, & Luiselli, 2005; McBride & Schwartz, 2003; Sarokoff & Sturmey, 2004).

Although it is clear that teachers and paraeducators can be trained to correctly implement basic DTT procedures, it is also critical to examine issues of generalization. Specifically, are educators and paraeducators able to correctly use DTT procedures to teach different students a wide range of skills and behaviors? A few studies have indicated that educators and paraeducators who learn basic DTT procedures can effectively implement DTT across tasks when working with the same child (Crockett et al., 2007; Koegel et al., 1978), as well as when working with different children (Koegel et al., 1977; McBride & Schwartz, 2003). However, it is important to note that the research on generalization of DTT skills is somewhat limited because the studies cited typically focused on a very small number of learning tasks and/or instructional trials. Given the student and curricular diversity present in many public school programs, it is necessary to more extensively examine generalization and demonstrate whether instructors trained in DTT can correctly use the procedures to teach