Evaluation of an eLearning tool for training behavioral therapists in academic knowledge of applied behavior analysis

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ABSTRACT

Applied Behavior Analytic (ABA) treatment for children with autism spectrum disorders (ASDs) has been demonstrated to produce significant treatment effects across multiple studies (Eikeseth, 2009; Eldevik et al., 2009). Despite the demonstrated effectiveness of ABA, there continues to be a lack of trained clinicians to provide the treatment. Traditional training approaches include lecture, group discussion, and role-playing formats. However, alternative training approaches may need to be developed to increase the efficiency of training and/or to disseminate training opportunities to remote regions. One such possibility is eLearning, wherein trainees interact with computer training programs, rather than, or in addition to, live human trainers. Despite the potential contributions of eLearning training approaches, no previous research of which we are aware has evaluated eLearning approaches to training behavioral therapists in ABA principles and procedures for the treatment of autism. In this study, we evaluated an eLearning tool that was developed for training newly hired behavioral therapists in academic knowledge of ABA treatment for children with autism. We compared outcomes for a group of trainees who received eLearning training to a group who received traditional didactic training. Knowledge of ABA principles and procedures increased substantially for both groups, with the traditional didactic group achieving scores slightly higher than the eLearning group. These preliminary results suggest that eLearning tools may be a useful strategy for extending training in ABA principles and procedures to settings in which limited or no contact with live professional trainers may be available.

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Applied Behavior Analytic (ABA) treatment for children with autism spectrum disorders (ASDs) has been demonstrated to produce significant treatment effects across multiple studies (Eikeseth, 2009; Eldevik et al., 2009). Despite the demonstrated effectiveness of ABA, there continues to be a lack of qualified clinicians to provide the treatment. A foundational prerequisite for the implementation of any procedure with high fidelity is good quality training of clinical staff. In a description of a research-based service model of ABA for children with ASD, Hayward, Gale, and Eikeseth (2009) list quality staff training as one of the essential components to an effective program.

Training of staff in the principles and procedures of ABA involves training in both academic knowledge of ABA and the establishment of proficiency in the actual implementation of the procedures. One component of ABA treatment for ASD is discrete trial training (DTT). Thomson, Martin, Arnal, Fazzio, and Yu (2009) recently reviewed instruction techniques for DTT. Training approaches that have been demonstrated to be effective in establishing proficiency in procedural implementation typically include written instruction, lecture, video modeling, role-playing and in vivo feedback. For example, Sarokoff and Sturmey (2004) used instruction, modeling, rehearsal, and feedback to train special education teachers to implement DTT. In addition, Lafasakis and Sturmey (2007) used a similar procedure for training parents of children with autism to implement DTT. More recently, Fazzio, Martin, Arnal, and Yu (2009) reported on the use of a self-instructional manual in conjunction with feedback and demonstration to train university students to implement DTT with children with ASD. Although these findings are related to the training of DTT techniques, they are likely applicable to the training of staff in the broader context of service delivery. For example, van Oorsouw, Embregts, Bosman, and Jahoda (2009) recently conducted a meta-analysis of research on staff training and evaluated the relative effectiveness of commonly used training components. They found that a combination of in service training and "coaching on the job" was required to teach skills related to changing actual client behavior. In other words, the combination of both didactic instructions along with in vivo feedback is the best approach for teaching client-related skills to staff.

In addition to training in the actual implementation of clinical procedures, training in ABA (and indeed virtually any other approach) includes training in academic or conceptual knowledge of the approach. Conceptual or academic training might be particularly relevant to training in ABA because virtually all of the procedures used are directly derived from and logically linked to basic principles of learning and motivation. That is, procedures in ABA are related to basic processes in a "conceptually systematic" manner (Baer, Wolf, & Risley, 1968, 1987). Therefore, when procedures work, clinicians are able to account for their success in terms of the basic processes that are at play. More importantly, however, is that a solid conceptual basis in behavioral principles and procedures aids the clinician in problem-solving when clinical procedures are not working. For example, if a child with ASD is not learning a particular skill that is being taught, an analysis of the problem may be made in terms of magnitude of reinforcement, delay to reinforcement, inadvertent sources of stimulus control, stimulus over-selectivity, etc. Training in academic knowledge of ABA principles and procedures should never be presented as superior to or a replacement for practical training, but it is generally considered a critically important component of the overall process of training ABA clinicians.

Despite the generally acknowledged importance of training in academic knowledge of ABA, relatively few studies have been published which examine the optimal ways in which such training may be done. Traditional approaches to training academic knowledge of ABA generally involve lecture and group discussion. Traditional approaches generally work well when an expert level trainer is available for in-person training. However, alternative training approaches may need to be developed to increase the efficiency of training and/or to disseminate training opportunities to remote regions. One such possibility is eLearning. During eLearning, trainees interact with computer programs, rather than (or in addition to) live human trainers. There are multiple potential advantages and disadvantages to eLearning instruction, relative to live in-person training. One potential disadvantage to eLearning instruction is that an instructor is not present to answer questions that trainees might have, whereas live lecture-based training may accommodate for that (assuming the trainer agrees to answer questions as he/she lectures). A potential advantage of eLearning approaches to training is that these approaches do not require an expert trainer to be physically present while staff are trained. Given the continual rise in the diagnosis of autism (Hertz-Picciotto & Delwiche, 2009) and the already-existing lack of qualified clinicians to treat them, innovations are needed that may facilitate the efficiency of training clinicians.