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Assessing competencies in applied behavior analysis for tutors working with children with autism in a school-based setting



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ABSTRACT

With an increase in large scale Applied Behavior Analysis (ABA) services for children with autism, the need to define and measure quality is essential. Staff competence is key and identifying and measuring this accurately is critical. ABA service providers typically measure competence by direct observation, video analysis, and written examination. However, apart from the York Measure of Quality of Intensive Behavioural Intervention (YMQI) there is an interesting lack of direct links between defining competencies and developing assessment tools. In this study we used three measures of competencies developed from the UK ABA Autism Education Competence Framework Level 1. Along with the YMQI we assessed their construct validity by comparing the performance of two groups of tutors working in a school for children with autism (“experienced” vs. “inexperienced”) and performance of the “inexperienced” group at baseline (T1) and following one year of competence based training (T2). Results revealed that the more experienced group in both the between group and longitudinal comparisons achieved higher scores supporting the construct validity of the measures. There were few associations between the different methods of assessing competence, suggesting that no measure should be used in isolation if competence is to be comprehensively assessed.

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1. Introduction

Behavioral interventions are increasingly acknowledged as an effective way of working with, and educating, individuals with autism. There is evidence for the effectiveness of early intensive behavioural interventions (EIBI) (Dawson et al., 2010; Eldevik et al., 2012), and of comprehensive ABA based intervention for older children in home (Eldevik et al., 2009) and school settings (Grindle et al., 2012). However, whilst many have benefitted from behavioral interventions, individual child outcomes vary (Howlin et al., 2009; Remington et al., 2007; Whiteford, Blacklock, & Perry, 2012) and this is the case within, as well as across studies. Perry and Freeman (1996) suggest that individual outcome is a result of child, family and intervention variables. For example, child age, IQ, adaptive scores and severity of autism (Perry et al., 2011) and intensity of supervision (Eikeseth, Hayward, Gale, Gitlesen, & Eldevik, 2009), have all been shown to be predictive of outcomes. Intervention variables include both quantity and quality. Much research has focused on the quantity of intervention, both in

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terms of intensity and duration (Lovaas, 1987; Luiselli et al., 2000; Sheinkopf & Siegel, 1998). Research into the quality of intervention is, however, less common. In other fields, for example substance abuse, there is considerable research into the link between quality, often defined as treatment fidelity, and outcomes (Gearing et al., 2011). With the growth in demand for ABA provision and the possibility that quality of provision may vary across services, it has become increasingly important to define exactly what quality means and how it should be evaluated.

What is good quality ABA? Perry, Cummings et al. (2008) suggest factors that contribute to the quality of intervention include the quality of teaching, programming, and of the provider organization. Research into the quality of teaching within the field of behavior analysis has tended to focus on the intensity of supervision (Eikeseth et al., 2009), methods of staff training (Weinkauff, Zeug, Anderson, & Rosales, 2011; Smith, Parker, Taubman, & Lovaas, 1992), and treatment fidelity (Klintwall et al., 2012; Neef, 1995). These foci are perhaps not surprising given the characteristics of service provision where typically much of the front end delivery of services comes from “Behavioral Technicians” (in the UK more often referred to as ABA “tutors” or “therapists”), as part of a tiered service delivery model in which a Behavior Analyst designs and supervises service provision (BACB, 2012). However, with a growth in large-scale delivery of ABA provision it may not be possible to ensure quality at the point of delivery just by focusing on these areas alone.

Growth in ABA service delivery is beginning to happen internationally. In Canada for example there has been an increase in EIBI as the publically funded intervention of choice for autism (Norris, Paré & Starky, 2006); ABA has been endorsed in the United States by a number of state and federal agencies, including the U.S. Surgeon General and the New York State Department of Health (www.autismspeaks.org); and the UK has seen the establishment of at least 14 ABA schools or classes (with ABA provisions) for children with autism (Griffith, Fletcher, & Hastings, 2012). One issue with larger scale service delivery is how to ensure staff competence so that quality and, therefore, the chance of good outcomes is maximised. Being able to identify and measure tutor competence accurately is a critical aspect of service delivery and is also important for future research.

Defining required staff competencies is a first step in the identification and measurement of staff competence. The Behavior Analyst Certification Board (BACB[®]) has, through its task lists, developed generic behavior analysis competencies for certification purposes at technician, graduate, post-graduate and doctoral level (BACB[®] 4th edition Task List, 2012; BACB[™] Registered Behavior Technician (RBT[™]) Task List, 2013). Many provider organizations have developed checklists of competencies for internal purposes such as the Carbone Clinic’s “Effective Teaching Procedures Evaluation Form” which includes six evaluation areas: Organisation, Instructional Delivery, Error Correction, Reinforcement, Behavior Management, and Data Collection, (Carbone, Zecchin, & O’Brien, 2014).

As far as we are aware, the UK ABA Autism Education Competence Framework Level 1¹ is the first nationally developed peer reviewed list of the competencies required at the point of delivery of ABA services, (i.e. for front-line staff) in autism education (Denne et al., 2011). 19 organisations and 81 individuals from the UK ABA community contributed to its development; 9 organisations and 34 individuals were involved in its evaluation; and the 5 universities in the UK with BACB[®] approved course sequences participated in its editing. The framework consists of four competence domains: ABA, Education, Professionalism, and Autism, with the ABA content closely mapped on to the BACB[®] 3rd edition Task List. The UK framework defines competencies in terms of knowledge (the things that a behavior technician/tutor needs to know) and demonstrable behavior (the observable skills they need to be able to show, operationally defined) specifically for those working in the front line delivery of services. This was thought necessary because at the time of its development the BACB had not yet established the RBT certification and there was nothing in place for what the framework identifies as “Level 1” practitioners; those responsible for the delivery of ABA services who had either not had the opportunity or had chosen not to pursue BCaBA or BCBA certification (levels 2 and 3). An excerpt from the competence framework is shown in Table 1. Having an agreed list of competencies and developing training against those competencies does not, however, necessarily lead to improved performance. As with any behavior change programme, service providers need to be able to evaluate and measure the effectiveness of competence based training and use these data to drive the decision making process. Fixen and Blase (1993) suggest that establishing an, “integrated system of discovery, training, consultation, evaluation and administrative support is key to effective programme dissemination” (p. 603).

Within the field of behavior analysis there is some literature on measuring and maintaining staff performance. Approaches to assessment include one-off, periodic or continuous assessment and all may involve one or more of the following: direct observation, video observation and written examination. An early study conducted by Koegel, Russo, and Rincover (1977) for example, using direct observation, provided empirical evidence of assessing staff competencies and the effectiveness of Discrete Trial Training (DTT) following staff training. The assessment measure involved at least one observer who recorded data on the teacher’s use of five aspects of behavioral intervention procedures during each session: using operational definitions (e.g. Discriminative Stimulus (S^Ds), prompts, shaping, consequences and discrete trials). The correct use of DTT increased following training, with a range of 90–100% accuracy.

Davies et al., 2002 used a combination of direct and video observation and written examination to measure staff competencies. They investigated the validity of measures for supervisors’ competencies in providing EIBI for children with autism by comparing the mean scores of 26 supervisors with 22 therapists on four measures: examination on instructional

¹ The UK ABA Autism Education Competence Framework Level 1, 2011 is available on-line at http://ambitiousaboutautismwv3gz6ax5.devcloud.acquia-sites.com/sites/default/file/UK_ABA_Autism_Education_Competence_Framework_11_2011.pdf.

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