Concerns About the Registered Behavior Technician™ in Relation to Effective Autism Intervention

Justin B. Leaf¹ · Ronald Leaf¹ · John McEachin¹ · Mitchell Taubman¹ ·
Tristram Smith² · Sandra L. Harris³ · B. J. Freeman⁴ · Toby Mountjoy⁵ ·
Tracee Parker⁶ · Todd Streff⁷ · Fred R. Volkmar⁸ · Andi Waks⁹

Published online: 27 September 2016
© Association for Behavior Analysis International 2016

Abstract In 2014, the Behavior Analyst Certification Board (BACB®) initiated a program for credentialing behavior technicians. The new credential, Registered Behavior Technician™ (RBT®), is for providers of behavioral intervention to a wide range of individuals with mental health needs and developmental delays, including individuals diagnosed with autism spectrum disorder (ASD). The RBT® would represent the entry-level position within the range of the BACB® credentials. Despite the increasing acceptance of this newest level of credential from the behavioral community, the authors of this paper have substantial concerns with the RBT® credential as it relates to the delivery of intervention to individ-

uals diagnosed with ASD. The purpose of this paper is to detail these concerns and propose remedies that would ensure that individuals diagnosed with ASD receive effective behavioral intervention.

Keywords Autism · Behavior analyst · Behavior analyst certification board · Certification · Registered behavior technician

Ensuring the effectiveness and social validity of applied behavior analysis (ABA) services is not a new concern; in fact,

✉ Justin B. Leaf
jblautpar@aol.com

Ronald Leaf
Rlautpar@aol.com

John McEachin
Jmautpar@aol.com

Mitchell Taubman
Mtautpar@aol.com

Tristram Smith
Tristram_Smith@URMC.Rochester.edu

Sandra L. Harris
sharris@scaletmail.rutgers.edu

B. J. Freeman
bjfreeman@aol.com

Toby Mountjoy
tobymautpar@aol.com

Tracee Parker
Tpautpar@aol.com

Todd Streff
toddstreff@gmail.com

Fred R. Volkmar
Fred.volkmar@yale.edu

Andi Waks
awautpar@aol.com

¹ Center for the Advancement of Behavior Analysis, 200 Marina Drive, Seal Beach, CA 90740, USA

² University of Rochester Medical Center, Rochester, NY, USA

³ Rutgers—The State University of New Jersey, New Brunswick, NJ, USA

⁴ UCLA School of Medicine, Los Angeles, CA, USA

⁵ Autism Partnership-Hong Kong, Hong Kong, China

⁶ Autism Partnership, Melbourne, Australia

⁷ Streff Behavior Consulting, Foristell, MO, USA

⁸ Child Study Center-Yale University School of Medicine, New Haven, CT, USA

⁹ Autism Partnership Foundation, Seal Beach, CA, USA

effectiveness and social validity are some of the most important dimensions of our field (Baer, Wolf, & Risley, 1968). In the late 1980s and early 1990s the right to effective treatment was a widely discussed topic within the field of ABA (e.g., Bannerman, Sheldon, Sherman, & Harchik, 1990; Van Houten, Axelrod, Bailey, Favell, Foxx, Iwata, & Lovaas, 1988). The importance of qualified individuals providing behavior analytic services led to the creation of the State of Florida's Behavior Analysis Certification Program (Johnston & Shook, 1993) and, in 1998, the Behavior Analyst Certification Board® (BACB®) was created as a nationwide certification for behavior analysts (Johnston & Shook, 1993; Weiss & Shook, 2010). The global mission of the BACB® is to “protect consumers of behavior analysis services worldwide by systematically establishing, promoting, and disseminating professional standards” (BACB, 2015b). Within this goal, the BACB® certification attempts to provide quality control, set standards of competency, set standards in training, and help protect consumers from individuals who are not qualified to provide behavior analytic services (Shook, Ala'i-Rosales, & Glenn, 2002; Weiss & Shook, 2010).

Developing the BACB® was not an easy task; it involved the creation of a task list that encompasses important behavior that behavior analysts should display (Shook, Hartsfield, & Hemingway, 1995), a description of what training should consist of and the number of required hours of training (Weiss & Shook, 2010), a comprehensive examination (Weiss & Shook, 2010), and a means for ensuring that university-based programs are providing the proper courses and curricular content (e.g., Bernstein & Dotson, 2010). In addition to the challenges faced in the creation and expansion of the BACB®, there were also concerns voiced about the behavior analyst certification process (Risley, 1975; Moore & Shook, 2001) and global concerns with credentialing in general (Kliener & Krueger, 2013). In 2001, Moore and Shook stated some possible negative side effects of certification, which could include an increase in expense of service, restriction of innovation, restricted interaction between certified and non-certified professionals, and potential legal battles. Recent data on credentialing in a variety of professional disciplines also confirms that certification may result in an increase in cost of services (Kliener & Krueger, 2013) and that behavior analysts may be receiving a significantly higher rate of reimbursement for services than other licensed professionals providing treatment (Romanczyk, Callahan, Turner, & Cavalari, 2014).

Additional concerns have been raised since the start of the BACB®, and some of these concerns are still voiced today. These concerns have included whether people or procedures should be certified (Risley, 1975), whether there should be sub-specialty certifications (Shook & Favell, 2008), whether certified individuals are competent (see Budd, Stokes, & Bartels, 2007; Lovaas, 2002), whether the certification will result in better treatment (Leaf, McEachin, & Taubman,

2008), and whether the motivation for professionals will become monetary (see Budd et al., 2007; Lovaas, 2002). Don Baer may have voiced the strongest alarm when he compared the debate over certification of behavior analysts to third world countries where poorly trained first aid workers were used because of the paucity of physicians; he then went on to add that “From the point of view of sophisticated ABA, [substandard behavioral intervention] probably looks like butchery” (see Budd et al., 2007; Baer, 2002). It should be recognized that the BACB® has continued to evolve, making the standards to achieve certification more difficult (Weiss & Shook, 2010). Despite the aforementioned concerns, the BACB® certification has continued to expand; there are now over 17,000 Board Certified Assistant Behavior Analysts® (BCaBAs®) or Board Certified Behavior Analysts® (BCBAs®) (BACB, 2015b, Carr, Howard, & Martin, 2015), with the majority being in the field of autism spectrum disorder (ASD) (Green, 2010).

The growth of the BACB® parallels historically the expansion of services to children with ASD. The pioneering work of Lovaas and his colleagues at UCLA (Lovaas, Koegel, Simmons, & Long, 1973; Lovaas, 1987; McEachin, Smith, & Lovaas, 1993) provided the first empirical evidence that a comprehensive ABA treatment program could lead to life altering behavior patterns for individuals diagnosed with ASD. Replication studies repeatedly demonstrated that comprehensive treatment can change the lives of individuals diagnosed with ASD (Harris, Handleman, Gordon, Kristoff, & Fuentes, 1991), sparking interest in making effective intervention more widely available.

Information regarding the effectiveness of ABA remained largely uncirculated among the general public until Catherine Maurice's compelling account of the success of ABA treatment with her two children (*Let Me Hear Your Voice*) was published in Maurice (1994). Maurice's book brought parents' attention to the availability of a technology for behavior change that had been demonstrated to be far more promising than any other treatment intervention; over time, more and more parents clamored for this type of help with their children. As a result, more individuals diagnosed with ASD started receiving comprehensive ABA programs across multiple settings (home, school, community, clinic, and university), which were primarily implemented and supervised by behavior analysts.

There were many positives to more individuals being served, such as meaningful gains being made in community settings (e.g., Leaf, Taubman, McEachin, Leaf, & Tsuji, 2011), the state and federal government potentially saving millions of dollars (Chasson, Harris, & Neely, 2007; Jacobson, Mulick, & Green, 1998), and an increase in the number of professionals in the field of ABA (Carr et al., 2015). Unfortunately, along with the positive benefits of the

expansion of ABA treatment to individuals diagnosed with ASD, there were also some negative consequences (many of which the BACB® attempted to address). For one, it became difficult to keep up with the demand for professionals, leading to a shortage of trained professionals able to implement quality ABA programs worldwide (Hughes & Shook, 2007; McGee & Morrier, 2005). This may have resulted in “pseudoexperts” implementing and supervising ABA-based programs (Dawson, 2001; Hughes & Shook 2007) as well as the commercialization of ABA (Keenan, Dillenburger, Moderato, & Rottgers, 2010; Lovaas, 2002), which gave rise to notoriety and misconception about the field of ABA as it applies to individuals diagnosed with ASD (Gernsbacher, 2003, 2006; Morris, 2009). Ultimately, individuals diagnosed with ASD may have been the most vulnerable to these negative consequences, and the advent of the BACB® may have provided reassurance (even if only partially warranted) to many who wanted to improve the lives of individuals diagnosed with ASD.

It is not clear if the creation of the BACB® addressed the aforementioned concerns. Additional data are needed to determine the extent to which the BACB® certification as a whole has succeeded in producing qualified providers and improving services available to consumers (e.g., Dixon, Reed, Smith, Belisle, & Jackson, 2015). However, it has become clear that certification has potential pitfalls and requires careful, ongoing evaluation. With this historical background, there are several concerns about the newest credential of the BACB®, the Registered Behavior Technician™ (RBT®). In 2013, to address the continuing shortage of frontline staff and to provide a means to gain third party payment (i.e., payment from insurance companies), the BACB® created the RBT®, which is defined as a paraprofessional who provides direct implementation of behavioral procedures for skill acquisition and aberrant behavior reduction that have been developed by a supervisor, and receives weekly supervision by a BCBA®, BCaBA®, or Florida Certified Behavior Analyst™ (FL-CBA™) (BACB, 2015a). The RBT® does not design intervention plans but rather performs tasks designated by the supervisor (retrieved from www.bacb.com). For individuals to become a RBT®, they have to meet the following six criteria: (a) be at least 18 years old, (b) have a high school diploma or national equivalent, (c) pass a criminal background check, (d) complete a 40-h training program based upon the RBT® checklist, (e) be deemed by their trainer as having met the RBT® competency checklist, and (f) pay all fees. In addition to these criteria, as of December 2015, new applicants will be required to pass a written exam.

The announcement of the qualifications and standards of the RBT® made clear that it was intended to meet the need for establishing professional standards, ensure the quality of intervention for individuals diagnosed with ASD, and provide protection to consumers. While the paucity of qualified

interventionists creates an urgent need, it is equally important to adopt sufficiently stringent standards for the amount of training and supervision received by interventionists who will be working directly with individuals diagnosed with ASD. The goal in writing this paper is to provide behavior analysts with a list of concerns about the standards for the RBT® and, most importantly, possible resolutions to these concerns. We hope, this will stimulate reflection, inspire others to contribute to solutions, and help preserve the quality of service and integrity of the field of ABA as well as positively impact the lives of individuals diagnosed with ASD around the world.

Concerns

Training

Concerns For individuals diagnosed with ASD to make the most meaningful progress, they must have ABA based intervention that is intensive (Lovaas, 1987), has a comprehensive focus on skill development and reduction of behavioral excesses (e.g., Leaf et al., 2011), is provided by staff that are properly trained (Ala'i-Rosales, Thorisdottir, & Etzel, 2003), and includes procedures that are implemented with a high degree of fidelity and quality (Bibby, Eikeseth, Martin, Mudford, & Reeves, 2001; Green, 1996). Extensive training is required for a professional to implement procedures with a high degree of fidelity and quality. The training hours requirement for the RBT® does not appear to be extensive nor does it appear to be consistent with the current body of research.

Training for a RBT® requires the following: (a) 40 h of training, (b) at least 3 of the 40 h devoted to ethical training, (c) training can be conducted in person or online, (d) training can be didactic or experiential, (e) training is to be completed within 90 days, and (f) training can be conducted by a BCBA® or BCaBA®. While there are some preliminary findings that 40 h of training can lead to basic demonstration of procedures (e.g., Fisher, Luczynski, Hood, Lesser, Machado, & Piazza, 2014), several studies exploring staff call into question whether 40 h of training is sufficient in most cases.

For example, the research on staff training for comprehensive behavioral models specifies a much higher level of staff training. In the 1987 Lovaas study, therapists were undergraduate students at UCLA who had passed a course in behavior modification and had 3 months of supervision prior to working independently with a child (McEachin et al., 1993). Leaf and colleagues (2011) described a program evaluation of a community-based ABA center; the amount of training hours for direct line therapists was far greater than the 40 currently required by the BACB® to obtain a RBT® credential (Leaf et al., 2011; Leaf, 2015). Finally, Au et al. (2015) reported a required 280 h of training before entry-level therapists were

permitted to work independently with children. Although these studies/evaluations may be high-end examples of the hours of training and supervision provided prior to a therapist working independently with a child, the results from all four reports showed substantial progress for the clients/participants. Based upon staff training in comprehensive models of ABA intervention associated with desired results, the RBT® guideline of 40 h of training appears to be generally less than typical.

The guidelines also appear to be inconsistent with the majority of staff training research in the implementation of targeted components of comprehensive intervention. For example, Whang, Fletcher, and Fawcett (1982) evaluated a behavioral skills training package to teach high school graduates who had 4 years of experience how to engage in basic counseling (e.g., explain confidentiality, request other information, offer future help) and problem solving behaviors (e.g., ask open-ended questions and help select best alternatives for clients). The results showed that 42 h of training was required for the participants to learn these two skills alone. Subsequent researchers investigated ways to use behavioral skills training to make training more efficient. Wallace, Doney, Mintz-Resuder, and Tarbox (2004) showed that a total of 3 h was required for teachers and a school psychologist to learn how to implement the basics of a functional analysis. Seiverling, Pantelides, Ruiz, and Sturmey (2010) reported that 2 h of training was necessary for older staff (34 and 42 years old), with previous experience, to learn a simple chaining procedure using a natural language paradigm. Downs, Downs, and Rau (2008) demonstrated that 8 h of training was required for undergraduates who had previous experience working with individuals diagnosed with ASD to implement the basic components of discrete trial teaching. Huskens, Reijers, and Didden (2012) showed that staff members in their twenties with an average of 2 years of previous experience required 16 h to demonstrate improvements in specific behaviors such as increasing motivation, prompting, and contingent reinforcement. Few of these studies have examined the extent to which trainees can use these skills to promote skill acquisition in their everyday interactions with learners. Given the number of skills an interventionist would need to implement effectively (37 in the case of the RBT®), based upon the research, 40 h of initial training is likely inadequate for staff with limited to no previous experience.

Additionally, in comprehensive outcome studies that showed that individuals can make life changing improvements with the implementation of ABA, the therapists were either university students or recent graduates of universities (Leaf et al., 2011; Lovaas, 1987; McEachin et al., 1993; Sallows & Graupner, 2005). A great majority of staff training studies have involved participants either who had previous experience (e.g., Smith, Parker, Taubman, & Lovaas, 1992; Whang et al., 1982) or who had more education than a high

school diploma (e.g., Wallace et al., 2004; Weinkauff, Zeug, Anderson, & Ala'i-Rosales, 2011). Therefore, previous literature on staff training brings into question whether an 18-year-old with just a high school diploma or equivalent has enough of an educational background and level of maturity to understand the basics of child development, principles of applied behavior analysis, the human service field, ethics, and characteristics of individuals diagnosed with ASD from a single week of training. The complexities of ASD and the type of intervention required in an early intensive behavioral intervention (EIBI) program require a far higher level of maturity, life experience, and specialized knowledge than is required for basic childcare. Moreover, as discussed in the “Task List” section below, interventionists are not simply automatons and need to be able to make decisions in the moment in the absence of a supervisor, which requires a much more advanced level of training.

In addition to the previously mentioned concerns, 40 h of training is low when compared to other health service professions. For example, to become certified as a licensed practical nurse (LPN), one must have well over 40 h of supervision before becoming certified (most programs require at least 100 volunteer hours before even enrolling in a program followed by a year of training). An entry-level psychiatric technician (e.g., basic nursing, treatment plan implementation) requires 480 h of college training; a clinical child life specialist, basic level, requires 480 h of supervision. All of these professions, presumably, have fewer responsibilities than a RBT® but require more upfront training. For example, an LPN's major responsibility is changing bandages and caring for patients, under the supervision of a Registered Nurse (RN) or physician. In the medical world, an LPN would be analogous to a RBT® in terms of responsibility and position on the care hierarchy; however, the training required to become an LPN is substantially more rigorous. In addition, one could argue that the procedures implemented by LPNs (e.g., medication administration, taking vital signs, basic wound care, injections) are generally less numerous and less complex than the procedures a RBT® is expected to implement.

Finally, when initially introduced, the BCaBA® was an entry-level position for professionals who did not have the qualifications to provide supervision. Now there has been a clear switch, with BCaBAs® now being able to provide supervision to RBTs®. It is unclear what the justification was for this change; there is no evidence, empirical, or otherwise that there have been changes in the field or the certification process by which a BCaBA® is now capable of providing adequate supervision.

Solutions Additional research is needed to evaluate the number of training hours required for new technicians to provide quality intervention. Future researchers could start by evaluating whether 40 h of training is sufficient for staff to

implement intervention to the degree of proficiency necessary for client success (i.e., not just be familiar with the procedures or implementing them mechanically). Furthermore, it should be empirically determined what amount of training is necessary to provide effective intervention at a reasonable level of quality. Finally, researchers should evaluate whether lesser educational experience (e.g., high school diploma versus at least 2 years of undergraduate course work) significantly impacts the amount of training necessary to implement ABA-based procedures. One of the guiding principles of ABA is that our decisions are analytically based (Baer et al., 1968); this should be true in the creation of the interventions we implement and our governing policies. Thus, the data on these questions should guide our decisions when creating policy. The data collected from studies evaluating the necessary number of hours of training to provide quality intervention should be a primary determinant of the required number of hours to obtain certification. If the data indicate that a person with a high school diploma cannot provide the same quality of treatment as a technician with a higher degree of education, then the age requirement/educational requirement should be increased. Finally, the BACB® should provide a stronger justification of why BCaBAs® are now qualified to provide supervision. If there is no empirical or other evidence to support this change, then the requirement should be strengthened so that either a BCBA® is required to provide supervision for the RBT® or BCaBAs® are required to meet the same supervision standards BCBA® meet (e.g., supervision training modules and CEUs).

Task List

Concern A second concern is with the content of what a RBT® is required to learn as part of his or her training, and the assessment of whether a technician has met the identified content area goals. The BACB® has created a task list consisting of six broad domains (i.e., measurement, assessment, skill acquisition, behavior reduction, documentation and reporting, and professional conduct and scope of practice); within each domain, there are sub-behaviors that a RBT® should be able to perform (BACB, 2015a). As with the creation of the BCBA® and BCaBA® task lists, the process was carefully designed (Shook et al., 1995). Even with the meticulous preparation of the task list, the BACB® has acknowledged that this task list may not be complete and that it is the responsibility of the supervisor to teach any additional skills to the RBT®. However, leaving the decision of whether a technician has been trained in a sufficient number of content areas to the judgment of an individual BCBA® is contrary to the goal of an objective and standardized model of certification.

Although the RBT® task list provides the start to a comprehensive list of behaviors significant to implementing effective

ABA therapies, there are several important behaviors that may be necessary in the implementation of ABA intervention that are not on the current task list. For example, the task list does not require demonstration of data interpretation (e.g., determining if a client has reached mastery criterion), shaping procedures, behavioral skills training or similar procedures, or leading/supporting group instruction. Also, the task list does not include a basic understanding of curriculum or specific knowledge about the population with whom they are working (e.g., autism, developmental disabilities, or typically developing children). This may be important, as an interventionist needs to understand the purpose and progression of programming (Eikeseth, 2010) and how the characteristics of ASD (or whichever population the RBT® is serving) may affect learning (Smith & Wynn, 2002). It could be the case that a RBT® would have to problem solve in regard to programming within a session to establish the conditions under which a student demonstrates a skill; without basic knowledge of programming, this may be difficult to accomplish. Effective treatment requires continual evaluation of a number of factors such as the client's current motivation, the function of his/her behavior, his/her emotional state, and his/her level of responsiveness (Green, 2010; Eikeseth, 2010; Leaf, 2015; Lovaas, 2002). Based upon this analysis, an interventionist must be able to alter the curriculum as well as the teaching or behavior strategy in the moment, when a supervisor may not be present.

Another key area of behavior that is not on the list is critical thinking and skepticism (Green, 2010), which would allow a therapist to make in-the-moment decisions about changing a procedure or strategy to ensure higher levels of success. The task list does not include or require the RBT® to demonstrate proficiency in identifying alternative treatments (e.g., DIR/Floortime, Social Thinking, or Weighted Vests) that are currently implemented in many clinical settings where the RBT's® employer may expect the RBT® to implement some of these non-evidence-based procedures with individuals diagnosed with ASD. Given that the RBTs® will most likely be spending the majority of hours with a client, it would be important for them to have a basic understanding of various procedures so that they do not implement non-evidence-based procedures and can inform supervisors when they are being implemented.

Additionally, behaviors outlined in the task list are not thoroughly operationally defined nor are competency criteria explicitly provided. For example, one of the behaviors that a RBT® should demonstrate is the implementation of prompting and prompt fading procedures. It has been suggested within the literature that prompting may be the most sophisticated, complicated, and pivotal of all components involved in discrete trial teaching (e.g., Smith, 2001); however, the nuanced complexity and critical nature of prompting is not reflected in the brief prompting item contained within the RBT® task list or in specifically defined competency criteria.

Is it sufficient to be able to demonstrate time delay prompting on a discrimination task? Should a technician also be proficient in the use of most-to-least and least-to-most prompting, no-no prompt, and error correcting strategies? How is one to ensure uniformity in the minimum competency for the many different types of prompting procedures that should be expected of a RBT®? Operationally defining behaviors of both students and instructors is an important characteristic of ABA as it leads to more accurate scoring of behavior (Cooper, Heron, & Heward, 2007). However, the current task list provides no operational definition that would allow two or more independent evaluators to reliably score whether a therapist is displaying a behavior competently. Although it may be the responsibility of the supervisor to ensure that the RBT® can demonstrate a variety of procedures, without thorough operational definitions and competency criteria, it would be impossible to ensure that an interventionist is implementing the targeted skills to a reasonable degree of fidelity across multiple supervisors.

Solution There are many potentially simple and practical ways to make the task list more complete. First, each item on the task list should include an operational definition and basic areas of competency that a therapist should display. Providing this definition and basic competency criteria could help ensure that RBTs® are meeting the minimal standard. Second, the BACB® could greatly expand the task list to include additional skills (e.g., data analysis, teaching in a group instructional format, shaping, critical thinking, working with families, issues related to intervention in ASD). This would help ensure that RBTs® are more competent interventionists. Third, there should be empirical studies conducted to identify whether mastery of skills on the task list results in better intervention outcomes. Finally, given the numerous procedures utilized within ABA intervention, perhaps it may be more beneficial to certify individuals on their effectiveness in implementing specific procedures (Risley, 1975), rather than providing a global certification.

Assessment

Concerns Previous researchers have shown that trainings in an analog setting can result in limited generalization in the natural environment (e.g., Smith et al., 1992). The field of ABA has always been concerned with “what subjects can be brought to do rather than what they can be brought to say” (Baer et al., 1968, p. 93). However, the RBT® credentialing process appears to be more concerned with what a RBT® can say (e.g., a verbal behavior repertoire; Greer, 1992) than what behaviors the RBT can actually exhibit (e.g., a contingency shaped repertoire; Greer, 1992). This is because the RBT® qualification heavily relies on interviews or answering multiple choice questions as opposed to actual evaluation of

competency in performing desired behaviors to established, defined criteria (BACB, 2015a). The current assessment for a RBT® consists of interview competency (e.g., asking them what materials they need) and simulated performance, which can occur via role playing or responding to video-recorded samples of learner behavior.

Although the entire assessment cannot consist of purely role play, the fact that a substantial part of the assessment can be based on role play is problematic. Since it is possible for the RBT® to display the majority of the skills within role-play scenarios, it would be difficult to determine if these skills would generalize to actual therapy sessions. The use of role play also requires a great deal of subjective judgment by the assessor, which can lead to inadvertent or, in the worst case scenario, purposeful manipulation by the evaluator to change the circumstances of the role play; this would artificially increase the likelihood of the RBT® candidate demonstrating the procedures correctly during the role-play scenario.

Second, the possibility of some of the assessment occurring through videotape recordings also generates concerns. For example, the RBT® candidate could select only their best samples to provide to the assessor and may artificially inflate judged performance. Third, without specific operational definitions or explicit mastery criteria (as discussed above) for the behaviors on the task list, it would be nearly impossible to ensure that RBTs® have been successfully trained and have achieved any level of functional competency whether in role play, videos, or actual intervention sessions. Fourth, there is no external verification of competency and no assurance that the level of performance that is approved by one trainer corresponds to the standards of other trainer/certifiers or that the therapist’s performance meets the expectation of the BACB® when the criteria were laid out.

Fifth, a RBT® only has to master one of the skills within a specific grouping (e.g., mastering discrete trial teaching but not mastering naturalistic teaching procedures). One could argue that it is important for a RBT® to be able to implement both discrete trial teaching and naturalistic teaching procedures to provide quality intervention. In this case, it should be a minimum requirement that a technician be competent in all essential procedures to gain registration. Finally, if the person conducting the assessment is also the employer of the potential RBT® (this is allowed under the rules), there could be an incentive for the assessor to pass the RBT®, since having more RBTs® can lead to more clients and potentially lead to greater financial reward. These potential conflicts of interest and potential dual relationships (both of which are against the BACB® code of ethics), under the current guidelines, are particularly concerning.

Solutions One possible solution would be for the assessment to move away from the use of procedures that do not directly

measure the behavior of interest. Requiring a therapist to state what materials they need for a session is far different from independently gathering those materials prior to beginning session. Having a therapist demonstrate the ability to provide a technical definition of shaping is far different from being able to implement shaping procedures. Behavior analysts have to be concerned with observable behavior rather than what the subject says he or she can do (Baer et al., 1968). There could be a say-do correspondence failure (Luciano, Herruzo, & Barnes-Holmes, 2001) with the therapist. Second, assessments should be conducted solely on performance with actual clients; assessments should not be conducted via role-play scenarios or videotaped segments. Third, any individual who has a vested interest (financial or personal) should not evaluate the potential RBT® nor determine whether the RBT® attains registration. Rather, there should be independent evaluation of the RBT® to ensure that no dual relationships are occurring.

Finally, the BACB® might consider having potential RBTs® submit videotapes of themselves implementing therapy to be reviewed by experts, in addition to the other evaluations/assessments being conducted (e.g., live assessment). In this scenario the potential therapist would have to submit a videotape to the BACB® and expert judges would rate whether they are displaying the therapist behaviors to a high and acceptable degree of fidelity. This would be similar to Autism Diagnostic Observation Schedule (ADOS) certification or the evaluation conducted by Pivotal Response Training (Koegel Autism Consultants, 2015). This may cost more money for the potential RBT® but will help ensure a higher quality of therapist.

Unintended Consequences

Concerns Today, the BACB® certifications have become the gold standard and, increasingly, a *de facto* requirement for providing behavioral intervention to individuals diagnosed with ASD (Green, 2010). Insurance companies are requiring that services be implemented and supervised by certified behavior analysts (Autism Speaks, 2015) and interventionists; school districts are hiring in-house BCBA®s; and states (e.g., MO, IL, MA) are requiring behavior analysts and interventionists to be state licensed in order to receive funding and are accepting the BACB® credential as evidence of eligibility for licensure. As the BACB® certification has become ingrained in the world of ABA intervention for persons with ASD, there have been many unintended negative consequences, many of which could also apply to the creation of the RBT®.

First, there has been no evaluation determining what effect the RBT® credential may have on the cost of intervention. When professional fields go the route of certification and/or licensure, there is always a potential for increasing cost for the client or funding agency (e.g., Kliener & Krueger, 2013).

Therefore, a potentially unintended consequence of the RBT® may be that the cost of intervention rises, even though it has not yet been demonstrated that better outcomes are obtained when using certified personnel. Alternatively, as the RBT® credential potentially represents a paraprofessional position requiring only a high school degree, it would be hard to justify reimbursement rates for RBT® services that are comparable to positions that require at least a bachelor's degree. In a cost-conscious environment, there will be intense pressure to utilize the least expensive personnel; an unfortunate consequence will be that companies that choose to adhere to a higher standard of training will likely not be able to survive.

A second potential unintended consequence is that non-certified but qualified individuals could be isolated from those who are certified (Moore & Shook, 2001). If funding sources begin limiting coverage to RBTs®, BCaBA®, and BCBA®, it may be difficult for some individuals to get services from professionals who are highly trained but do not have these certifications/credentials. This can be especially difficult in more rural areas where there is a shortage of professionals to provide the needed services or internationally where there are limited behavior analytic services (Hughes & Shook, 2007). Prior to the advent of certification, critical consumers often vetted an autism professional before they made the decision to use the behavior analyst's services. Professionals had to work hard to distinguish themselves in a number of ways that went beyond simply saying, "I'm certified." In a world where certification has become the *de facto* standard, there is considerable risk that consumers will pay more attention to the mere fact of being credentialed rather than critically evaluating evidence of outcomes, extent and nature of training and experience with a specific population, and the quality of work product. This is especially dangerous given that the credentialing process focuses more on a generalist approach, and the credentialing body has not acknowledged the need for differentiating areas of specialization, such as ASD and early intervention. The absence of a specialty credential may be taken by consumers as an indication that a generalist credential is all that is necessary to be qualified to provide EIBI services.

Third, when the BACB® created the BCBA® and BCaBA® certification, it was to represent minimal competency for a behavior analyst (e.g., Shook et al., 2002; BACB, 2015b). With the inclusion of the RBT®, there is less emphasis on course work and hours of training. If the BCBA® and BCaBA® were developed to represent a minimal competence, what does the RBT® represent?

Fourth, the BACB® was created to ensure that clients had the right to effective treatment (Van Houten et al., 1988; Weiss & Shook, 2010). In turn, individuals would receive high-quality intervention and would be able to make meaningful progress (Leaf et al., 2011). As stated previously, there has been no empirical investigation of the specific components

of the RBT® credential. There has been no empirical evidence that procedures are being implemented with a higher degree of fidelity or that consumers are better protected because of the certification process. There has been no empirical evidence showing that outcomes for individuals diagnosed with ASD will improve with the creation of the RBT® credential. Thus, at the present time, it remains unclear if the RBT® will result in improving the lives of individuals diagnosed with ASD. Furthermore, the possibility that unintended consequences may even cause harm to those whom the creation of RBT® was intended to help must not be overlooked.

Solutions First, a long-term analysis is required to identify whether the cost of intervention increases or decreases due to the certification process. If the cost rises in a way that limits services to individuals with ASD or excludes some individuals from receiving services, then a task force may be necessary to determine how to lower costs. Second, there needs to be public acknowledgments made by agencies associated with ABA and ASD that the RBT® credential (or any certification) does not guarantee a high level of competency. Public statements should emphasize that certified does not necessarily equal qualified; instead, parents, school districts, and insurance agencies need to look at the experience of an individual, similar to the Autism Special Interest Group Guidelines (Autism Special Interest Group, Association for Behavior Analysis, 2015). Fourth, long-term outcome studies using randomized controlled trials should be conducted, evaluating if utilization of RBTs® leads to more successful outcomes for individuals diagnosed with ASD.

Conclusion

The BACB® should be commended for the thought and diligent effort put into the development of the RBT® credential. The process took over 2 years and involved 14 representative subject matter experts (SMEs) and over 12,000 professionals who were surveyed. This process adhered closely to standards employed by many other fields for credentialing their respective professions; however, it may not have been enough to move forward with the RBT® credential. Professionals in the discipline of ABA have never been satisfied with merely following the established training and assessment practices of other fields. Behavior analytic standards have always been more objective, exacting, and precise (Baer et al., 1968). It is because of our adherence to higher standards that our results have consistently been more sweeping, extensive, and profound.

Besides the concerns and considerations listed above, the amount of time spent developing the credential is neither a good indicator of completeness nor of quality; the development process should not be considered complete until all

substantial concerns are addressed adequately and resolved sufficiently. Secondly, while there is no question that the 14 SMEs who guided the creation of the RBT® credential were indeed experts, it is unclear how objective and unbiased was the procedure for selecting the members of this panel. An objective and unbiased sample would include not only members of the BACB® but also esteemed members of the field who may not be associated with the BACB®. Third, although over 12,000 professionals were surveyed, it may be the case that many of these individuals have a vested interest (e.g., financial interest in an established credential for direct line staff) and may not have fully understood the possible unintended consequences (stated above) of the RBT® credential. Fourth, although additional data on the effects that the BCBA® credential has had on improving treatment for individuals diagnosed with ASD is needed, it would appear that the RBT® has potentially greater risks than benefits. Finally, it is difficult to identify the RBT® as being conceptually systematic with our science on staff training and evaluation of performance.

Careful, practical, and research-based processes are required in the examination and exploration of the RBT® credential before it becomes so ingrained in the service world that real and potentially important changes cannot be implemented. First, the RBT® credential should undergo a probationary (beta testing) period to determine what effects the credential has on the field of ASD. Second, the development of a larger task force should be convened to address the concerns listed above, in order to improve upon the current RBT® credential. This task force should identify whether changes should and can be made, for example, in terms of the amount of training required for the credential, who is responsible for supervision (i.e., BCBA® or BCaBA®), improving the assessment of the RBT® and ensuring that the assessors have no vested interest in a RBT® passing the assessment. The task force should consist of people who are BCBA® certified, professionals who are not BCBA® certified but provide behavior analytic services (e.g., licensed clinical psychologists), other professionals in the field of autism (e.g., diagnosticians, medical doctors, speech and language pathologists), special education teachers, school administrators, representatives from funding sources, experts in public policy, and parents of individuals diagnosed with ASD. Third, there needs to be independent investigations from different sites conducting collaborative research examining proposed training, assessment, and credentialing practices. Fourth, independent evaluators, with no vested interest in the field of ABA or ASD, should examine the trends in the cost of care following the RBT® credential. Fifth, once credentialing practices are established, it may be fruitful to develop a process that involves randomly occurring service assessments (i.e., spot checks) by independent governing board evaluators to ensure that RBTs®, BCBA®, and BCaBAs® are providing quality intervention.

Finally, since the BACB® has identified the RBT® as an entry-level position, they should be diligent and persistent in communicating this point to funding agencies so that RBTs® are not considered more qualified than what they are actually trained to do. Specifically, the BACB® needs to state (a) that they might not be knowledgeable of all ABA-based procedures, (b) that the RBT® designation does not ensure that a person has received any training in ASD, and (c) that a RBT® should never implement ABA-based programs independently without ongoing supervision.

The authors of this paper have been in the field of ASD and ABA ranging from 15 to over 50 years. All have witnessed the tremendous benefits that high-quality behavior analytic intervention can have for individuals with ASD. The authors know unequivocally that individuals on the autism spectrum require effective behavioral intervention; unfortunately, too often, consumers are not receiving quality intervention, even by those who are certified. Concerns about the qualifications of professionals in the field of ABA and ASD have been voiced for many years (e.g., Lovaas, 2002; Leaf et al., 2011). The advent of the RBT® credential amplifies and extends these concerns and increases the urgency of renewed discussion, debate, and reconsideration. The concerns may only be shared by a minority of ABA professionals, but nevertheless, “it has to be said.”

Compliance with Ethical Standards

Human and Animal Rights and Informed Consent This article does not contain any studies with human participants or animals performed by any of the authors.

Funding No grant funding was received in writing this paper.

Conflict of Interest The authors declare that they have no conflict of interest.

References

- Ala'i-Rosales, S., Thorisdottir, S., & Etzel, B. C. (2003). Behavioral teacher training programs. In K. S. Budd & T. Stokes (Eds.), *A small matter of proof: the legacy of Donald M. Baer* (pp. 151–165). Reno, NV: Context Press.
- Au, A. H. C., Mountjoy, T. J., Man, K. L. P., Leaf, J. B., Leaf, R. B., Taubman, M., & McEachin, J. (2015). A programmatic description of an international private behaviorally orientated autism school. *Education and Treatment of Children*, 38, 121–144.
- Autism Speaks. (2015). State initiatives. Retrieved from <https://www.autismspeaks.org/state-initiatives>.
- Autism Special Interest Group, Association for Behavior Analysis. (2015). *Consumer guidelines. For identifying, selecting, and evaluating behavior analysts working with individuals with autism spectrum disorders*. Retrieved from <http://www.apbahome.net/downloads/AutGuidelines.pdf>.
- BACB. (2015a). The registered behavior technician. Retrieved from <http://bacb.com/rbt/>.
- BACB. (2015b). About the BACB. Retrieved from <http://bacb.com/about-the-bacb/>.
- Baer, D. M. (2002). *Celebration of Donald M. Baer*, Paper presented at the Celebration of Donald M. Baer, Lawrence, Kansas.
- Baer, D. M., Wolf, M. M., & Risley, T. R. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis*, 1, 91–97.
- Bannerman, D. J., Sheldon, J. B., Sherman, J. A., & Harchik, A. E. (1990). Balancing the right to habilitation with the right to personal liberties: the rights of people with developmental disabilities to eat too many doughnuts and take a nap. *Journal of Applied Behavior Analysis*, 23, 79–89.
- Bernstein, D., & Dotson, W. (2010). Promoting teaching excellence in professional education of behavior analysts. *European Journal of Behavior Analysis*, 11, 277–288.
- Bibby, P., Eikeseth, S., Martin, N. T., Mudford, O. C., & Reeves, D. (2001). Progress and outcomes for children with autism receiving parent-managed intensive interventions. *Research in Developmental Disabilities*, 22, 425–447.
- Budd, K. S., Stokes, T., & Bartels, B. (2007). *Celebration of Donald M. Baer* [DVD]. DePaul University. Chicago, IL.
- Carr, J. E., Howard, J. S., & Martin, N. T. (2015, May). An updated on the behavior analyst certification board. *Panel discussion presented at the Association for Behavior Analysis International 41st Annual Convention*. San Antonio, Texas.
- Chasson, G. S., Harris, G. E., & Neely, W. J. (2007). Cost comparison of early intensive behavioral intervention and special education for children with autism. *Journal of Child and Family Studies*, 16, 401–413.
- Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied behavior analysis* (2nd ed.). Upper Saddle River, NJ: Pearson Education, Inc..
- Dawson, P. F. (2001). The search for effective autism treatment: options or insanity? In C. Maurice, G. Green, & R. M. Foxx (Eds.), *Making a difference behavioral intervention for autism*. Pro-Ed: Austin, Texas.
- Dixon, M. R., Reed, D. D., Smith, T., Belisle, J., & Jackson, R. E. (2015). Research rankings of behavior analytic graduate training programs and their faculty. *Behavior Analysis in Practice*, 8, 7–15.
- Downs, A., Downs, R. C., & Rau, K. (2008). Effects of training and feedback on discrete trial teaching skills and student performance. *Research in Developmental Disabilities*, 29, 235–246.
- Eikeseth, S. (2010). Examination of qualifications required of an EIBI professional. *European Journal of Behavior Analysis*, 11, 239–246.
- Fisher, W. W., Luczynski, K. C., Hood, S. A., Lesser, A. D., Machado, M. A., & Piazza, C. C. (2014). Preliminary findings of a randomized clinical trial of a virtual training program for applied behavior analysis technicians. *Research in Autism Spectrum Disorders*, 8, 1044–1054.
- Gernsbacher, M. A. (2003). Is one style of early behavioral intervention “scientifically proven”? *Journal of Developmental and Learning Disorders*, 7, 19–25.
- Gernsbacher, M. A., (2006). *The science of autism: beyond the myths and misconceptions*. Paper presented at the meeting of the national autism committee, Nashua, NH.
- Green, G. (1996). Early behavioral intervention for autism: what does research tell us? In C. Maurice, G. Green, & S. C. Luce (Eds.), *Behavioral intervention for young children with autism: a manual for parents and professionals*. Pro-Ed: Austin, Texas.
- Green, G. (2010). Training practitioners to evaluate evidence about interventions. *European Journal of Behavior Analysis*, 11, 223–228.
- Greer, R. D. (1992). The teacher as strategic scientist: a solution to our educational crisis. In R. P. West & L. A. Hamerlynck (Eds.), *Designs for excellence in education the legacy of B. F. Skinner* (Vol. 1, pp. 261–284). Longmont, CO: Behavior and Social Issues.
- Harris, S. L., Handleman, J. S., Gordon, R., Kristoff, B., & Fuentes, F. (1991). Changes in cognitive and language functioning of preschool

- children with autism. *Journal of Autism and Developmental Disorders*, 21, 281–290.
- Hughes, J. C., & Shook, G. L. (2007). Training and certification of behavior analysts in Europe: past, present, and future challenges. *European Journal of Behavior Analysis*, 8, 239–249.
- Huskens, B., Reijers, H., & Didden, R. (2012). Staff training effective in increasing learning opportunities for school-aged children with autism spectrum disorder. *Developmental Neurorehabilitation*, 15, 435–447.
- Jacobson, J. W., Mulick, J. A., & Green, G. (1998). Cost-benefit estimates for early intensive behavioral intervention for young children with autism: general model and a single state case. *Behavioral Interventions*, 13, 201–226.
- Johnston, J. M., & Shook, G. L. (1993). A model of the statewide delivery of programming services. *Mental Retardation*, 31, 127–139.
- Keenan, M., Dillenburger, K., Moderato, P., & Rottgers, H. (2010). Science for sale in a free market economy: but at what price? ABA and the treatment of autism in Europe. *Behavior and Social Science*, 19, 124–141.
- Kliener, M. M., & Krueger, A. B. (2013). Analyzing the extent and influence of occupational licensing on the labor market. *Journal of Labor Economics*, 31, 173–202.
- Koegel Autism Consultants (2015). PRT Training and Certification Program Retrieved from <http://www.autismprthelp.com/online-prt-certification.php>.
- Leaf, R. B. (2015). *The Lovaas model: love it or hate it, but at least understand it!* Presented at evidence based autism spectrum disorder intervention CAS and autism partnership conference. Las Vegas, NV.
- Leaf, R. B., McEachin, J. J., & Taubman, M. (2008). *Sense and nonsense in the behavioral treatment of autism: it has to be said*. New York, NY: DRL Books.
- Leaf, R. B., Taubman, M. T., McEachin, J. J., Leaf, J. B., & Tsuji, K. H. (2011). A programmatic description of a community-based intensive behavioral intervention program for individuals with autism spectrum disorders. *Education and Treatment of Children*, 34, 259–285.
- Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology*, 55, 3–9.
- Lovaas, O. I. (2002). *Celebration of Donald M. Baer*, Paper presented at the Celebration of Donald M. Baer, Lawrence, Kansas.
- Lovaas, O. I., Koegel, R., Simmons, J. Q., & Long, J. S. (1973). Some generalization and follow-up measures on autistic children in behavior therapy. *Journal of Applied Behavior Analysis*, 6, 131–166.
- Luciano, M. C., Herruzo, J., & Barnes-Holmes, D. (2001). Say-do generalization. *The Psychological Record*, 51, 111–130.
- Maurice, C. (1994). *Let me hear your voice: a family's triumph over autism*. New York City, New York: Ballantine Books.
- McEachin, J. J., Smith, T., & Lovaas, O. I. (1993). Long-term outcome for children with autism who received early intensive behavioral treatment. *American Journal on Mental Retardation*, 97, 359–372.
- McGee, G. G., & Morrier, M. J. (2005). Preparation of autism specialists. In F. R. Volkmar, R. Paul, A. Klin, & D. Cohen (Eds.), *Handbook of autism and pervasive developmental disorders: assessment, interventions, and policy* (pp. 1123–1160). Hoboken, NJ: Wiley.
- Moore, J., & Shook, G. L. (2001). Certification, accreditation, and quality control in behavior analysis. *The Behavior Analyst*, 24, 44–55.
- Morris, E. K. (2009). A case study in the misrepresentation of applied behavior analysis in autism: the Gernsbacher lectures. *The Behavior Analyst*, 32, 205–240.
- Risley, T. R. (1975). Certify procedures not people. In W. Scott Wood (Ed.), *Issues in evaluating behavior modification*. Champaign, IL: Research Press.
- Romanczyk, R. G., Callahan, E. H., Turner, L. B., & Cavalari, R. N. S. (2014). Efficacy of behavioral interventions for young children with autism spectrum disorders: public policy, the evidence base, and implementation parameters. *Review Journal of Autism and Developmental Disorders*, 1, 276–326.
- Sallows, G. O., & Graupner, T. M. (2005). Intensive behavioral treatment for children with autism: four-year outcome and predictors. *American Journal on Mental Retardation*, 10, 417–438.
- Seiverling, L., Pantelides, M., Ruiz, H. H., & Sturmey, P. (2010). The effects of behavioral skills training with general case training on staff chaining of child vocalizations within natural language paradigm. *Behavioral Interventions*, 25, 53–75.
- Shook, G. L., & Favell, J. E. (2008). The behavior analyst certification board and the profession of behavior analysis. *Behavior Analysis in Practice*, 1, 44–48.
- Shook, G. L., Hartsfield, F., & Hemingway, M. (1995). Essential content for training behavior analysis practitioners. *The Behavior Analyst*, 18, 83–91.
- Shook, G. L., Ala'i-Rosales, S., & Glenn, S. S. (2002). Training and certifying behavior analysts. *Behavior Modification*, 26, 27–48.
- Smith, T. (2001). Discrete trial training in the treatment of autism. *Focus on Autism and Other Developmental Disabilities*, 16, 86–92.
- Smith, T., & Wynn, J. (2002). Considerations in selecting consultants for home-based programs. In O. I. Lovaas (Ed.), *Teaching individuals with developmental delays: basic intervention techniques*. Pro-Ed: Austin, TX.
- Smith, T., Parker, T., Taubman, M., & Lovaas, I. O. (1992). Transfer of staff training from workshops to group homes: a failure to generalize across settings. *Research in Developmental Disabilities*, 13, 57–71.
- Van Houten, R., Axelrod, S., Bailey, J. S., Favell, J. E., Foxx, R. M., Iwata, B. A., & Lovaas, I. O. (1988). The right to effective behavioral treatment. *Journal of Applied Behavior Analysis*, 21, 381–384.
- Wallace, M. D., Doney, J. K., Mintz-Resuder, C. M., & Tarbox, R. S. F. (2004). Training educators to implement functional analyses. *Journal of Applied Behavior Analysis*, 37, 89–92.
- Weinkauff, S. M., Zeug, N. M., Anderson, C. T., & Ala'i-Rosales, S. (2011). Evaluating the effectiveness of a comprehensive staff training package for behavioral interventions for children with autism. *Research in Autism Spectrum Disorders*, 5, 864–871.
- Weiss, M. J., & Shook, G. L. (2010). Resources on training requirements for applied behavior analysts: the behavior analyst certification board and the autism special interest group consumer guidelines. *European Journal of Behavior Analysis*, 11, 217–222.
- Whang, P. L., Fletcher, K. R., & Fawcett, S. B. (1982). Training counseling skills: an experimental analysis and social validation. *Journal of Applied Behavior Analysis*, 15, 325–334.