

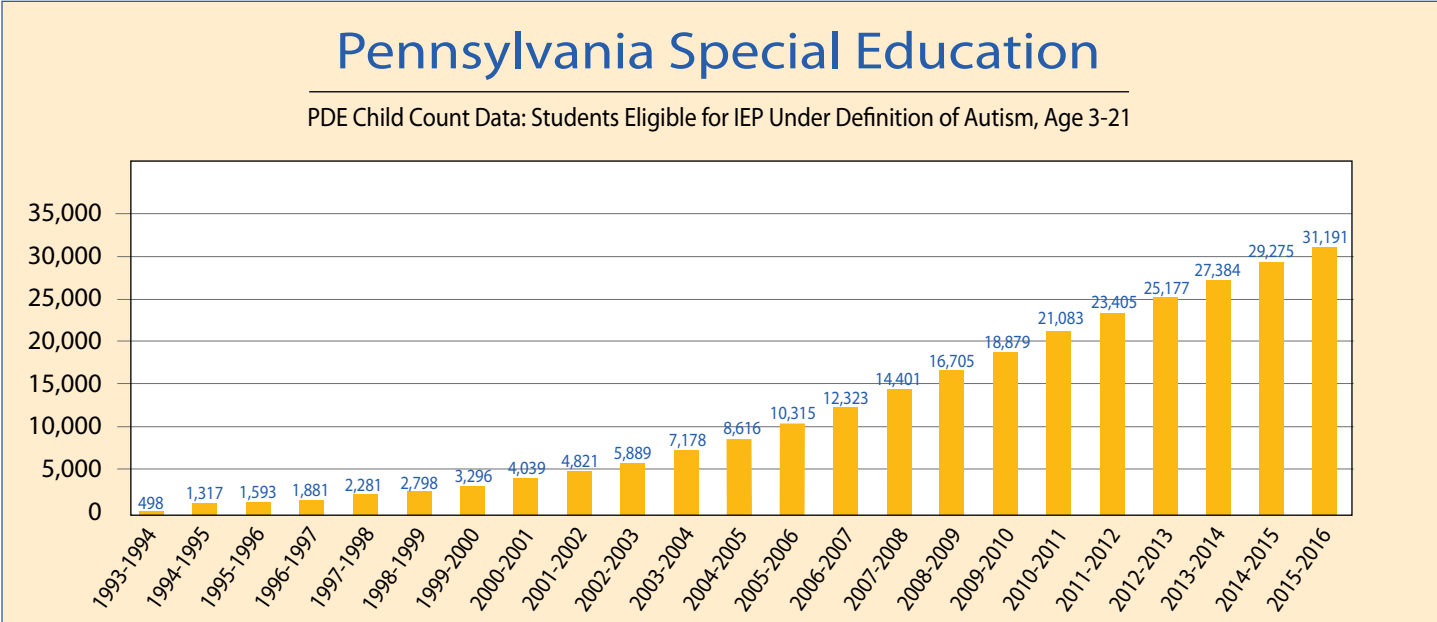
Board Certified Behavior Analysts and Public Education: Rationale and Guidelines

Introduction

The number of students with Autism Spectrum Disorders (ASD) in Pennsylvania has continued to increase. During the 2015-16 school year there were 31,191 students eligible for special education under the definition of autism. That represents

about a six percent increase over the 2014-2015 school year. Since the 2000-01 school year, the number of students served in Pennsylvania under the definition of autism schools has grown by 529 percent (See Figure 1).

Figure 1.



As the number of students with Autism Spectrum Disorders (ASDs) has grown, so has the need for effective educational interventions. School systems have been challenged to identify critical outcomes for these students, design effective teaching protocols, train staff to implement programming, and establish systems to monitor student progress and program efficacy. Addressing the needs of students with autism is best accomplished through a team approach. A key member of that team can be a Board Certified Behavior Analyst (BCBA). The evidence for effective interventions for students with autism (NAC, 2014) suggests a critical role for Applied Behavior Analysis (ABA) as a conceptual model to guide in the development of teaching procedures and behavior management that directly affect instructional outcomes. Given their expertise in ABA, Board Certified Behavior Analysts (BCBA) and Board Certified Assistant Behavior Analysts (BCaBA) are uniquely situated as valuable members of educational teams responsible for designing and implementing effective instructional programs for students with ASDs.

The number of professionals holding the BCBA and BCaBA credential has increased significantly. This is likely a direct result of the role BCBA and BCaBA have had in intervention processes for individuals with autism, but may reflect a broader appreciation for the role of behavior analysts in relation to services for a wide range of people and issues. Although they are often employed in schools for the positive role they can play in addressing the needs of students with ASDs, BCBA and BCaBA have a broad range of skills that are applicable to a wide range of service delivery needs in public education.

How BCBA Can Improve Educational Programs

Schools exist to help students learn. Learning, of course, is a process in which students acquire new skills as a result of experience. BCBA have a strong background in the area of skill acquisition, maintenance, and generalization. Behavior analysts employ methods such as task analysis, stimulus transfer procedures, shaping, discrete trial instruction, and direct instruction to build student skills. Behavioral technology has utilized case study and single subject designs to verify the effectiveness of a range of interventions. By employing skills related to the systematic analysis

of both instruction and student outcomes, BCBA can assist teams in providing efficient and sensitive measures of student progress.

Schools are faced with significant needs related to managing issues related to students who present with complex behavioral needs. BCBA are specialists who are able to guide programs for managing challenging behaviors and complex instructional issues. Working within a team structure to promote socially positive and adaptive behaviors for students, BCBA can augment the work done by school psychologists, guidance counselors, teachers, and other school professionals.

By engaging in activities such as consultation with teachers, paraprofessionals, parents, and others working in the schools, BCBA can provide significant contributions toward effective school practices by completing behavioral observations of both instructional and student variables, development of procedural descriptions; assisting in the specification of behavior change monitoring systems (data collection), guiding the development of Functional Behavior Assessments and Positive Behavior Support plans, and participation in team planning for school-wide systems of positive behavior support. BCBA are able to collaborate in the development of educational programs related to the treatment of autism and other developmental disorders, including programs for teaching verbal behavior, imitation skills, social skills, and instructional control for individual students, as well as classroom management procedures.

What is a BCBA and a BCaBA?

Board Certified Behavior Analysts and Board Certified Assistant Behavior Analysts are credentialed through the Behavior Analysts Certification Board (BACB). The following descriptions are taken from the www.BACB.com website:

The Behavior Analyst Certification Board® , Inc. (BACB®) is a nonprofit 501(c)(3) corporation established in 1998 to meet professional credentialing needs identified by behavior analysts, governments, and consumers of behavior analysis services. The BACB adheres to international standards for boards that grant professional credentials. The BACB's certification procedures and content undergo regular psychometric review and validation pursuant to a job analysis

survey of the profession and standards established by content experts in the discipline.

The Board Certified Behavior Analyst® (BCBA®) is a graduate-level certification in behavior analysis. Professionals who are certified at the BCBA level are independent practitioners who provide behavior-analytic services. In addition, BCBA's supervise the work of Board Certified Assistant Behavior Analysts, Registered Behavior Technicians, and others who implement behavior-analytic interventions.

BCBA's must abide by the Professional and Ethical Compliance Code for Behavior Analysts. Those rigorous standards are available at <http://bacb.com/ethics-code/>

The Board Certified Assistant Behavior Analyst® (BCaBA®) is an undergraduate-level certification in behavior analysis. Professionals who are certified at the BCaBA level may not practice independently, but must be supervised by someone certified at the BCBA/BCBA-D level. In addition, BCaBA's can supervise the work of Registered Behavior Technicians, and others who implement behavior-analytic interventions.

As of August 2016 there were approximately 20,768 BCBA's worldwide. There has been a significant growth in the number of certified behavior analysts since the credential was established in 1998. The rate of new certificants has increased annually. There are 2372 BCaBA's worldwide as of August 2016. Frequently BCaBA's become BCBA's (about a third of all BCaBA's become BCBA's each year). The rate at which BCBA's and BCaBA's become certified is likely to continue to increase. It is projected that there will be 42,000-60,000 BCBA's by the end of 2020 (Deochand and Fuqua, 2016).

BACB Course Content Allocation Requirements

Figure 2 summarizes areas of study and required coursework hours as minimum requirements to obtain BCBA certification. Coursework is the most common route to BACB certification (faculty position and post-doctoral work are other options).

Figure 2.

Content Areas	Required Number of Classroom Hours
Ethical and profession conduct	45 hours
Concepts and principles of behavior analysis	45 hours
Research methods in behavior analysis <ul style="list-style-type: none"> • Measurement • Experimental design 	25 hours 20 hours
Applied behavior analysis <ul style="list-style-type: none"> • Fundamental elements of behavior change and specific behavior change procedures • Identification of the problem and assessment • Intervention and behavior change consideration • Behavior change systems • Implementation, management, and supervision 	45 hours 30 hours 10 hours 10 hours 10 hours
Discretionary	30 hours
Total	270 hours



There have been hundreds of high quality, empirical articles published that document the effectiveness of ABA (Matson, et al, 1996; National Autism Center Standards Report, 2015). In schools, ABA has guided interventions in relation to educational services for students with autism. It is also a central component of evidence based practices to guide Functional Behavior Assessments and Positive Behavior Support Plans. In addition, the principles of ABA have guided development of instructional strategies (e.g., direct instruction, precision teaching) as well as instructional methods relevant to teaching activities of daily living and social skills. Educational practices such as fluency measures, direct instruction, guided notes, and precision teaching have been derived from the field of behavior analysis.

Standards of Practice for Behavior Analysts

Standards of practice within the field of Applied Behavior Analysis have been established and credentialed on a national and international basis through the Behavior Analysis Certification Board (BACB, 2016):

The Behavior Analyst Certification Board®, Inc. (BACB®) is a nonprofit 501(c)(3) corporation established in 1998 to meet professional credentialing needs identified by behavior analysts, governments, and consumers of behavior analysis services. The BACB adheres to international standards for boards that grant professional credentials. The BACB's certification procedures and content undergo regular psychometric review and validation pursuant to a job analysis survey of the profession and standards established by content experts in the discipline. (BACB, 2016)

The Behavior Analyst Certification Board's Board Certified Behavior Analyst (BCBA) and Board Certified Associate Behavior Analyst (BCaBA) credentialing programs are accredited by the National Commission for Certifying Agencies in Washington, DC. NCCA is the accreditation body of the Institute of Credentialing Excellence. (BACB, 2016)

The BACB has developed and published a task list outlining critical skills to be demonstrated by credentialed Behavior Analysts. The task list iterates specific content related to Basic Behavior Analytic Skills, Client Centered Responsibilities, and Foundational Knowledge. Major

Applied Behavior Analysis

Services using Applied Behavior Analysis can improve the educational performance of students and directly result in positive outcomes for students with a wide range of behavioral and educational needs.

The science of behavior analysis has been shown to be effective in addressing a wide range of issues pertinent to public school education.

Behavior Analysis is the scientific study of principles of learning and behavior. Applied Behavior Analysis (ABA) is a systematic approach for influencing socially important behavior through the identification of reliably related environmental variables and the production of behavior change techniques that make use of those findings (BACB, 2016).

topic areas covered in the task list include: measurement of behavior, experimental design, behavior change considerations, fundamental elements of behavior change, specific behavior change procedures, behavior change systems, identification of the problem, measurement of behavior change, assessment, intervention, implementation, management, supervision, philosophical assumptions of behavior analysis, basic concepts and principles of behavior analysis, verbal behavior, and measurement concepts. In addition, behavior analysts are expected to conform with established Guidelines for Responsible Conduct and Ethical Standards. BCBA and BCaBA certification also involves completion of rigorous field practice and supervision. BCBAs must complete 1500 hours of supervised experience and BcaBAs must complete 1000 hours of supervised field experience. BCBAs must have obtained a minimum of a master's degree in behavior analysis, psychology, education or a related field. BCaBAs are required to have obtained a Bachelor's level degree in an appropriate field of practice.

Behavior Analysis in Pennsylvania

Over the past 20 years, the presence of behavior analytic services in Pennsylvania has increased. As of November 2016, the BACB lists 1102 BCBA and BCaBAs residing in Pennsylvania. Internationally, behavior analysis has shown significant growth. Since its inception in 1999 through 2014, the BACB has certified a total of 17,754 BCBAs worldwide. In 2014, over 3000 new BCBAs obtained certification. This growth is most likely due to several variables, including an increased consumer demand for services provided by behavior analysts as well as increased awareness of ABA's benefits.

Behavior analysis is receiving more attention from educators due to local recognition of the value of ABA in autism treatments, as well as evidence of effective outcomes in school programs that have implemented well-designed ABA-based programs. Given the significant and continued rise in the number of students receiving IEPs under the eligibility definition of Autism, there exists a continued need for more training and support from professionals skilled in ABA. In addition, behavior interventions are being used more often in the schools. Because the principles of behavior analysis seem easy (because they are scientifically simplistic), people who do not adequately understand them may be prone to misusing them (Alberto and Troutman,

2009). Having competent Behavior Analysts guide treatment in the school will allow interventions derived from the field of ABA to be implemented with fidelity and avoid the misuse of basic principles.

In Pennsylvania, training and technical support to districts have included, among a range of interventions, ABA-based instruction. The PATTAN Autism Initiative ABA Supports effort has demonstrated significant growth in the past 12 years. School districts, charter schools, approved private schools, and intermediate units have chosen to receive consultative support that includes intensive training and objective standards of practice as measured by reliable site review processes. Since the 2003-2004 school year, participation in the Autism Initiative ABA Supports has grown from 12 participating sites to about 530 participating sites in the 2016-17 school year. This growth likely resulted from local recognition of the value of ABA in autism treatments, as well as evidence of effective outcomes in school programs that have implemented well-designed ABA programs. As public school entities become independent in implementing effective interventions derived from behavior analysis, the demand for local expertise in behavior analysis is likely to increase. BCBAs are likely the most qualified professionals to fill that role.

University training programs providing the necessary coursework to allow candidates to sit for the BACB credentialing exam have also increased significantly. As of 2014, there were 11 universities offering course sequences in behavior analysis within the commonwealth. In addition, nationwide training sequences in behavior analysis offered by a range of universities are frequently accessed by candidates from Pennsylvania.

Behavior Analysis: Guidelines for Educational Practice

In schools, behavior analysts may function to:

- Train staff to implement ABA programs with fidelity and collect and analyze appropriate data.
- Develop and implement effective behavior management programs for students who are experiencing social and emotional difficulties and other complex or severe behaviors. Through such plans focus on procedures that establish competing behaviors and reduce aversive consequences.

- Consult with school staff and parents to assess, select, and evaluate behavior change procedures, as well as to guide effective instructional practices.
- Assist teams serving students with IEPs in effective, direct, and efficient data collection; procedural descriptions; and, data based decision making skills.
- Design, implement, and train others to provide discrete trial instruction, natural environment training, mand training, and other instructional strategies.
- Assist educational teams and administration in evaluating effectiveness of intervention plans and implementation outcomes.
- Manage assaultive students.
- Assist in development of transition plans including use of task analysis.
- Assist teams in establishing an environment in schools that is safe, humane, and responsive to individual needs.

Through systematic procedures to evaluate the relationship between environmental variables and student outcomes, ABA has been used to produce critical measures of treatment fidelity to ensure consistent quality educational practices. Behavior analysts are qualified to provide services to clients with a variety of needs, including improvements in organizational functioning (e.g., staff performance, management and pay structure interventions), skill deficits (e.g., communication, adaptive behavior), and problem behavior (e.g., aggression, self-injurious behavior), among others.

Additional Guidelines for Working With BCBAs

- Gain familiarity with the skills and contributions that behavior analysts can provide.
- Develop a shared vocabulary of common and technical terms related to the principles of both behavior analysis and educational practice. While behavior analysts have developed a technical set of verbal terminology, quality behavior analysts are skilled at describing technical language in common terms.



- Identify processes that will establish and maintain collaborative efforts among behavior analysts and other professionals, including teachers, guidance counselors, school psychologists, and speech-language pathologists.
- Extend assessment processes, especially for progress monitoring but also for eligibility decisions, to include analysis frequently used in ABA such systematic case study and single subject designs.
- Sharpen the process of completing functional behavior assessments and positive behavior support plans by including input from behavior analysis especially related to the role of matching functional environment-behavior relations and behavior change principles.
- Utilize behavior analysts to assist in the graphic display of critical data related to skill acquisition and problem behavior reduction.
- Consider utilizing behavior analysts in the provision of staff development, including training instructional procedures, monitoring intervention integrity, and practical application of learning theory.

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