

PRINCIPALS WHO UNDERSTAND APPLIED BEHAVIOR ANALYSIS PERCEIVE THEY ARE BETTER ABLE TO SUPPORT EDUCATORS WHO TEACH STUDENTS WITH AUTISM

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Local educational agencies are challenged to teach students classified with autism in general education inclusive settings. Findings of empirical studies have reported many educators lacked the necessary pedagogical coursework and training to meet the instructional needs of these students. Building principals have reported they lacked the necessary training, skills, and confidence to evaluate and support teachers who teach students with autism. The purpose of the present paper was to survey 60 elementary school principals, in the Southeastern region of New York, to determine if they perceived they were trained, skilled, and confident in their knowledge of ABA to evaluate and support teachers who worked with students classified with autism in inclusive settings. Nine principals did not participate in this survey. Fifty-one graduate students expedited the interview process and completion of the surveys. The results of the survey supported the hypothesis that principals who understand behavior-analytic strategies grounded in the principles of ABA perceived they were better able to support educators who teach students with autism in inclusive classroom settings.

Introduction

Decades of empirical studies (Centers for Disease Control and Prevention [CDC], 2010) have supported behavior-analytic instructional practices grounded in the principles of applied behavior analysis (ABA) as an effective methodology to teach children classified with autism. Research findings have reported that educators were not adequately trained or skilled to teach these students, especially in inclusive classroom settings (National Research Council [NRC], 2001). Research studies also reported that principals lacked the necessary training, skills, and confidence to evaluate and support teachers who instructed children classified with autism in inclusive settings (Anderson & Decker, 1993; Evans, Bird, Ford, Green, & Bischoff, 1992; Patterson, Bowling, & Marshall, 2000; Praisner, 2003; Reynolds, 2008).

Increase in Autism Diagnosis

Not only have local educational agencies (LEAs) in the United States witnessed a dramatic increase in the number of children classified with autism (CDC, 2009; Rice, 2007), but more students with autism are being educated in general education inclusive classrooms (Goodman & Williams, 2007; U.S. Department of Education, 2006). In fact, since 1997 *autism* was the only disability *group* that had more than quintupled in numbers, growing from 42,517 in 1997 to 224, 565 in 2006 (U.S. Department of Education, 2007).

For purposes of this survey study *autism* was defined (by the Individuals with Disabilities Education Improvement Act [IDEA] of 2004) as a *developmental disability significantly affecting verbal and non-verbal communication and social interaction, generally evident before age three, that adversely affects a student's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences* (see U.S. Department of Education, Federal Register (2006) p. 46756, 300.8(c)(1)(i)).

While federal law does not mandate the inclusion of special education students in general education classrooms, the law does require that a considerable attempt be made by LEAs to find an appropriate placement for students with disabilities in the least restrictive environment. For this study the operational definition of *inclusion*, as defined by Lamar-Dukes and Dukes (2005), was *the move toward including students with disabilities in general education...where students with disabilities have sufficient and systematic opportunities to engage with students without disabilities* (p. 55).

Federal Mandates

In attempting to respond professionally to this unprecedented increase, Federal mandates (IDEA, 2004; No Child Left Behind [NCLB], 2002) have consistently directed State Education Departments and LEAs to address the instructional needs of children classified with autism in the least restrictive environments, namely, inclusive classroom settings. This challenging directive has received support from parents of children with disabilities (Reynolds, 2008), and comes at an extraordinary moment in the history of education since more students with disabilities can be expected to receive their academic instruction in general education environments (Arthaud, Aram, Breck, Doelling, & Bushrow, 2007; Carter & Hughes, 2006; U.S. Department of Education, 2008). Hence, LEAs can be expected to educate a significant number of students diagnosed with autism in general education classes (Goodman & Williams, 2007).

In view of these federal mandates, today's educators need to be skilled and competent in the use of long-standing effective evidence-based instructional strategies (Dammann & Vaughn, 2001; Harrower & Dunlap, 2001; McCabe, 2008; NRC, 2001; Smith, Robb, West, & Tyler, 2010; Spooner, Dymond, Smith, & Kennedy, 2006), and the fundamentals of positive behavior supports (PBS) (Carr, Dunlap, Horner, Koegel, Turnbull, Sailor, Anderson, et al., 2002). Professional organizations such as The Interstate New Teacher Assessment and Support Consortium [INTASC] (2003), and National Council for Accreditation of Teacher Evaluation [NCATE] (1998), as well as educators and administrators at all levels, agreed that teachers should be prepared to apply the findings of empirical research to the continued enhancement of curriculum and instruction. Thus, Secretary of Education Duncan (2009) urged *every teacher education program today to make better outcomes for students the overarching mission that propels all their efforts* (p. 3).

Efficacy of Applied Behavior Analysis

Not all evidence-based instructional practices are equal; some have been recognized to affect student learning outcomes more than others (CDC, 2010; Forness, Kavale, Blum, & Lloyd, 1997). The use of ABA as an evidence-based instructional approach to teach children with autism has received considerable empirical support. Various evidence-based instructional practices grounded in the principles of ABA (e.g., Discreet Trial Teaching, Pivotal Response Training, the Treatment and Education of Autistic and Related Communication-handicapped Children, Early Intensive Behavioral Intervention, Verbal Behavior Intervention, and others) apply the principles of learning towards the instruction of specific behaviors. As a result, student outcomes are constantly analyzed to establish the functional relationship between the intervention and changes in behavior (Baer, Wolf, & Risley, 1968).

Since the early 1960s an extensive body of empirical data has supported the efficacy of behavior-analytic strategies (Adair & Schneider, 1993; Anglesea, Hoch, & Taylor, 2008; Davis & Chittum, 1994; Eikeseth, Smith, Jahr, & Eldevik, 2002; Hagopian, Bruzek, Bowman, & Jennett, 2007; Heflin & Alaimo, 2007; Lovaas, 1987; Matson, Sevin, Fridley, & Love, 1990; Peyton, Lindauer, & Richman, 2005; Repp, Felce, & Barton, 1988; Sallows & Grauper, 2005; Sheinkopf & Siegel, 1998; Smith, Groen, & Wynn, 2000; Taylor, Hughes, Richard, Hoch, & Coello, 2004; and countless others). Due to this substantial body of empirical evidence, CDC, 2010, the U.S. Surgeon General (Rossenwasser & Axelrod, 2002), and the New York State Department of Health (Clinical Practice Guideline: Report of the Recommendations, 1999) have supported the use of evidence-based instructional practices grounded in the principles of ABA as an important treatment approach for individuals classified with autism.

Therefore, *all* educators are challenged to learn and master ABA principles and must be trained in the application of these behavior-analytic strategies to appropriately teach children with autism who are placed in inclusive settings. The impact that behavior-analytic instruction can have on a child with autism is profound; in some instances such instruction resulted in children being indistinguishable from their typically developing peers (Lovaas, 1987; Sheinkopf & Seigel, 1998). For others, the systematic implementation of these evidence-based instructional strategies resulted in improved outcomes (Browder, Karvonen, Davis, Fallin, & Courtade-Little, 2005).

Yet, NRC (2001) reported, based upon several decades of empirical evidence, that general educators and special educators were not well trained in evidence-based instructional practices grounded in the principles of ABA. Based on these findings, students with autism may have been receiving less than an appropriate level of instruction, and educators may not have been meeting the *spirit* of NCLB if less than *highly qualified* educators instructed these children. Hence, LEAs and their respective building principals continued to be faced with a significant challenge to: (a) improve teachers' understanding of evidence-based instructional practices grounded in the principles of ABA, (b) integrate the application of these practices to pedagogical instruction to better support general and special education teachers who teach children classified with autism, (c) improve teachers' understanding of PBS, and (d) improve learning outcomes for children classified with autism.

Positive Behavior Support

Positive Behavior Support (PBS) was defined as an *applied science that uses educational and systems change methods (environmental redesign) to enhance quality of life and minimize problem behavior* (Carr et al., 2002, p. 4). The field of developmental disabilities is to be credited for the origin of PBS which is grounded in the principles of ABA and the normalization/inclusion movement (Carr et al., 2002). PBS effectively integrated ABA concepts such as shaping, fading, chaining, prompting, and reinforcement contingencies to diminish challenging behaviors and has taken on its own uniqueness (Sulzer-Azaroff & Mayer, 1991). According to Chance (1998) and Miltenberger (1997), ABA was responsible for the application of the antecedent-behavior-consequence (reinforcement) model utilized in PBS.

Today, increasing numbers of special education classrooms have utilized PBS as a treatment approach to modify challenging behaviors presented by students with severe disabilities (Heward, 2009). Community environments have become the natural settings to conduct PBS interventions. These natural (or inclusive) settings have enabled educators to modify assessments, interventions, and to target learning outcomes that better meet students' needs (Carr, 1997).

Carr et al. (2002) reported that *Philosophically, PBS subscribes to the principle and ideal of normalization, namely, that people with disabilities should live in the same settings as others and have access to the same opportunities as others* (p. 5). Children with autism and other severe disabilities should also receive their academic instruction in general education classrooms alongside their non-disabled peers. Hence, the need for teachers to be well trained and skilled in ABA instructional practices and PBS interventions when working with children classified with autism, especially those in inclusive classroom settings.

Pedagogical Preparation for Principals

While limited empirical studies have been conducted to determine how well prepared building principals are in supporting educators who teach children who are classified with autism in inclusive settings (Salisbury, 2006), principals often expressed a lack of confidence in their pedagogical preparation (Anderson & Decker, 1993; and countless others). Since principals are viewed as both *instructional leaders* in schools (Fullan, 1991; Hallinger, 2007) and monitors of the implementation of intervention methodologies (Rebore & Walmsley, 2007), their lack of confidence appeared to be an area of concern that needed to be addressed if children who are autistic were to receive an *appropriate* education in inclusive classroom settings.

In keeping with the *spirit* of NCLB, building principals have been inclined to evaluate teachers' professional competence and their successes by examining students' standardized or achievement scores, and the teachers' classroom management abilities (Jacobs & Lefgren, 2006). This issue has stressed educators and their immediate supervisors who are now accountable for student outcomes (Hoyle, English, & Steffy, 2002). Hence, if building principals are to effect change in their teachers and improve academic, social, and behavioral outcomes for students with disabilities, they need to have expertise in curriculum, instructional materials and resources, evidence-based intervention practices, methodologies, and strategies (DuFour & Marzano, 2009; Odell, 1986; Pajak, 1989; Salisbury, 2006; Taylor, 1986). To effect this change required a commitment, an increased knowledge base, and training for educational leaders who supported and worked in partnership with their teachers (Guthrie & Schuermann, 2010; Jacobs & Lefgren, 2006; Salisbury, 2006).

Method

This study reviewed and examined the issues pertaining to the pedagogical preparation and confidence level of 51 of 60 selected elementary school building principals from LEAs in the southeastern region of New York. Nine of the 60 principals elected not to participate in this survey. This represented an 85% participation rate. The survey was administered by 51 graduate students who interviewed their respective elementary school principals during school year 2009-2010. The 51 principals who volunteered to participate responded to a questionnaire that contained eight questions. Total anonymity of their participation was assured. Graduate students expedited and facilitated the completion and return of the questionnaires. Previous versions of the instrument were sent to a national jury of experts. Based on feedback from these individuals, certain items were eliminated, and others were revised. The modified survey is indicated in Table 1 and Table 2.

Each of the selected elementary school building principals was asked to respond to the following questions:

- (a) In your school, do students classified with autism receive their instruction in inclusive classrooms? Yes___ No___
- (b) In your school, who is the *primary evaluator of special education teachers* working with students classified with autism? Principal___ Special Education Director (SPED)___
- (c) In your school, who is the *primary evaluator of general education teachers* working with students classified with autism? Principal___ SPED___
- (d) As an undergraduate or graduate student did you, the building principal, ever take coursework in special education? Yes___ No___
- (e) Have you, the building principal, ever taken coursework grounded in the principles of Applied Behavior Analysis (ABA)? Yes___ No___
- (f) Are you confident in your pedagogical preparation to evaluate and support special education and general education teachers *who teach children classified with autism*? Yes___ No___
- (g) If the answer to (e) is yes, what coursework or training have you had?
- (h) If the answer to (e) is no, what would you recommend, in terms of further training, to be more effective in your supervisory responsibilities of special education and general education teachers who teach children with autism?

It should be noted that principals were not asked if ABA methodologies and PBS interventions were used to educate students with autism in inclusive classrooms. The authors concluded that the principals would have responded to this question based on their own operational definition and understanding of ABA and PBS, and hence provided ambiguous and inconclusive information.

Findings

The responses to survey questions (a) through (f) are presented in Table 1 and a report of the responses to survey questions (g) and (h) were presented in Table 2. The responses appear to support the primary hypothesis that Principals who claim to understand the principles grounded in ABA perceive that they are better able to support educators who teach children classified with autism.

In Table 1, question (a), all 51 principals were asked, if students classified with autism received instruction in inclusive classrooms within their respective elementary schools? Forty-four or 86.3% of the 51 principals responded affirmatively; students with autism, in their respective elementary schools, did receive instruction in inclusive general education classrooms. Seven or 13.7% of the 51 principals reported they had no students classified with autism included in their general education classrooms.

In question (b) the principals were asked who was the primary evaluator of special education teachers who worked with students classified with autism in their schools? Twenty-three or 45.1% of the 51 principals responded that they assumed the primary responsibility of observing, evaluating and supporting special education teachers who worked with students classified with autism. Sixteen or 31.4% of the 51 principals responded that the SPED was the primary evaluator, and twelve or 23.5% of the 51 principals responded that both the principal and the SPED shared equally in the supervision of these teachers. Thirty-five or 68.6% of the building principals reported they assumed, in general, the primary (45.1%) and shared (23.5%) responsibility to evaluate and support special education teachers working with students who were classified with autism in their elementary school buildings.

Table 1. Results of Elementary Schools Principals' Survey Responses for questions (a) through (f)

Questions	Principals Responses (n=51)				
	Yes	No	Principal	SPED	Both
(a) Do students classified with autism receive instruction in inclusive classrooms?	44 (86.3%)	7 (13.7%)			
(b) Who is the primary evaluator of special education teachers working with students classified with autism?			23 (45.1%)	16 (31.4%)	12 (23.5%)
(c) Who is the primary evaluator of general education teachers working with students classified with autism?			51 (100%)	0	0
(d) Did you, the building principal, ever take course work in special education?	46 (90.2%)	5 (9.8%)			
(e) Have you, the building principal, ever taken course work grounded in the principles of ABA?	20 (39.2%)	31 (60.8%)			
(f) Are you, the building principal, confident in your pedagogical preparation to evaluate and support special education and general education teachers who teach children classified with autism?	32 (62.7%)	19 (37.3%)			

In question (c) the principals were asked who was the primary evaluator of general education teachers working with students classified with autism? As expected, 51 out of 51 or 100% of the principals responded that they were the primary evaluators and supporters of general education teachers working with students classified with autism in inclusive settings.

The SPED assumed minimal to no responsibility for the supervision of general education teachers working with these children.

In questions (d) and (e) the principals were asked if they had taken coursework in special education as an undergraduate or graduate student, and coursework grounded in the principles of ABA respectively. In response to question (d), 46 or 90.2% of the 51 principals responded that they had taken coursework in special education either in their undergraduate or graduate programs while only five or 9.8% of the 51 principals responded they had not. However, in response to question (e), 20 or 39.2% of the 51 principals responded they had taken coursework grounded in the principles of ABA in college or graduate school while 31 or 60.8% of the 51 principals reported they had not.

Question (f) of the survey study asked principals if they were confident in their pedagogical preparation to evaluate and support special education and general education teachers who taught children classified with autism. While 32 or 62.7% of the 51 principals responded affirmatively to this question, 19 or 37.3% of the 51 principals responded they were not confident in their pedagogical preparation to properly execute their professional obligations to evaluate and support teachers who taught children classified with autism.

Question (g) asked principals that if they responded yes to question (f) (indicating they were confident in their abilities to professionally supervise these educators), what pedagogical preparation and training had they received? The explanations given were as follows: (a) undergraduate or graduate training in special education – 16 responders, (b) in-service training and workshops in special education – 12 responders, (c) support from special education administrative staff – 9 responders, (d) former special education teacher – 6 responders, (e) former special education director – 3 responders, (f) former school psychologist – 2 responders.

Table 2. Results of Elementary Schools Principals' Survey Responses for questions (g) and (h)

	Responses	Number
(g) If the answer to (e) is yes, what coursework or training you had?	Undergraduate or Graduate Training in Special Education	16
	In-Service Training and Workshops in Special Education	12
	Support from Special Education Administrative Staff	9
	Former Special Education Teacher	6
	Former Special Education Director	3
	Former School Psychologist	2
(h) If the answer to (e) is no, what would you recommend, in terms of further training, to be more effective in your supervisory responsibilities of special education and general education teachers who teach children autism?	Area of Training	Number
	Evidence Based Practices Grounded in the Principles of ABA	12
	Positive Behavior Supports	11
	Support from Special Education Administrative Staff	8
	Observe Model Programs	4
	Special Education Law	2

Table 2 reported the survey's responses from the 51 principals to questions (g) and (h).

Question (h) asked principals who responded no to question (e), what you would recommend, in terms of further training, to be more effective in your supervisory responsibilities of special education and general education teachers who teach children with autism. Collectively, the 19 principals recommended additional training in the following areas: (a) evidence-based practices grounded in the principles of ABA – 12 responders, (b) PBS interventions – 11 responders, (c) support from special education administrative staff – 8 responders, (d) opportunities to observe model ABA programs – 4 responders, and (e) training in special education law – 2 responders.

Discussion

Responses from the 51 principals who participated in this survey study supported earlier research findings (Goodman & Williams, 2007; U. S. Department of Education, 2006) that reported an increasing number of children classified with autism received their instruction in inclusive classrooms. In fact, 44 or 86.3% of the 51 principals surveyed reported that children who were classified with autism received their instruction from educators in general education inclusive classrooms.

Research findings have reported that special education teachers and general education teachers frequently lacked fundamental training and skills in evidence-based instructional practices grounded in the principles of ABA (CDC, 2010, NRC, 2001, and others), as well as lacking PBS intervention strategies (Carr et al., 2002). Research findings also reported that building principals lacked the necessary training and coursework (Downing & Williams, 1997) to adequately supervise educators who instructed students classified with autism.

The responses in this survey study reported that 23 or 45.1% of the 51 principals (not the SPED) were the primary evaluators and supporters of special education teachers, and 51 or 100% of the 51 principals were the primary evaluators and supporters of general education teachers who taught students classified with autism. While 90.2% (46 of 51) of the principals reported in the survey study they had taken a course in special education, 60.8% (31 of 51) of the principals reported they had not taken any coursework grounded in the principles of ABA. Yet, 32 or 62.7% of the 51 principals perceived they were confident in their pedagogical preparation to evaluate and support teachers who worked with children classified with autism in inclusive classroom settings.

These results vary from earlier studies which reported that principals lacked the necessary training, skills, and confidence to assess and support teachers who taught children classified with autism in inclusive classrooms (Downing & Williams, 1997). Based on the collective responses from 62.7% of the principals who expressed confidence in their ability to evaluate and support staff who worked with these students, several explanations were offered in Table 2 to shed light on this perception of confidence.

Undergraduate and graduate school coursework and training was cited by 50% (16 out of 32) of the principals as the primary reason for their confidence. Twenty of the 32 principals (62.5%) who reported in Table 1 they were confident in their training and skills to evaluate and support staff working with children classified with autism in inclusive classroom settings also reported they had taken coursework grounded in the principles of ABA. Such coursework was taken either at their respective Institution of Higher Education (IHE) or they participated in staff development opportunities (in-service training or workshops pertaining to instructional practices grounded in the principles of ABA) within their LEAs.

The survey results indicated that 31 or 60.8% of the 51 principals reported they had not taken any coursework grounded in the principles of ABA. Nineteen or 61.3% of the 31 principals who had not taken any coursework in ABA reported they lacked confidence in their pedagogical preparation to evaluate and support teachers who worked in inclusive settings with children classified with autism. Hence, the results of this survey study supported the hypothesis that principals who understand interventions grounded in the principles of ABA perceived they are better able to support educators who teach students classified with autism. The results of this study supported earlier research findings which reported the need for all educators to be skilled and competent in the use of long-standing effective evidence-based instructional practices (Dammann & Vaughn, 2001; Harrower & Dunlap, 2001; McCabe, 2008; and others).

Of the principals who perceived and reported they lacked confidence in their pedagogical preparation to evaluate and support staff who worked with students classified with autism, 61.3% reported a need for further training in evidence-based instructional practices grounded in the principles of ABA, and PBS interventions primarily. These principals cited support from their SPED colleagues as well as the opportunity to observe model ABA programs as areas that would enhance their effectiveness in evaluating and supporting their staff.

Limitations of the Survey Study

One limitation of this study was that it was conducted as a survey research study. Therefore, definitive conclusions about the benefits of a principal having knowledge and relevant training in ABA methodologies and practices cannot necessarily be drawn from the collective responses. Secondly, the principals' responses may have been subjected to inaccurate reporting. Lastly, a third limitation concerned the validity and reliability of the survey instrument. While the instrument was reviewed by a national jury of experts and revised accordingly, it was not validated nor tested for reliability.

Final Thoughts and Implications for Future Research

The dramatic increases in the number of identified students classified with autism, throughout the US and globally continue to be a widespread concern. As we embark on the 21st century, teaching students classified with autism using evidence-based instructional practices grounded in the principles of ABA, as well as PBS interventions, appears to be the *hallmark* challenge for IHE, LEAs, administrators, educators and parents. Every effort must therefore be made to reform our instructional methods and interventions, as guided by previous and prospective validated empirical findings, to affect positive gains in the (a) cognitive domain, (b) social and behavioral skills domain, and (c) language and communication skills domain of students classified with autism.

These students classified with autism appear to be in need of receiving more than an *appropriate* education if they are to achieve their maximum potential. They need their teachers and principals to be professionally trained and skilled in evidence-based instructional methods and strategies grounded in the principles of ABA. Although ABA is strongly supported by empirical research, other approaches to instruction should be explored to determine their efficacy in helping children on the autistic spectrum.

Downing and Williams (1997) reported that principals were in need of being trained and skilled in evidence-based practices. In fact, principals have expressed a lack of confidence in their pedagogical preparation to support educators who teach children classified with autism in inclusive classrooms

(Anderson & Decker, 1993; Evans, Bird, Ford, Green, & Bischoff, 1992; Patterson, Bowling, & Marshall, 2000; Praisner, 2003; Reynolds, 2008). Hence, future empirical studies should examine the direct relationship between the pedagogical preparation of building principals and their level of success (as determined by the outcome data of students' learning) in supporting educators working with students who are classified with autism in inclusive classrooms.

If building principals continue to be recognized as the *educational leader* of their respective schools, IHE must examine, adjust, and revise their administrative syllabi to ensure that future school leaders are well trained to make evidence-based decisions pertaining to curriculum and pedagogical instruction for all students (Barnett & Monda-Amaya, 1998; Reynolds, 2008; Salisbury, 2006; Salisbury & McGregor, 2002). Principals should be articulate and knowledgeable about evidence-based instructional practices applicable to all students, especially those classified with autism who receives their instruction in inclusive classrooms.

The writers concluded it is imperative that principals become better prepared to address the educational challenges of working with autistic children. Therefore, principals should be expected to: (a) demonstrate knowledge of content and evidence-based pedagogy, (b) apply findings of empirical research (such as ABA and PBS) to the continued enhancement of curriculum and instruction for students classified with autism, (c) supervise as well as support educators working with students classified with autism in inclusive settings in their elementary schools, and (d) increase students' standardized test scores.

Finally, it is incumbent upon IHE to collaborate and conduct follow-up surveys with LEAs that have employed the respective institutions' administrative alumni to determine the level of their efficacy in preparing principals to evaluate and support teachers who teach students classified with autism in inclusive settings. Duncan (2009) noted that Louisiana is the only state following the status and success of its graduates to determine the effectiveness of its teacher preparation programs. Perhaps the same model should be used to track the success of administrative preparation programs and its alumni. Such information would provide colleges and universities with the necessary data to help reform their instructional administrative syllabi, which would improve the preparation and confidence of prospective principals who in turn would better support teachers who teach students classified with autism in inclusive classroom settings.

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