

**GENERAL EDUCATION TEACHERS NEED TO BE PREPARED TO CO-TEACH
THE INCREASING NUMBER OF CHILDREN WITH AUTISM IN INCLUSIVE SETTINGS****Vito Loiacono***Long Island University
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The sustained increase in the number of children diagnosed with autism or autism spectrum disorder (ASD) has become a widespread concern throughout the US as well as globally. Federal mandates (Individuals with Disabilities Education Act [IDEA], 2004; No Child Left Behind [NCLB]) have directed state education departments and local educational agencies (LEAs) to address the pedagogical needs of these children in the least restrictive environments, namely, inclusive classroom settings. It has been reported that most teachers graduate from university teacher preparation programs with minimum training in evidence-based practices for children diagnosed with autism. Consequently, educators continue to be challenged to learn disability-specific teaching skills that are grounded in the principles of Applied Behavior Analysis (ABA) to address meeting the learning needs of these students. This study examines: (a) the increase of children diagnosed with autism in the Southeastern region of NY over a five year period (2003-2007); and (b) the number of ABA trained general education teachers in this region who co-teach in inclusive classrooms that include children classified with autism. The findings of this study recommend future research be empirically conducted in: (a) comparing the various ABA methodologies to determine the efficacy of each intervention with children classified with ASD; and (b) revising preparatory programs for teachers in higher education to include ABA methodologies to prepare educators to teach children with ASD in inclusive settings. Based on the research findings, institutions of higher education should continue to examine their course of study for all educators and revise their respective curricula to include ABA intervention methodologies which would ultimately benefit not only children classified with autism but other disability categories as well.

Although it is estimated that less than one percent of the general school-age (6-21) population has a severe disability (U.S. Department of Education, 2005), the sustained increase in the number of children diagnosed with autism or autism spectrum disorder (ASD) has become a widespread concern throughout the US as well as globally. Since 1997, *autism* has emerged as the *only disability category* that has exceeded quintupling in numbers (42,517 in 1997 to 224,565 in 2006) (U.S. Department of Education, 2007). While the increase transcends all age groups of children with autism, the U.S. Department of Education (2007) reported that the most rapidly growing age-group of children with autism is between the ages of 6 through 11. To date, no research study offers any definitive explanation to account for this dramatic surge in the number of children diagnosed with autism throughout the US. Specific etiological causes continue to remain unknown as well as elusive at this time.

Federal mandates (Individuals with Disabilities Education Act [IDEA], 2004; No Child Left Behind [NCLB]) have directed state education departments and local educational agencies (LEAs) to address the pedagogical needs of these children in the least restrictive environments, namely, *inclusive* classroom settings. For purposes of this study *inclusive education* has been defined as an *educational setting in which students with disabilities have access to the general education curriculum, participate in school activities alongside students without disabilities, and attend their neighborhood school* (Bryant, Smith, & Bryant, 2008, p. 605). As the number of children diagnosed with autism continues to increase throughout the US, one should anticipate that their numbers will also increase in inclusive

classroom settings (Katz, Mirinda, & Auerbach, 2002; Simpson, 2004). Therefore, educators continue to be challenged to learn disability-specific teaching skills to address meeting the learning needs of a statistically higher number of children with autism within the public school systems.

The 26th *Annual Report to Congress* (U.S. Department of Education, 2006) reported that 24.7% of children with autism (as compared to 48.2% of all disability categories) were included for 79% of their school day in general education inclusive settings throughout the US during school year 2002-2003. In 2007, Goodman and Williams reported that children with ASD, in particular, were receiving significantly more time in these general education inclusive classrooms. Hence, as this inclusive trend continues more students with disabilities will be receiving their academic instruction in general education environments (Arthaud, Aram, Breck, Doelling, & Bushrow, 2007), and there is a compelling need to improve the preparation of special education and general education teachers who will be required to address the pedagogical instruction of these students (Cole, Waldron, & Majd, 2004; Downing & Peckham-Hardin, 2007; Fuchs & Fuchs, 1994; Scheuermann, Webber, Boutot, & Goodwin, 2003; Scott, Vatale, & Masten, 1998; Scruggs & Mastropieri, 1996; Wigle & Wilcox, 2003). Furthermore, while educators often maintain low expectations for students with severe disabilities (Ysseldyke, 2001), one would anticipate that relevant training and field experience would modify teachers' positions on the learning outcomes for severely disabled students.

While the inclusion of students with moderate and severe disabilities in general education has received support from several professional organizations (see Carter & Hughes, 2006), inclusion of these students has also proven successful in social and educational areas (Fisher & Meyer, 2002; Giangreco & Putnam, 1991; Halvorsen & Sailor, 1990; Hunt & Goetz, 1997; Lipsky & Gartner, 1997; McDonnell, Mathot-Buckner, Thornson, & Fister, 2001; Snell, 1990). Therefore, integrating students with autism or other severe disabilities in inclusive general education classes is now the expected norm and no longer a consideration to ponder (Turnbull, Turnbull, & Wehmeyer, 2006).

Federal and state legislation consistently call for evidence-based intervention strategies to be used in teaching children with autism by *highly qualified* staff (No Child Left Behind; The Individuals with Disabilities Education Act, 2004; NYS Education Department, 2008). Consequently, one of the most problematic and stressful challenges facing public school officials today is to provide an appropriate education for the increasing number of students with ASD, alongside their non-disabled peers, in general education inclusive classrooms (Goodman & Williams, 2007), with well trained and prepared educators in evidence-based intervention strategies (Harrower & Dunlap, 2001; McCabe, 2008; Ryndak & Kennedy, 2000; Scheuermann et al., 2003; Simpson, 2004). How are beginning teachers who state that they lack adequate preparation to assume the day to day responsibilities of managing the classroom (Liston, Whitcomb, & Borko, 2006) to teach responsibly and effectively in inclusive settings?

If special educators or general educators lack appropriate training to work with children with ASD, then it cannot be expected that the learning outcomes of these children will show much improvement (Dymond & Gilson, 2007). Simultaneously, if these educators lack knowledge in evidence-based intervention methodologies as well as the necessary training to work with children diagnosed with autism, are they considered to be *highly qualified* in keeping with the spirit of NCLB? (Scheuermann et al., 2003). It is interesting to note that many principals believe they are unprepared to be effective special education leaders (Crockett, 2002; DiPaola & Walter-Thomas, 2003; Salisbury, 2006) because they lack the necessary coursework and field experience (DiPaola & Tschannen-Moran, 2003; Parker & Day, 1997).

Recent research supports the benefits of inclusive education for *all* students (Carter & Hughes, 2006; Downing & Peckham-Hardin, 2007; Foreman, Arthur-Kelly, Pascoe, & King, 2004). Positive attitudes, strong partnerships between parents and educators, use of appropriate interventions to address students' needs, and meaningful adaptations and modifications to the curriculum are considered important elements for inclusive programs to be effective (Cross, Traub, Hutter-Pishgahi, & Shelton, 2004). Yet, as schools become more inclusive, the demand for teachers to demonstrate the necessary skills and specific knowledge pertaining to evidence-based intervention strategies and methodologies has become of paramount importance (Downing & Peckham-Hardin, 2007; Goodman & Williams, 2007; McCabe, 2008). In addition, Salisbury (2006) reported that principals acknowledged the need for educators to become more competent and to receive additional training in order to be prepared to work with all categories of disabled students within public schools.

Therefore, if special educators as well as general educators do not receive the necessary training to meet the needs of children diagnosed with ASD or other severe disabilities in inclusive classrooms, the successful implementation of this concept remains dubious (Downing & Peckham-Hardin, 2007). Also, students with severe disabilities often manifest problem behaviors that interfere with their learning experiences (O'Neill, 2004). Addressing these challenging behaviors requires educators to receive proper training in positive behavioral interventions and supports (see Hawken & O'Neill, 2006).

While no valid empirical study to compare the efficacy of recognized methodologies has yet been undertaken (Marks, 2007), several decades of scientific evidence have proven the efficacy of methodologies grounded in applied behavior analysis (ABA) (e.g., Discreet Trial Training; Structured Teaching; Naturalistic Teaching) as the intervention to facilitate learning for children with ASD (Heflin & Alaimo, 2007). Additional studies that support the efficacy of ABA are those conducted by Adair & Schneider, 1993; Bay-Hinitz, Peterson, & Quilitch, 1994; Belfiore, Skinner, & Ferkis, 1995; Eikeseth, Smith, Jahr, & Eldevik, 2002; Sallows & Grauper, 2005; Schloss, Alper, Watkins, & Petrechko, 1996; and Smith, Groen, & Wynn, 2000. It is worthy to note that in spite of this support, Schloss & Smith (1998) reported that ABA methodologies are not utilized consistently by educational staff. One reason for this may be due to a lack of pedagogical training in teacher preparation programs. Furthermore, positive learning outcomes will vary based on individual students and the corresponding ABA methodologies employed during instruction (Forness, Kavale, Blum, & Lloyd, 1997).

Simpson (2004) stated that general education teachers must be provided with the necessary curricula and experiences to work with ASD children within inclusive classrooms. General education teachers themselves have reported that they lack adequate preparation to teach children with moderate to severe disabilities in inclusive settings (Downing & Peckham-Hardin, 2007; Downing, Spencer, & Cavallaro, 2004). In fact, Downing and Peckham-Hardin (2007) reported that 61% of general education teachers, although willing to co-teach this population of students in inclusive settings, advocated for proper training and the necessary tools to competently instruct children with moderate and severe disabilities. Having special education teachers collaborate with general education teachers is certainly helpful, but in numerous cases, special education teachers themselves are not adequately prepared to teach children with autism (Loiacono & Allen, 2008; National Research Council (NRC), 2001).

The NRC (2001) reported that most educators graduate from institutions of higher learning receiving minimal training in evidence-based research practices (i.e., methodologies grounded in ABA) for students diagnosed with autism. NRC's findings are supported by Deng and Manset (2000), and Simpson (2004). Interestingly, colleges and universities are beginning to carefully scrutinize and expand their course offerings in teacher preparation programs for special educators as well as general educators in an attempt to improve the preparation of prospective teachers in inclusive classrooms (Van Laarhoven, Munk, Lynch, Bosma, & Rouse, 2007). Meanwhile, public school officials are searching arduously for teachers who have expertise in ABA intervention strategies as the insurgence of young children with autism in inclusive school environments continues to grow (Lerman, Vorndran, Addison, & Kuhn, 2004).

This study examines the increasing numbers of students classified with autism as reported in the NYS Pupil with Disabilities Data System (PD-1/4) over five school years (2003-2007). The data reflects the increase in fourteen of the fifty-six K-12 LEAs, who responded to the survey, in the Southeastern region of NY. The PD-1/4 data is submitted annually by LEAs, to the State Education Department, to report the number of students with disabilities, by categories, who are provided special education services. Specifically, the data is used to support the position that children diagnosed with autism are increasing in numbers within integrated school environments over the specified five year period.

In addition, the same fourteen school districts within the Southeastern region of NY responded to the following four questions for school year 2008-2009:

- (a) How many inclusion classrooms does your LEA support?
- (b) Does your LEA include students classified with autism?
- (c) How many general education teachers, co-teaching in inclusive classrooms, completed undergraduate or graduate coursework grounded in ABA methodologies?
- (d) Did your LEA offer prior in-service training, in ABA methodologies, to the general education teachers who co-teach in inclusive settings?

Results:

The results of the PD-1/4 data from 2003 to 2007, for the fourteen LEAs who responded to the questionnaire in the Southeastern region of NY, are noted in Table 1. There is clear evidence that the number of students classified with autism increased dramatically in this region during the five year period. Collectively, the fourteen LEAs reported a total of 182 students classified with autism in 2003 and 365 in 2007. This represents a 100% increase in the number of students classified with autism from 2003 to 2007.

Table 1

Number of Children Classified with Autism			
LEAs	2003	2007	Percent Increase
LEA 1	0	10	1000
LEA 2	28	41	46
LEA 3	39	73	87
LEA 4	10	14	40
LEA 5	16	27	77.5
LEA 6	0	6	600
LEA 7	9	21	133
LEA 8	11	9	-18
LEA 9	32	46	44
LEA 10	29	86	196.5
LEA 11	0	1	100
LEA 12	8	17	112.5
LEA 13	0	0	0
LEA 14	0	14	1400
Totals	182	365	Average = 100

Note. From New York State Education Department (Vocational and Educational Services for Individuals with Disabilities). State and District Data Summaries of Special Education Data. (2003; 2007). Retrieved June 22, 2009, from

<http://www.vesid.nysed.gov/sedcar/SWD/swd2003/autism.htm> and
<http://www.vesid.nysed.gov/sedcar/SWD/swd2007/autism07.html>

As the authors examined the increase by district, they noted that twelve of the fourteen LEAs increased in numbers and that the increase ranged from 40% to 1400% during the referenced five year period. These numbers clearly support the research cited earlier which reported that the prevalence of autism has been increasing rapidly. It also should be noted that one LEA reported no change in numbers while one LEA reported an 18% drop in numbers from 2003 to 2007.

The fourteen LEAs represent typical suburbia in the Southeastern region of NY. One could speculate that the increase could be attributed to factors such as: (a) parents relocating to seek LEAs known for their excellence in education and recognized for pedagogical successes working with children classified with autism, (b) the availability of medical facilities and services required by these children, (c) the availability of advocacy groups as well as parent and sibling support groups, and (d) LEAs are recommending fewer children classified with autism to be placed out of district and now servicing these students in-district. While these factors offer an attempt to explain reasons for the increased number of children classified with autism within the fourteen LEAs, during the five year period examined, definitive etiological causes for this sustained dramatic increase remain elusive at best.

Nevertheless, while the fourteen LEAs reported an increase in the number of children classified with autism in the Southeastern region of NY from 2003 to 2007, the responses to the four questions posed in the questionnaire are reported in Table 2. It should be noted, however, that while all LEAs were promised total anonymity, fourteen of the fifty-six (25%) K-12 LEAs responded to the questionnaire which was sent via e-mail to each LEA three times. The authors conclude that the LEAs who did not respond to the questionnaires were in the midst of completing triennials, preparing for annual reviews, preparing and conducting weekly Committee of Special Education (CSE) meetings, as well as coping with their day to day responsibilities and, therefore, placed this request in their least important *to do* basket. Consequently, 25% of the LEAs completed and responded to the questionnaire as requested.

Table 2 clearly shows that 151 general education teachers co-taught in inclusive classrooms during school year 2008 – 2009. While eleven of the fourteen LEAs did include children classified with autism in their inclusive settings, three did not. Therefore, the actual number of general education teachers who co-taught in inclusive classrooms, that included children classified with autism, equals 135. Out of the 135 general educators only five were reported to have completed a course grounded in ABA principles either in college or graduate school. Hence, 130 or 96.2% of the general education teachers who co-taught in inclusive classrooms, that included children classified with autism, were not pedagogically trained in the principles grounded in ABA intervention methodologies by their respective institutions of higher education. Yet, general educators continue to be placed in co-teaching inclusive classrooms that include children with autism without the necessary training.

Table 2
Number of General Educators who Co-Teach in Inclusive Classrooms that Completed a Course in ABA Principles

LEAs	Number of Inclusion Classrooms	Students with Autism Included?	Completed a Course in ABA Principles	LEA Offered ABA In-service Training to General Educators
LEA 1	26	Yes	0	No
LEA 2	5	Yes	1	No
LEA 3	13	Yes	0	No
LEA 4	13	Yes	1	No
LEA 5	13	Yes	0	No
LEA 6	7	No	0	No
LEA 7	8	No	0	No
LEA 8	7	Yes	0	No
LEA 9	10	Yes	0	No
LEA 10	29	Yes	0	No
LEA 11	6	Yes	2	Yes
LEA 12	6	Yes	0	No
LEA 13	1	No	0	No
LEA 14	7	Yes	1	Yes

In 2008, Loiacono and Allen reported that 88.76% of special educators from sixteen LEAs in the Southeastern region of NY, who taught children classified with autism, had not received training in the principles grounded in ABA intervention methodologies. Therefore, based upon the research, these special educators would be considered unprepared, to teach children with autism, although all were certified by NYS to teach this population.

Furthermore, twelve out of the fourteen LEAs did not offer any prior in-service training in ABA intervention methodologies to the general educators who were to co-teach in inclusive classrooms that included children with autism. Only two LEAs responded affirmatively. In addition, in a follow-up question, the eleven LEAs that included children with autism in inclusive classrooms were asked if they would provide prior in-service training in the principles of ABA methodologies to future general educators who would co-teach in inclusive classrooms. Six of the eleven LEAs reported that they were undecided, while four reported yes, and one reported no. The collective responses seem to indicate that seven of the eleven LEAs need to scrutinize their professional planning and staff development training opportunities to further ensure the successful academic, social, and behavioral outcomes for children classified with autism who receive their education in inclusive settings.

Final Thoughts

It is of utmost importance that future empirical studies be conducted to compare the efficacy of recognized ABA intervention methodologies that support the learning needs of children with ASDs. It is important for all educators to know which methodologies should be utilized to best meet the unique educational needs of children classified with autism, especially those in inclusive classroom settings, to maximize their academic, social, and behavioral successes.

The authors conclude that the future success of educating children classified with autism in inclusive classrooms is contingent upon how well prepared and trained educators are in the pedagogies of ABA intervention methodologies as well as positive behavior support interventions. The findings in this study clearly report that educators are not well prepared to teach this population of students. Meeting individual state certification requirements does not suffice if in fact educators lack in their preparation, training, and coursework to teach children classified with autism (Scheuermann et al., 2003). This certainly is not in keeping with the *spirit* of the No Child Left Behind Act which unequivocally calls for *highly qualified* teachers to work with *all* children.

Based on the research, institutions of higher education should continue to examine their courses of study for *all* educators and revise their respective curricula to include ABA intervention methodologies which would ultimately benefit not only children classified with autism but other disability categories as well. ABA principles should transcend many of the courses and coursework preparing educators who will inevitably be teaching children classified with autism in their inclusive classrooms one day. Institutions of higher education should work in harmony with their respective State Education Departments who will ultimately determine the pedagogical criteria in securing a teaching certificate.

LEAs should continue to step forward, in their efforts, in providing educators with information about the principles grounded in ABA intervention strategies via staff development training opportunities. Knowing when and how to apply these interventions would boost teachers' levels of confidence in teaching children classified with autism in inclusive settings. These interventions would impact favorably the educational outcomes of children with other disability categories, as well as non-disabled children who are challenged in their pursuits of learning via traditional methods.

Lastly, and perhaps more importantly, LEAs should give serious consideration to offering parents of children classified with autism the opportunity to participate in ABA staff development training. If parents were afforded such opportunities there would appear to be: (a) less of a need for LEAs to provide home services since the parents would be trained (this would appear to be fiscally prudent), and (b) fewer litigation proceedings pertaining to this issue. As partners in their children's education *parents too should be included.*

As educators we are all committed and dedicated to improving students' outcomes, especially those of children classified with autism whose numbers continue to increase in the US, as well as globally, more rapidly than any other disability category. Teaching these children is a *privileged experience*. Therefore, let us be mindful of the words so eloquently shared by John Cotton Dana [*He/She*] *who dares to teach must never cease to learn.*

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