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Chapter

Autism in the Classroom: Educational Issues across the Lifespan

Yasamin Bolourian, Katherine K.M. Stavropoulos and Jan Blacher

Abstract

This chapter reviews educational strategies and legal policies impacting effective schooling for children, youth, and young adults. Emphasis is on the classroom manifestation of autism spectrum disorder (ASD), and how general education teachers can effectively facilitate learning. Within early school years, the importance of positive student-teacher relationships (STRs) in the face of challenging behaviors is discussed, including ways to build positive STRs. In middle and high school, social relationships serve as protective factors against mental health problems (e.g., depression, anxiety). Literature on this topic, including issues related to bullying, is presented. In postsecondary settings, young adults with ASD continue to have poor outcomes (e.g. loneliness, unemployment); strategies for helping adolescents transition to adulthood is discussed. While there are many other aspects to educational program appropriate for individuals with ASD (e.g., curriculum content), this chapter highlights recent issues that may be informative to a wide audience—school teachers and staff, researchers, and parents.

Keywords: education, classroom, school-aged, transition, lifespan, autism

1. Introduction

While much has been learned about how to educate children with autism spectrum disorder (ASD), and program successes are widely touted, children and youth with ASD are nonetheless at heightened risk for poor academic outcomes, including conflictual relationships with general education teachers [1] and more restrictive classroom placement [2]. Such outcomes are likely due to the presence of substantial social difficulties that are inherent to the ASD diagnosis [3], as well as behavioral difficulties that children with ASD often display [2, 4]. Indeed, it has been documented that individuals with ASD have significantly higher behavior problems than those with intellectual disability and those with typical development [5]. These heightened externalizing and internalizing problems evident in ASD, as well as poorer social skills, may also place these young students at risk for poor long-term school adjustment [1, 6].

As almost half (44%) of students with ASD fall in the typical range or above on cognitive ability [7], it is not uncommon for these students to be placed into general education classrooms [8]. Indeed, placement in general education has been shown

to be beneficial for many students with ASD [9] and is often preferred by parents, yet, general education teachers receive little specialized training on how to effectively manage students with ASD in the classroom. Moreover, many school districts are unprepared to accommodate such students, as evidenced by the number of legal disputes with families of students with ASD [10]. The purpose of this chapter is to discuss selected recent advances in research on autism in the classroom and educational issues in the context of ASD in the twenty-first century.

2. Educational issues

Issued in 2004, the *Individuals with Disabilities Education Improvement Act* (IDEA) mandated that educational programs for children with disabilities be delivered in the least restrictive environment (LRE). Inherent to the definition of LRE is the notion that a child with special needs should be educated in an environment containing same-aged typically developing peers. Many school districts have implemented a full-inclusion policy for young children with disabilities, including those receiving services for ASD [2], in order to comply with this mandate. These policies are not without challenges. Indeed, students with ASD have been documented to have the highest number of contested individualized education plans (IEPs) and educational rights litigation [10–14]. Nonetheless, some investigators have reported that the only disability group making progress towards spending more time in general education was students with ASD [15].

3. Placement

Students with ASD who are educated in a general education setting often experience greater success than students who are placed in special education classrooms [9]. Parents of children with ASD are generally in favor of inclusion. Leyser and Kirk [16] surveyed 437 parents of children with disabilities, including autism, and found that the following were related to a more positive parental disposition towards inclusion: (1) children with more mild disabilities, (2) parents with younger elementary school children, (3) parents with a college education, and (4) parents who did not know their child's educational placement. Moreover, White and colleagues [17] found that once the decision about placement had been determined, it rarely changed; students usually remained in that setting throughout their years of education. This further underscores the importance of helping schools and families make appropriate placement decisions in early school years; however, that decision can legally be revisited [18].

Research suggests that placement decisions for students with ASD may not necessarily be a function of student need. In order to examine the effects of school placement, Kurth and Mastergeorge [19] studied 15 students with ASD (12–15 years of age) who were enrolled in either an inclusive general education (n = 7) or special day class (n = 8). Although students enrolled in general education had a higher overall mean score in cognitive and adaptive functioning, this difference was not statistically significant, likely due to the small sample size.

Determinants of placement may also include beliefs and attitudes of school personnel [20, 21]. For example, in 2008, Horrocks and colleagues surveyed 571 principals in the Pennsylvania public schools. From a list of eleven principal characteristics (e.g., years in district, formal training, school level), there were two significant factors in predicting placement in regular education classrooms: the principals' experience working with students with autism and their beliefs that

children with ASD could be included in general education. Praisner [21] also found that school principals often based their placement decisions on their experiences and beliefs. Specifically, students with ASD and those with emotional disturbance were least likely to be recommended for placement in an inclusion classroom.

Other studies indicate that placement may be determined by certain child characteristics. For example, Lauderdale-Littin, Howell, and Blacher [22] investigated differences between the characteristics of 56 children with ASD placed in public and non-public school settings. Logistic regression analyses indicated that child age, family income, and social skills were predictive of educational placement, such that older children from higher income households and who have lower levels of social skills were more likely to be placed in non-public, more restrictive school settings. The more obvious predictor of school placement is likely IQ or cognitive functioning; Harris and Handleman [23] reported that higher IQ and younger age at intake to an early intervention program were predictive of regular class placement upon the transition to school.

4. Role of the family at school

An understanding of family impact is a crucial foundation for general and special education teachers of children with ASD to build a strong partnership. Such alliances between parents and teachers are beneficial to children with ASD [24]. The quality of parent-teacher relationships appears to be an important force in the early school experiences of children with ASD [25, 26] and in later academic skill acquisition [27]. For example, in a study of 121 parents of young children with ASD [26], parents who had positive relationships with teachers had formed more positive expectations for the school year. However, it is important to note that when child behavior problems were entered into analyses, they uniquely predicted parent expectations. Moreover, parents with strong relationships with their child's teacher and who perceived the teacher to be warm and positive towards their child were less likely to end up in litigation [14, 28].

Disagreements regarding Individualized Education Plan (IEP) outcomes often contribute to the strain between parents and teachers. In a study of 142 parents of young children (ages 4–8 years) with ASD, a meaningful proportion of parents reported dissatisfaction with the IEP process [29]. Specifically, 41% of parents reported only some, or no, agreement between the IEP document and the services received. Parents' relationship with the teacher and school involvement, as reported by both parents and teachers, were positively associated with IEP satisfaction. Notably, family income and financial resources were also significantly related to IEP satisfaction, such that more resourced families tended to be more satisfied. Nevertheless, these findings highlight the importance of working with parents to increase consistency across the home and school context [30, 31].

5. Student-teacher relationships in early school years

The transition to early schooling is a crucial milestone for all children, one that can be particularly challenging for young children with ASD. The quality of the student-teacher relationship (STR) is seen as crucial to successful academic outcomes [32, 33] and a strong predictor of long-term behaviors [34–36]. For example, close, supportive relationships with teachers are associated with stronger social skills [37] and higher peer acceptance [38] in typically developing young children. However, on average, children with ASD experience poor relationships with their teachers as evidence by low closeness and high conflict [35, 39].

In order to examine the relations among social impairments, behavior problems, and STRs, Blacher and colleagues [1] conducted a comparison study of children (*M* age of 8 years) with ASD (n = 36), intellectual disability (ID; n = 38), and typical development (TD; n = 91). The measure used to assess STRs (*Student-Teacher Relationship Scale*; [40]) included domains of closeness, conflict, and dependency. Results revealed that students with ASD scored significantly lower on closeness and significantly higher on conflict than the ID or TD groups. Scores of dependency were statistically similar for both the ASD and ID groups but higher than that for the TD group. Moreover, closeness was accounted for mainly by social skills, while conflict was accounted for by behavior problems.

Currently, there are approximately 1,308,100 paraprofessionals or teacher aides employed; this number is expected to grow at the average rate of 8% by 2026 [41, 42]. The projected increase in paraprofessionals can be attributed to the demand of inclusive education, which may perpetuate an overreliance on their role in the school system [43]. Therefore, there is an immense need to support paraprofessionals in the instruction and behavior management of students with disabilities in inclusive environments [41]. Moreover, a heavy reliance on paraprofessionals creates fewer opportunities for teachers to develop close and supportive relationships with these students.

6. Middle and high school

Peer relationships seem to be the most salient issue for many middle and high school students with ASD. The lack of social skills that persists throughout adolescence has a negative impact on friendships and peer interactions [44]. In clinical populations, improvements in the social skills of children and adolescents with ASD are modest over time. Constantino and colleagues [45] examined the development of social skills at child ages 3 and 18 in a sample of 95 males without ASD and 85 males with pervasive developmental disorder. Results revealed that for the sample with clinical diagnoses, parent and teacher reports on the *Social Responsiveness Scale* (SRS; [46]) were correlated at both time points. While improvements were seen on the total SRS scores over time, these only reached significance in parent reports, leading the authors to conclude that social improvements over time were subtle or perhaps not obviously manifested in the school setting.

Enduring social difficulties have been found to lead to teasing and bullying by peers, more so for youth with ASD than their typically developing peers [47, 48]. Through interviews with early adolescents (age 13) with ASD, Zeedyk and colleagues [48] found that youth with ASD were victimized more frequently than youth with ID or TD. Above and beyond disability status, higher internalizing behavior problems and peer conflict were significant predictors of victimization. In 2018, Tipton-Fisler and colleagues did a follow-up study with the same youth at age 15 to explore how experiences of bullying and victimization changed for children with TD, ID, and ASD over time [47]. Consistent with Zeedyk et al., [48], they found that adolescents with ASD were bullied more frequently than those with ID or TD. Further, higher levels of internalizing behavior problems at age 13 related to higher levels of bullying at age 15.

These findings are consistent with previous research on internalizing behaviors in youth with ASD and victimization. Cappadocia and colleagues [49] found that internalizing behavior problems predicted victimization in a sample of youth with ASD. Whitehouse and colleagues [50] found that friendship conflicts were a significant predictor of depression in adolescents with ASD. Taken together, this body of research suggests a relationship between internalizing problems (e.g. depression,

anxiety) and victimization and/or peer conflicts in youth with ASD. This work also underscores the importance of empirically supported interventions for youth with ASD who display internalizing behaviors. Such interventions could help youth make and keep friends, and provide information about how to deal with bullying. One example of such an intervention is the UCLA PEERS Program, which has a manualized curriculum designed to help youth with ASD make and keep friends, handle conflicts with friends, and bullying [51].

It is interesting that by middle or high school, students with ASD spend most of their time in a classroom with typically developing students, but interacting with other students with disabilities or with a paraprofessional, leaving few opportunities for socialization. Feldman and colleagues [52] demonstrated this in a study of high school youth. When they calculated the percent of time that students with ASD were present in the classroom, they found that, on average, that students with ASD were present for about 81% of a class period. When in class, students were in proximity to their peers in general education classrooms only for about a third (38%) of a class period.

7. Postsecondary school years

Unfortunately, difficulties for youth with ASD continue into young adulthood. According to a 2012 study, nearly 80% of young adults with ASD lived at home, 40% did not have contact with friends, and more than half (52%) did not have employment or postsecondary training 1–2 years after high school [53]. One possible reason for these dismal outcomes is the significant "service cliff" which occurs once young adults transition to independence. This is particularly notable after public school services end, for many as late as age 22 [18]. Thus, families of youth with ASD should prepare for the transition to postsecondary environments as early as possible. Geller and Greenberg [54] suggest that by age 14, planning should begin, and focus on areas of independence, including self-determination, functional skills, and social-communication skills needed for postsecondary life, especially for those young adults who have concomitant intellectual disability.

Approximately half of students with ASD are cognitively high functioning, with IQs in the typically developing range [7]; for them, attending college is a realistic goal. Predictors of college participation for young adults with ASD include student, family, and transition planning factors, such as attendance in a regular high school; strong academic performance in high school higher household income; parental expectations for attending college; post-secondary goals identified through transition planning; and student participation in transition planning [55].

Youth with ASD have at least two pathways to post-secondary education: [1] attending a 2-year school (community or junior college, depending on the state), or [2] attending a 4-year college or institution. In their review, Zeedyk, Tipton, and Blacher [56] highlighted some of the main benefits of 2- and 4-year institutions specifically for students with ASD. Two-year schools may provide more individualized supports, offer vocational programs, be more likely to be populated by familiar peers from high school, and provide weekly homework assignments similar to high school. On the other hand, 4-year schools usually offer more generic support services, a variety of programs, a more diverse curriculum, more majors to choose from, and sometimes a larger campus community.

Using the National Longitudinal Transition Study-2, a nationally representative dataset on young adults across 10 years, Sanford et al. [57] found that more young adults with ASD attended 2-year colleges than 4-year colleges (32 versus 17%). Moreover, the percentages of college attendance were statistically significantly

lower for students with ASD than students with other types of disabilities. Lastly, only 39% of students with ASD graduated college, compared to 41% of students with disabilities in general and 52% of students from the typical population.

Given the dismal college attendance and completion rates, researchers have investigated some of the challenges students with ASD face in postsecondary environments that may impede their success in college. These factors include social difficulties which are related to the characteristics of ASD (e.g., [58]) and inhibit academic success. For example, students may have difficulty adapting to changing school schedules, to the complex social environment associated with college life, and to independent living responsibilities. Unfortunately, supports available in the college setting that focus on academic needs do not address the unique needs of young adults with ASD. Rather, they are generic and largely designed for students with learning disabilities. For example, typical academic accommodations in postsecondary settings may include extended test time, distraction free testing, flexible due dates for assignments, breaks during class, the use of technology in the classroom, note takers, and possibly optional group activities [56, 59].

However, the range of needs of young adults with ASD extend beyond academics critical to postsecondary success [60, 61]. Aside from social concerns, mental health issues are commonly found in ASD populations. Among college students, about 70–90% have reported symptoms of anxiety and/or depression. In a recent study by Jackson and colleagues [62], approximately 18% of students expressed wanting to attempt suicide in the future. Other associated difficulties in ASD include a lack of daily living skills, organization and planning, and flexibility [63]. These areas may be more stressful to cope with in the college environment, as students have less structure in their routines and less support from parents after high school. Some students with ASD also struggle with inappropriate classroom behavior in college (e.g., frequently raising one's hand, refusing to work in groups with classmates, calling out inappropriately).

Many of the challenges noted above are similar to other "invisible disorders," primarily attention-deficit/hyperactivity disorder (ADHD; [60, 64, 65]). For this reason, Bolourian and colleagues [60] conducted a qualitative study of 13 young adults with ASD and 18 students with ADHD in 4-year universities located in Southern California, to determine if young adults with ASD had challenges specific to their disorder. From coded in-depth interviews, nine themes emerged, highlighting the similar deficits between the two disorders. The authors also calculated passage frequencies to determine and compare how often these themes were discussed by members of each groups. While most themes did not statistically significantly differ, the theme of *Negative Peer Interactions* was unique to students with ASD, indicating that university staff need to do more to expand services for college students with ASD. In particular, supports and services to foster more positive social interactions on campus would be helpful, whether in the form of social skills groups conducted on campus, peer volunteers, or even group counseling sessions offered by disabilities services on campus.

7.1 Student-faculty relationships

Student-faculty relationships may also be impaired for college students with ASD. While student-teacher relationships are more frequently examined in early school years, poor relationship quality has been reported through secondary school for students without disabilities, particularly in relation to academic motivation [66, 67]. Thus, it is plausible that the quality of these relationships, even for youth with ASD, can endure into postsecondary environments.

Not surprisingly, many young adults on the spectrum enter postsecondary education with a passion for a particular subject area, which may inspire the selection of their major. Faculty awareness of these special areas of interest may help them to work this interest into course projects or requirements, thereby increasing student interest or focus. Of course, more interest can lead to better student performance, leading to higher grades, the likelihood of college graduation, and future employment. Thus, there is a rationale for faculty to be aware of their students with ASD and to foster the same type of academic relationship with them that they have with their other students.

There are many things faculty need to know in order to appropriately and comfortably teach and interact with students on the autism spectrum. In a survey of 132 faculty [68], a little over half of professors did not include a statement about disability services in their syllabus (55%), nor did they make a statement about services at the start of the quarter (60%). In terms of their beliefs about students with autism, 47% expected students to interact with peers in the classroom and 78% agreed that they would consider allowing students to work in their lab or on their research team. With regard to student disability services, 12% did not understand the role of disability service offices on campus, and 46% agreed that students with ASD should disclose their disability to disability services. These findings emphasize the importance of educating university faculty on ASD and providing resources on how to support students with ASD in their classrooms.

8. Resources available to educators

There are a number of resources available to teachers of children with ASD, particularly those at the early childhood or elementary levels. Many of these focus on intervention methods, and although classroom teachers may not be responsible for their implementation, understanding the evidence-base is useful as the greatest gains are made during the early school year [69]. Behavioral therapy continues to be supported in the literature as an effective intervention for individuals with ASD (e.g., [70, 71]).

8.1 Resources for K-12 and beyond

In 2014, the National Professional Development Center on Autism Spectrum Disorders (NPDC) and the Institute of Education Sciences funded a project to identify evidence-based practices (EBP) for individuals with ASD, from birth to 22 years [72]. This rigorous review yielded 27 practices, many of which are based on behavioral techniques, including reinforcement, naturalistic approaches, and self-management. While an update of this review is in progress, the NPDC created a free online curriculum that describes the key components of each identified EBP and provides a step-by-step approach to implementing these practices (i.e., Autism Focused Intervention Resources and Modules [AFIRM]; retrievable from https://afirm.fpg.unc.edu).

From the Ohio Center for Autism and Low-Incidence Disabilities, the Autism Internet Modules (AIM) is another free online training program (retrievable from www.autisminternetmodules.org). One way in which AIM differs from AFIRM is by its organization of material, centered around autism in the home, in the classroom, on the job, and in the community. The modules provide static content and interactive videos to highlight various evidence-based strategies that may be used across these settings.

8.2 Transitioning to the university

As research on the transition to postsecondary settings receives increasing attention, interventions aimed at supporting youth during these periods are

being examined for their efficacy. For example, Lei and colleagues [73] implemented a 3-day, overnight summer school program in the UK for youth with ASD, ages 16 or older, who are preparing for university life. The curriculum included lessons on 'work' (i.e., experiencing a typical lecture, appropriate socialization between students and faculty/staff, and disclosure of diagnosis), 'rest' (i.e., stress reduction, management of anxiety, and the importance of physical wellbeing), and 'play' (i.e., on-campus clubs and societies, social outings, and informal social experiences). The program was facilitated by staff from the university's psychology department, disability office, and career services office; one session was facilitated by a current or recently graduated student with ASD. The program also offered the support of a 'student ambassador' or current typically-developing university student trained to provide broader support in inclusion activities. Findings from a satisfaction survey of 125 participating students revealed promising results. For example, pre- and post-program data showed significant changes on endorsed concerns associated with the transition to university, including in the areas of socialization, independence, and academic functioning. Moreover, on average, participants rated the program to be very enjoyable and helpful, and viewed going to university somewhat positively. With regard to the program components, students found psychoeducation (14.6%) and information on clubs and societies (11.5%) to be most helpful. With regard to their future at the university, students were most enthusiastic in their response about looking forward to new social opportunities (55.7%).

Mentoring has also been examined in the context of social-emotional supports for students with ASD in postsecondary environments. Lucas and James [74] tested the effect of a mentoring program for three undergraduate students with ASD and two with mental health conditions. After the first term, mentees with ASD expressed that mentors had been helpful for exam support, maintenance and development of social relationships, and promotion of positive well-being, while mentees with mental health issues did not find mentors as helpful in these areas. Other identified suggestions for social-emotional support include disability support groups, access to counseling, and private living spaces. However, isolation in private living spaces may also contribute to mental health issues. Thus, individualizing these supports is highly recommended and may consist of coupling accommodations (e.g., private living space and participation in mentorship program; [75]).

9. Conclusion: looking forward

Existing preparation programs for school administrators provide little knowledge considered necessary to understand the behaviors of students with ASD and implement inclusion programs [20, 76]. Teachers at the K-12 levels show wide variability in their ASD-specific knowledge and self-efficacy, with large numbers reporting a lack of training or readiness to teach students with ASD [72, 77]. However, the high incidence of ASD indicates that educators across the nation will inevitably encounter a student with ASD [78], underscoring the need to prepare special educators in evidence-based approaches that enhance the academic and social learning opportunities for these children [79]. With regard to the professional development of *university faculty* on ASD, research is still limited as to how to best help support faculty in accommodating students with ASD in their classrooms. It is clear that the development of a faculty training may be beneficial, as the volume of information available for how to best support these students may be overwhelming for professors to sift through themselves.

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Conflict of interest

Yasamin Bolourian, Katherine Stavropoulos, and Jan Blacher declare that they have no conflict of interest.

Author details

Yasamin Bolourian, Katherine K.M. Stavropoulos and Jan Blacher*
University of California, Riverside, CA, United States

*Address all correspondence to: jan.blacher@ucr.edu

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