



## An Examination of In-Service Teacher Attitudes toward Students with Autism Spectrum Disorder: Implications for Professional Practice

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Teacher attitude is a moderating variable that can influence the successful implementation of effective interventions within the inclusive classroom. The present study examined in-service teachers' attitudes toward students with and without Autism Spectrum Disorder (ASD) in the U.S. A total of 234 pre-Kindergarten to Grade 12 teachers from public and charter schools in a metropolitan city participated in a survey. Participants first read two scenarios, one featuring a student displaying autistic symptoms and another featuring a typical student. Subsequently, they indicated their attitudes toward each student. Results revealed that teachers perceive students with ASD as more different from typical students and teachers are more likely to dislike and avoid students with ASD. Standard regression analysis demonstrated that being female, teaching at the elementary level, and holding special education certification are predictors of positive teacher attitudes toward students with ASD. Implications of these findings for professional practice are discussed.

*Keywords:* Teacher attitudes, autism, special education, inclusion

Autism Spectrum Disorder (ASD) is the fastest growing developmental disability in the U. S. with an approximate 290% increase in its prevalence rate between 1997 and 2008 (Boyle et al., 2011). Parent-reported data on the prevalence of ASD among school-age children (ages 6-17 years) indicated a significantly higher rate of 1 in 50 births in 2011-2012, compared to 1 in 86 births in 2007 (Blumberg et al., 2013). The Centers for Disease Control and Prevention (2014) also estimated that 1 in 68

children has ASD. As the number of school-age children diagnosed with ASD increases drastically, the inclusion of these children in the regular education classroom has become a major education concern. The Education for All Handicapped Children Act adopted in 1975, renamed as the Individuals with Disabilities Education Act (IDEA, 1990) and again reauthorized as the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA, 2004), mandated schools to provide a free and appropriate

public education to all students with disabilities in the least restrictive environment to the maximum extent appropriate. The implication is that students with disabilities, including those with ASD, should be placed in the general classroom unless “they cannot be satisfactorily educated with the use of supplementary aides and services” (Hosp & Reschy, 2003, p. 68). Research has demonstrated many benefits of inclusion for students with ASD especially positive social interactions and peer modeling (von der Embse, Brown, & Fortain, 2011).

However, including students with ASD in the regular classroom can be challenging because ASD is characterized by symptoms in two domains: social communication (e.g., problems adapting behavior to fit various social contexts, poor eye contact, and abnormal facial expression) and behaviors and interests (e.g., unusual interests and stereotypical body movements) (American Psychiatric Association, 2013; Hall, 2012). Behaviors in both domains play an important role in impacting the daily functioning of students with ASD, especially in their interactions with peers, teachers, and other personnel within a school setting.

#### **Importance of Teacher Attitudes in the Classroom**

To increase the feasibility of including students with ASD within the regular education classroom, it is important to determine effective interventions that help mitigate the negative impact of the disorder. In addition, examining moderating variables is also crucial because they may influence the implementation of the interventions, thus impacting their effectiveness. Teacher attitude is a moderating variable that can influence the successful execution of autism interventions within the classroom (McGregor & Campbell, 2001). Through their attitudes, teachers may display acceptance or disapproval as well as enthusiasm or rejection, which may contribute to the success or failure of inclusion and autism interventions within the regular classroom (Horrocks, White, & Roberts, 2008). This is especially true in light of the fact that in the past decade the meaning of inclusion has been expanded beyond advocating for just the presence (e.g., being educated in the regular classroom) to also include the participation (e.g., being provided with high quality educational experience), acceptance (e.g., being respected by teachers and peers), and achievement (e.g., being successful across the curriculum including academic, social, and emotional areas) of all students in the school system (Humphrey, 2008).

#### **Purpose of Study**

Therefore, the purpose of this study was two-fold: (a) to investigate in-service teachers’ attitudes towards students with ASD; and (b) to examine the implications of the attitudes on professional practice. The following literature review defines teacher attitudes and discusses existing studies on teacher attitudes related to

students with ASD. The rationale and research questions for this study are then presented.

#### **Definition of Teacher Attitude**

According to Triandis (1971), attitudes are defined as a person’s cognitive and emotional evaluations and behavioral intentions toward an object or information. The object of an attitude can be individuals, organizations, values, and so forth. The cognitive component refers to the individual’s beliefs as well as information and knowledge about a person, an object, or idea. The affective component represents the individual’s emotional reactions to the object or person (e.g., exposure to students with ASD), and the behavioral component deals with how the individual acts or intends to act toward the person or object. In theory, a person’s attitude affects cognitive, emotional, and behavioral reactions toward others, and therefore a teacher’s attitude toward a student with ASD can have a tremendous impact on their interactions in the classroom.

#### **Teacher Attitudes Outside the U.S.**

A search of peer reviewed literature produced only a small number of studies on in-service teachers’ attitudes toward educating students with ASD. In addition, most of these studies were conducted in countries other than the U.S. For example, McGregor and Campbell (2001) surveyed 49 mainstream school teachers and 23 specialists in Scotland about their attitudes toward integrating students with ASD into mainstream schools. Their findings indicated that teachers were concerned about the negative impact on typical students such as less adult attention and class disruption resulting from integrating students with ASD into the mainstream classroom. As a result, only 47% specialists and 35% mainstream school teachers supported full integration of students with ASD.

In another similar study, Mavropoulou and Padeliadu (2000) surveyed 35 regular education teachers and 29 special education teachers in Greece about their perception of students with ASD. Only 55% of regular education teachers and 37% of special education teachers held positive attitudes toward the idea of integration. Emam and Farrell (2009) interviewed teachers, teaching assistants, and the special needs coordinator of 17 students with ASD placed in the regular classroom setting of mainstream schools in the United Kingdom. Results indicated that interactions between teachers and students with ASD were negatively impacted by tensions caused by ASD-related behaviors such as poor social and emotional understanding.

Ashburner, Zivaini, and Rodger (2010) examined how a small group of teachers (specific number not provided) in Australia perceived the emotional, behavioral, and academic performance of their 28 students with ASD in mainstream classrooms. Compared to typical counterparts, students with ASD exhibited a significantly higher level of emotional and behavioral

problems. Furthermore, over 50% of the students with ASD were perceived as under-achieving academically, compared to only 8% of typical students.

In contrast to the above studies, Al-Shammari (2006) interviewed two special education teachers in Kuwait and concluded that both participants demonstrated positive attitudes toward educating students with ASD. This positivism was echoed by 69 special education teachers in Spain who were interviewed about their perception of teaching children with ASD (Rodriguez, Saldaña, & Moreno, 2012). Results indicated that the 69 teachers were positive toward teaching these students and optimistic in their ability to influence the development of these students. Another study was reported by Humphrey and Symes (2013) who surveyed 53 high school personnel (32 teachers and 21 administrators) in the United Kingdom about their attitudes, experience, and knowledge in relation to the inclusive education of students with ASD in mainstream high schools. They concluded that participants overall indicated positive attitudes toward inclusion. In addition, compared to teachers, administrators reported higher self-efficacy in working with students with ASD and handling their behaviors.

#### **Teacher Attitudes Within the U. S.**

All studies conducted in the U.S. indicated that teachers are positive toward educating students with ASD. Surveying 12 general education teachers from second and third grade inclusive classrooms, Robertson, Chamberlain, and Kasari (2003) reported that teachers perceived their relationships with their students with ASD as relatively positive. Cassady (2011) surveyed 25 general education teachers and compared their willingness to include a student with ASD to their willingness to include a student with emotional behavior disorder (EBD) in their class. Results suggested that participants were more positive toward including a student with ASD than including a student with EBD. In a larger scale study in Georgia, 123 teachers (52 general education teachers, 71 special education teachers) participated in a survey conducted by Segall and Campbell (2012). Findings indicated that while almost all teachers (92%) held positive attitudes toward inclusion of students with ASD, special education teachers' attitudes were significantly more positive than those of general education teachers.

#### **Rationale**

In sum, existing studies on teacher attitudes toward including students with ASD in the general classroom yielded inconsistent findings. Some studies suggested positive teacher attitudes while several other studies reported teacher concerns due to the social and behavioral problems associated with ASD. The attitudinal difference between teachers with and without special education training still remains inconclusive because only one study (i.e., Segall & Campbell, 2012) compared the two groups using inferential statistics. Additionally, apart from Segall and Campbell's (2012)

study, all of the above studies employed relatively small sample sizes (e.g., Al-Shammari, 2006; Ashburner et al., 2010; Cassady, 2011; Emam & Farrell, 2009; Humphrey & Symes, 2013; Robertson et al., 2003).

In addition, the focus of most aforementioned studies was not on teacher attitudes toward students with ASD, but their attitudes toward the *inclusion* of students with ASD. Drawing a similar conclusion in their literature review, Park and Chitiyo (2011) surveyed 127 teachers from a small Midwest town in the U.S. using the Autism Attitude Scale for Teachers (AAST). Results showed that teachers overall had positive attitudes toward students with ASD. In addition, young, female elementary teachers were more likely to hold positive attitudes towards children with ASD. No significant difference in attitude existed between general education teachers and special education teachers. However, Park and Chitiyo's (2011) study had the following limitations:

- The subjects were all from a small town community.
- Only 17% (n = 22) participants were special education teachers.
- Only 12 % (n = 15) participants were male.
- No comparison was made between a teacher's attitude toward a typical student and his or her attitude toward a student with ASD.

It is crucial to address the final limitation because when teachers' cognitive, emotional and behavioral responses to students with ASD are different from their responses toward typical students, it may lead to not only different expectations but also the effect of self-fulfilling prophecies about student performance (de Boer, Bosker, & van der Werf, 2010).

#### **Research Questions**

In order to extend this line of research, this present study surveyed metropolitan in-service teachers about their attitudes toward a student with ASD in the U.S. The sample size was relatively larger compared to existing studies on teacher attitudes related to students with ASD. The research questions were:

1. How do teacher attitudes toward a student with ASD compare with teacher attitudes toward a typical student?
2. How do attitudes toward a student with ASD differ between general education teachers and special education teachers?
3. What factors (i.e., education level, special education certification, number of years of teaching experience, gender, age, income level, and grade level teaching) may predict teacher attitudes toward a student with ASD?

#### **Method**

##### **Participants**

A total of 234 pre-Kindergarten to Grade 12 teachers from both public and charter schools located in a metropolitan area were recruited through convenience

sampling. Forty-one percent ( $n = 92$ ) of the participants taught Pre-Kindergarten to Grade 5. With a mean age of 37, participants possessed 11 years of teaching experience on average. Approximately 82% ( $n = 193$ ) of participants were Caucasian and 76% ( $n = 177$ ) female. In addition, 47% ( $n = 107$ ) had an annual income of \$50,000 or more, 58% ( $n = 136$ ) held at least a Master's degree, and 32% ( $n = 74$ ) held a special education teaching certificate. Based on the 2008 American Community Survey (Select Greater Philadelphia, n.d.), both the age and race of participants in general reflected the demographics of the metropolitan area selected by the study (i.e., Age = 38, Caucasian = 72%).

### Research Design

A survey was conducted to collect information about teachers' attitudes toward a student with autistic symptoms and toward a typical student. Participants were asked to complete a self-administered questionnaire.

### Instruments

Participants in the study completed a demographic questionnaire on age, educational level, ethnicity, annual income level, gender, teaching certifications, and number of years of teaching experience. To indicate their attitudes toward a student with ASD, participants completed a minimally revised instrument published in Harnum, Duffy, and Ferguson's (2007) study. The instrument presented two scenarios to the participants. The first scenario described the behaviors of a student with ASD such as playing alone, not interacting with other students, having flat facial expressions, repeating words or phrases over and over, obsessing with a silver ball, and rocking his body in a chair. The second scenario described the behaviors of a typical student such as listening to and respecting people in class, sharing things with classmates, and talking and engaging in different activities with other students. Participants subsequently read seven statements about the student in each scenario and indicated agreement or disagreement with each statement using a five-point Likert scale (1 = strongly agree, 3 = don't know, 5 = strongly disagree). Some of the statements included: "This child makes you afraid," "I would feel comfortable around this child," and "I would not mind this child being in my classroom." Since the original statements were designed for adults and peers in a general setting, two statements were reworded to fit the *classroom* setting. "This child is as smart as you" was revised to "This child is as smart as other students." Another statement "The child is different from you" was revised to "The child is different from other students." The total rating score for the student in each scenario was calculated after applying reverse scoring as appropriate to some of the statements. A higher score represented that the teacher perceived a student as more different from others and that the teacher was more likely to dislike and avoid the student in the scenario.

Harnum et al.'s (2007) instrument was used in this study for several reasons:

- There was no existing self-administered and standardized instrument that could measure and compare a teacher's attitudes toward a typical child with the same teacher's attitudes toward a child with ASD.
- The seven statements in the instrument covered the cognitive, affective and behavioral components of attitude defined by Triandis (1971).
- The instrument's brevity and precision facilitated ease of use in school settings and motivated teachers to participate.
- The instrument was reviewed and published in a prestigious journal and had established reasonable content validity.
- The instrument had been adapted by other researchers to study attitudes toward students with ASD in school settings (e.g., Nevill & White, 2011).

Additionally, the Cronbach alpha determined from the data collected from the 234 participants in this study was .77. This established the internal consistency of the revised instrument.

### Procedure

Participants were recruited through convenience sampling. This sampling method was selected due to its greater cost and time effectiveness (Muijs, 2010). A survey packet containing the instrument was either handed to the participants or emailed to them. The packet included the questionnaire along with a cover letter explaining the purpose and voluntary and anonymous nature of the study. Graduate students trained in research administered and collected the questionnaires. Data analysis was then conducted via computerized statistical software.

### Results

Based on a 5-point Likert scale (in which higher scores represented more negative attitudes), the mean teacher scores for attitudes toward the student with ASD and toward the typical student were 2.44 (SD = 0.56) and 1.87 (SD = 0.42) respectively, indicating positive teacher attitudes in both cases. However, a paired t-test showed that teacher attitudes were comparatively more negative toward the student with ASD than toward the typical student ( $t = 15.70, p = 0.00$ ). This indicated that not only did teachers perceive the student with ASD as more different from typical students, but they were also more likely to dislike and avoid the student with ASD.

An unpaired t-test was conducted to determine if there was an attitudinal difference between teachers with special education certification and those without. Teachers without special education certification were significantly more negative toward the student with ASD

(mean = 2.59, SD = 0.57) than teachers certified in special education (mean = 2.14, SD = 0.47;  $t = 6.43, p = 0.00$ ).

A forward regression analysis was also conducted to examine factors (i.e., education level, income level, gender, age, number of years of teaching experience, special education certification, and grade level teaching) that may predict a teacher's attitudes toward a student with ASD. Results in Table 1 show that being female ( $t = -2.63, p = 0.01$ ), holding special education certification ( $t = -4.83, p = 0.00$ ), and teaching at the elementary grade level ( $t = 2.16, p = 0.03$ ) were significant predictors of a teacher's less likelihood to dislike and avoid a student with ASD and to perceive the student as different from others. The full regression was significant and explained 22% of the variance of attitudes toward a student with ASD ( $R^2 = 0.22, p = 0.00$ ).

Table 1  
*Prediction of Teacher Attitudes toward a Student with ASD*

Variable	B	SE B	$\beta$	t	p-Value
Education Level	.07	0.04	.17	1.88	.06
Special Education (1=Non-Special Education 2=Special Education)	-.39	0.08	-.32	-4.83	.00
Income Level	-.06	0.04	-.15	-1.62	.11
Gender (1=Male, 2=Female)	-.22	0.08	-.17	-2.63	.01
Age	.00	0.01	.05	.47	.64
Year of Teaching	-.00	0.01	-.05	-.48	.63
Grade Level	.15	0.07	.15	2.16	.03

Note:  $R^2 = .22$  ( $p < 0.01$ )

### Discussion

This study revealed that despite in-service teachers' positive attitudes toward both students with ASD and typical students, their attitudes toward students with ASD are significantly more negative than toward typical students. Several factors may underlie these attitudes. One possible factor is the higher levels of behavioral and emotional difficulties in school exhibited by students with ASD compared to their typically developing peers (Ashburner et al., 2010). Another factor is the tension that may arise in the classroom from autistic manifestations such as difficulties with social and emotional understanding, thereby impacting teacher-student interactions and teachers' views of supports needed for effective classroom management (Emam & Farrell, 2009; Robertson et al., 2003). Thus, teacher attitudes toward children with ASD may reflect the very

real challenges teachers face in instructing and interacting with these students. The presence of such challenges have been confirmed by the findings of Lindsay, Proulx, Thomson, and Scott's (2013) study in which 13 teachers were interviewed about challenges they encountered in educating children with ASD in the mainstream classroom. The teachers reported a list of challenges including understanding and managing these students' behavior and handling various types of sociocultural barriers in inclusion (e.g., insufficient training and resources, bureaucratic school policy, and misunderstandings from other teachers, students, and parents).

This study also showed the presence of three predictors of teacher attitudes toward students with ASD. The first predictor is certification in special education. In contrast to the finding reported by Park and Chitiyo (2011), this study, with its much larger sample of teachers with special education certification ( $n = 74$ ), demonstrated that teachers certified in special education show significantly more positive attitudes toward a student with ASD than general education teachers do. Results from Segall and Campbell's (2012) study also demonstrated the correlation between training in special education and positive teacher attitudes toward the inclusion of students with ASD. Similarly, even principals with formal special education training were found to be more likely to recommend inclusive placements for children with ASD than principals without such training (Horrocks et al., 2008). One possible explanation is that special education training enhances a teacher's understanding, confidence, experience, skills, and resources to work with students with ASD, which all ultimately promote more positive attitudes toward the population (Leblanc, Richardson, & Burns, 2009; Rodríguez et al., 2012).

Teacher gender is the second predictor of a teacher's attitudes toward a student with ASD. The present study confirmed Park and Chitiyo's (2011) finding that female teachers are more likely to exhibit positive attitudes toward a student with ASD. As Park and Chitiyo (2011) posited, socialization differences in empathy may prompt females to display more positive attitudes toward students with ASD. The role of gender in teachers' attitudes toward students with ASD is a critical issue that needs further research especially in light of the fact that the majority of students with ASD are males.

The final predictor of teacher attitudes toward a student with ASD relates to whether the teacher is teaching at the elementary level or secondary level (i.e., middle and high school). Results of the current study showed that teachers in secondary schools are more likely to have negative attitudes toward students with ASD. This finding corroborates with the result reported by Park and Chitiyo (2011). As Park and Chitiyo (2011) suggested, this finding may be attributed to the greater

span of time elementary teachers spend with students with ASD (usually 5-6 years) than teachers in middle and high schools do (usually 3-4 years). This hypothesis is at least partially supported by research findings that demonstrated a positive correlation between teacher experience or contact with students with ASD and teacher attitudes toward including these students in the general education classroom (e.g., McGregor & Campbell, 2001; Segall & Campbell, 2012). Another possible explanation of why secondary level teachers tend to have negative attitudes toward students with ASD is their lack of efficacy in both experience and knowledge required to instruct and manage the behaviors of these students (Humphrey & Symes, 2013). Historically, research has found that high school teachers are less positive and even resistant to including students with special needs into their mainstream classrooms due to the ensuing heavier responsibilities (Van Reusen, Shoho, & Barker, 2001). Van Reusen et al. (2001) found that 54% of the 125 high school teachers in their study indicated negative attitudes toward inclusion. In addition, teachers who lacked experience and knowledge of teaching students with disabilities held the most negative attitudes. Therefore, it is also possible that low efficacy among the secondary teachers in this study contributed to their more negative attitudes toward students with ASD.

### **Implications**

Several implications for in-service teacher practice can be drawn from the findings in this study. The four sections below discuss (a) the need for teachers to be aware of discriminative and unfair expectations, (b) the necessity of teachers to monitor the impact of biased behaviors, (c) the role of school administrators, and (d) ASD training considerations.

**Teacher awareness of discriminative and unfair expectations.** Teachers need to examine if their perception toward their students with ASD is different than toward typical students, and whether such attitudinal difference induces their discriminative interaction and unfair expectations toward students with ASD. It has been documented that even in teaching regular students, teachers tend to be more enthusiastic toward high-ability students (e.g., leaning toward, smiling, making eye contact) while low-ability students were given less stimulating questions, provided less feedback and called on less frequently (Lumsden, 1997). Similarly, based on the findings of some studies that teachers perceived their students with ASD as academically under-achieving and exhibiting low social and emotional functioning (e.g., Ashburner et al., 2010; Emam & Farrell, 2009), it is not surprising that teachers may consciously or unconsciously treat their students with ASD with inequality.

**Teacher monitoring of impact of biased behaviors.** Teachers should not only be aware of the presence of discriminative interactions and inequitable expectations but also monitor closely to see if any such

biased behaviors negatively affect the performance of students with ASD so that remedial actions can be taken. Research conducted with regular students found that biased teacher behaviors caused low-ability students to behave differently than high-ability peers. Some of these behaviors included lower academic and sports performance, talking less, and being more eager to seek teacher approval (Babad, Inbar, & Rosenthal, 1982; de Boer et al., 2010; Rothbart, Dalfen, & Barrett, 1971). Furthermore, one finding in Robertson et al.'s (2003) study was that when teachers had a negative relationship with their students with ASD, these students were also less socially accepted by typical students in the classroom. In order to promote meaningful inclusion for students with ASD, it is essential for more research to be conducted in this area. This is important in view of the aforementioned expanded definition of inclusion which is that inclusion goes beyond advocating for the physical presence of students with disabilities in the general classroom to also include their participation, acceptance and achievement as well.

**School administrators' roles.** Current literature has indicated that a teacher's positive attitude toward educating students with ASD seems to be enhanced by direct contact experience with students with ASD and receiving training and support to increase efficacy in managing these students (McGregor & Campbell, 2001; Segall & Campbell, 2012). Furthermore, existing research has also suggested that many teachers believe they lack the necessary training and resources to effectively work with students with ASD (Hess, Morrier, Heflin, & Ivey, 2008). As such, school administrators have two important roles to play in enhancing teacher attitudes toward students with ASD. The first role is to provide regular supervisory observation and constructive feedback in order to support teachers in being cognizant of their potential discriminative interactions and unfair expectations toward students with ASD. Additionally, the second role of school administrators is to provide ongoing training opportunities to enhance teachers' knowledge, skills, resources, and experience in educating students with ASD. The training opportunities would be particularly important for male teachers, teachers who do not hold special education certification, and secondary school teachers.

**ASD training considerations.** In order for ASD training to be effective, several considerations must be taken into account. First, to be highly effective, ASD training should comprise both theoretical orientation and evidence-based interventions. *Applied Behavior Analysis (ABA)* and *Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH)* are two widely used evidence-based ASD interventions. In a study of teachers trained in either ABA or TEACCH, Jennett, Harris, and Mesibov (2003) demonstrated a positive correlation between commitment

to theoretical beliefs in instructing children with ASD and self-efficacy. In addition, a high sense of efficacy in ABA or TEACCH was related to low levels of burnout in these two groups of educators. Leblanc et al. (2009) also found that after being trained in basic ABA techniques for 200 minutes, participating teachers' attitudes and perceptions of students with ASD improved significantly because these beginning teachers felt more confident and less anxious about working with students with ASD.

A second consideration for ASD training is that it must include exposure to autism specific behaviors. Because autism by definition entails unusual conduct such as self-injurious and aggressive behaviors, teachers' less positive attitudes toward students with ASD are partially anxiety-induced. Thus, ASD training programs should also comprise instruction, modeling, and practice in implementing evidenced-based interventions with ASD populations. In a qualitative study, Eldar, Talmor, and Wolf-Zukeman (2010) solicited reports from inclusion coordinators working directly with students with ASD. The researchers found that educator training programs that included both lectures as well as exposure to autism specific behaviors through role plays and films on autism were more likely to be effective than single component training programs.

Another consideration for ASD training is the need to enhance teacher knowledge of similarities between students with ASD and typical students (Harnum et al., 2007) and their ability to handle the tension of managing students with ASD (Emam & Farrell, 2009). A final consideration is that a clear understanding of key ASD characteristics is crucial to the appropriate management of ASD specific behaviors (Tobias, 2009). For example, a student with ASD may be considered "naughty" or "disrespectful," but teachers' perspectives will likely change once they realize the misbehavior is disability-related, not a manifestation of a typical behavior problem with no organic etiology.

### **Conclusion**

The findings of this study must be considered in view of several limitations. Although the sample size of this study was one of the largest in existing peer-reviewed literature concerning teacher attitudes toward students with ASD or their inclusion, the use of convenience sampling obtained from one urban-suburban geographic area limits the generalizability of the results. Future studies should use cluster sampling across larger geographical areas. A limitation is present in the instrument as well. While the items do explore respondents' perceptions, feelings, and behavioral intentions toward the children in both vignettes, nevertheless, the instrument is brief (only seven items). Further studies using a more extensive instrument and/or multiple measures would likely provide a more robust exploration of the cognitive, affective, and behavior components of teacher attitudes.

In conclusion, this study demonstrated that even though in-service teachers exhibit positive attitudes toward both the student with ASD and the typical student, their attitudes toward the student with ASD is significantly more negative than toward the typical student. Teachers certified in special education, however, are significantly more positive toward the student with ASD, compared to teachers without a special education certificate. In addition, female teachers and those teaching at the elementary level are also more likely to exhibit positive attitudes toward a student with ASD. These findings suggest that school administrators may need to consistently remind teachers about the importance of treating both students with ASD and typical students equally and to be aware of how teacher attitudinal differences may affect the performance of students with ASD in the classroom. Teachers, especially those who are males, without special education certification, and teaching at the secondary school levels, should be provided professional development in working with students with ASD in order to possibly enhance their attitudes toward this student population. Potential training components include characteristics of ASD and the theoretical knowledge, evidence-based instruction, and intervention practices for students with ASD.

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