

Exploring Preservice Teachers' Attitudes toward Inclusive Education for Students with Autism Spectrum Disorder (ASD)

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ABSTRACT:

The aim of this study is to examine preservice teachers' attitudes toward inclusive education for students with autism spectrum disorder (ASD). A total of 244 preservice teachers from various departments participated in this research. Data were gathered using a multi-dimensional attitude scale and analyzed through descriptive statistics, independent samples t-tests, and one-way ANOVA. The findings show that preservice teachers generally maintain a positive and supportive attitude toward ASD inclusion. Among the sub-dimensions, sensitivity received the highest scores, followed by education & training and professional self-efficacy. Statistical analysis indicated that, although gender did not significantly affect attitudes, factors such as prior professional experience, high levels of knowledge, and taking courses related to ASD significantly increased professional self-efficacy. Additionally, departmental differences were noted; students in special education and psychological counseling demonstrated higher sensitivity and professional self-efficacy compared to students in other programs. Interestingly, first-year students showed higher sensitivity than seniors, possibly reflecting an initial idealistic outlook. In conclusion, while preservice teachers are emotionally prepared and somewhat confident, teacher education programs should emphasize practical experience and evidence-based teaching strategies to bridge the remaining gap between sensitivity and professional self-efficacy in inclusive ASD education.

Keywords: attitude scale, inclusive education, preservice teachers, students with autism.

1. Introduction

Inclusive education, grounded in international frameworks such as the United Nations Convention on the Rights of Persons with Disabilities (Lindsay, 2003) and Sustainable Development Goal 4, emphasizes equitable access, participation, and belonging for all students within mainstream

schools. As a result, inclusive education has gained increasing global recognition as a fundamental right that guarantees all learners, regardless of their abilities or disabilities, access to equal learning opportunities alongside their peers in mainstream classrooms (Dignath et al., 2022). Within this framework, including students with autism spectrum disorder (ASD) increasingly involves

participation in inclusive classrooms that prioritize equitable access to academic and social learning experiences with typically developing peers (Keen et al., 2016). Worldwide, including students with ASD in inclusive settings is viewed as a way to promote both academic growth and social skills, provided teachers receive proper training and institutions offer adequate support (Russel et al., 2023). However, differences in implementation across countries show that systemic, cultural, and resource-related factors continue to affect the quality of inclusion for students with ASD (Roberts & Simpson, 2016). For example, in Türkiye, inclusive education for students with ASD is guided by the Ministry of National Education's (MoNE) policies that encourage access and participation in general education settings (MoNE, 2018). Yet, in practice, despite strong policy support for inclusion, challenges such as large class sizes, limited special education resources, and insufficient teacher training often hinder effective implementation (Haug, 2017). Furthermore, as Minuk et al. (2024) highlight in their large-scale retrospective study in Canada, the placement of students with ASD in inclusive classrooms has increased markedly over the past decade, especially at the elementary level, reflecting broader global progress toward inclusive education.

Despite these well-documented benefits and implementations, persistent barriers such as resource limitations, the distribution of educational assistants, and the structural rigidity of secondary schools continue to hinder the inclusion of students with ASD in mainstream classrooms (Kurowski et al., 2022; Petersson-Bloom & Holmqvist, 2022). Students with ASD often face unique challenges in inclusive environments due to difficulties with communication, social interaction, and sensory processing, which may require individualized instructional strategies and environmental adaptations (Siller et al., 2022). Inadequate teacher preparation and limited access to specialized support staff can further worsen these difficulties, leading to inconsistent implementation of inclusion across schools (Forlin & Chambers, 2011; Minuk et al., 2024). Additionally, attitudinal barriers such as teachers' misconceptions about autism or doubts regarding the feasibility of inclusion can negatively

impact classroom climate and student participation (Ravet, 2017). Addressing these issues requires not only professional development and institutional commitment but also a broader cultural shift toward recognizing neurodiversity as a vital aspect of educational inclusion (Rodriguez et al., 2012). These findings align with international research indicating that inclusion decisions are often shaped not only by pedagogical and policy factors but also by contextual variables such as socioeconomic status, population density, and teacher preparedness (Cassady, 2011).

Teachers play a crucial role in the success of inclusive practices. Teachers' attitudes are not only reflections of their beliefs but also predictors of their instructional behaviors, classroom climate, and students' inclusion outcomes (Avramidis & Norwich, 2002). Their attitudes, beliefs, and professional competences directly influence interactions among peers and the extent to which students with ASD experience acceptance and engagement in inclusive classrooms. For example, Rodríguez, Saldaña, and Moreno (2012) found that special education teachers generally hold positive attitudes toward teaching students with ASD; however, their attitudes are strongly influenced by access to autism-specific support networks and training opportunities. Teachers who received such support exhibited significantly higher confidence and more optimistic expectations regarding students' learning and social development. Similarly, recent studies highlight that teachers' self-efficacy and access to professional development critically shape their attitudes toward ASD inclusion. According to Russell and colleagues' (2023) systematic review, teachers generally have limited experience with inclusion, yet there is large variability depending on teachers' training, classroom experience, and perceived adequacy of resources. Teachers with greater ASD-specific knowledge and stronger institutional support are more likely to favor inclusive practices. Complementary findings by Gomez-Mari and colleagues (2022) also show that preservice and in-service teachers often recognize the social value of inclusion but express concerns about insufficient preparation and limited classroom resources. Collectively, these studies suggest that while most

educators endorse the principle of inclusion, ongoing training, collaboration, and support systems are essential for fostering positive teacher attitudes and effective practices in inclusive classrooms.

Although various scales exist to measure teachers' attitudes toward inclusive education (Bayar et al., 2015; Cansız & Cansız, 2018), few specifically focus on autism-related inclusion. However, teachers who show sensitivity and sufficient proficiency toward learners with ASD, possess adequate instructional knowledge, and feel professionally competent are more likely to create inclusive environments that promote learning and social adaptation. Despite the limited availability of instruments specifically designed to evaluate preservice teachers' sensitivity, instructional beliefs, and professional self-efficacy regarding the inclusion of students with ASD in the Turkish context, Karaca and Aydın (2023) developed a reliable and valid scale to address this gap.

Accordingly, exploring preservice teachers' attitudes toward the inclusion of students with ASD is essential to understanding their preparedness for future inclusive practices (Abellán et al., 2024). Such insights can inform teacher education programs aiming to improve awareness, empathy, and self-efficacy for inclusive education across all educational levels and disciplines. Therefore, the aim of this study is to examine preservice teachers' attitudes toward inclusive education for students with ASD. The guiding research questions are;

1. What is the overall attitude of pre-service teachers toward the inclusion of students with ASD?
2. Do pre-service teachers' attitudes toward the inclusion of students with ASD show

significant variation based on their; a. gender? b. prior experience with students with ASD? C. knowledge level regarding inclusive education? d. departments? e. grade levels (1st to 4th year)? f. taking a course related to ASD?

2. Methodology

2.1 Design

This study employed a quantitative research design based on a survey method (Creswell & Pothí 2016). The primary aim was to systematically describe the current attitudes of pre-service teachers toward the inclusive education of students with ASD. The quantitative research design was chosen because it allows for the assessment of the attitudes, perceptions, and self-efficacy beliefs of a large sample group using standardized tests. The use of a survey method ensures the collection of numerical data necessary for statistical analysis, which will then enable the investigation of relationships or differences in attitudes based on various demographic variables (e.g., gender, department, experience). Thus, this design provides a broad, objective, and generalizable assessment of the participants' current attitudes.

2.2 Participants

The study sample consisted of 244 pre-service teachers attending a public university in Türkiye. Informed consent for participation was obtained from all subjects involved in the study. Participants were selected through convenience sampling. Detailed demographic data such as department, grade, gender, experience with students with ASD, enrollment in courses related to ASD, and knowledge level about inclusive education were collected for further analysis. Table 1 shows the demographic information of the participants.

Table 1: Demographic information about participants.

Variable	Category	Frequency (f)	Percentage (%)
Program	Guidance and Psychological Counseling	42	17.2
	Primary Mathematics Education	38	15.6
	Science Education	38	15.6
	Primary School Education	34	13.9
	Turkish Language Education	32	13.1
	Chemistry Education	30	12.3

	Special Education	30	12.3
Grade	1st Grade	68	27.9
	2nd Grade	61	25.0
	3rd Grade	46	18.9
	4th Grade	69	28.3
Gender	Female	185	75.8
	Male	59	24.2
Experience with students with ASD	No	153	62.7
	Yes, personal (family, friend, environment)	53	21.7
	Yes, professional (teaching process)	38	15.6
Taking Course related to ASD	No	175	71.7
	Yes	69	28.3
Inclusive Education	Low	117	48.0
	Medium	103	42.2
Knowledge Level	High	24	9.8

According to Table 1, participants are preservice teachers from seven different departments. The sample is predominantly female (N=185, 75.8%), with male participants making up nearly a quarter (N=59, 24.2%). Participants are fairly evenly distributed across grade levels, with the largest group being 4th graders (N=69, 28.3%) and the smallest group being 3rd graders (N=46, 18.9%). More importantly, the data reveal significant gaps in their professional background regarding ASD inclusion: most preservice teachers reported no experience with students with ASD (N=153, 62.7%), and an even larger portion indicated they have not taken a course or seminar related to ASD (N=175, 71.7%). Furthermore, nearly half of the preservice teachers rated their inclusive education knowledge level as low (N=117, 48.0%) or medium (N=103, 42.2%), highlighting a widespread need for additional training and practical experience.

2.3 Instrument

The Attitude Scale of Preservice Teachers toward the involvement of individuals with ASD in inclusive education, developed by Karaca and Aydın (2023), was used as the data collection tool in this study. The attitude scale aims to assess preservice teachers' attitudes toward inclusive education for students with ASD. It consists of 16 items rated on a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The tool includes three factors identified through

exploratory factor analysis (EFA). These factors explain 63.55% of the total variance. The factors are: 1) Teaching and Instruction (7 items, Cronbach's alpha reliability = .902), which measures attitudes regarding the effectiveness and feasibility of instructional processes in inclusive classrooms; 2) Professional Self-Efficacy (5 items, Cronbach's alpha = .85), which assesses perceptions of preservice teachers' competence in designing materials, evaluating learning, and collaborating effectively when teaching students with ASD; and 3) Sensitivity (4 items, Cronbach's alpha = .79), which gauges emotional responses and readiness toward students with ASD in mainstream classrooms. The Cronbach's alpha for the entire scale is .862, indicating high internal consistency. The scale was validated with 285 preservice teachers from various teacher education programs, and its psychometric properties have been confirmed as valid and reliable for evaluating preservice teachers' attitudes toward ASD in inclusive education (Karaca & Aydın, 2023).

2.4 Data Analysis

The collected data analyzed using the Statistical Package for Social Sciences-27 (SPSS-27) program. The analysis process will include the following steps: first, the data set will be screened for missing values and outliers to ensure data quality. To assess the internal consistency and reliability of the attitude scale and its sub-dimensions (Sensitivity, Teaching and Instruction, and Professional Self-

Efficacy), Cronbach's Alpha coefficients were calculated. Before the main analyses, the normality of the data distribution will be evaluated using skewness and kurtosis values, which indicated that the data meet the assumptions for parametric testing. The results of the Cronbach's Alpha reliability analysis, along with skewness and kurtosis values for the overall scale and its sub-dimensions, are presented in Table 2.

Table 2: Reliability and normality values for the attitude scale (n=244)

Sub-Dimension	Number of Items	Cronbach's α
Sensitivity	4	.675
Teaching and Instruction	7	.917
Professional Self-Efficacy	5	.902
Overall Scale	16	.914

Descriptive statistics, including arithmetic means (M) and standard deviations (SD), were used to assess the overall attitude levels of the pre-service teachers. For inferential statistics, an independent samples t-test was conducted to compare attitude scores based on binary variables such as gender and whether they took a course related to ASD. Additionally, a one-way analysis of variance (ANOVA) was employed to determine if the pre-service teachers' attitudes showed significant differences across prior experience, knowledge level, department, and grade level.

3. Results

3.1 Descriptive Statistics of Pre-Service Teachers' Attitudes

The descriptive statistics, including the arithmetic mean (X) and standard deviation (SD), were calculated to summarize preservice teachers' attitudes toward inclusive education for students with ASD. Prior to analysis, the negatively worded scale items (items 1, 2, 3, and 4) within the sensitivity sub-dimension were reverse scored to ensure conceptual consistency, where higher scores uniformly indicate a more positive attitude or higher self-efficacy.

Table 3: Descriptive statistics for the attitude scale and sub-dimensions

Sub-Dimension	Mean (X)	Standard Deviation (SD)	Cronbach's α
Sensitivity	4.19	0.68	.675
Teaching and Instruction	3.96	0.75	.917
Professional Self-Efficacy	3.69	0.87	.902
Overall Scale	3.94	0.64	.914

As shown in Table 3, preservice teachers generally hold a moderately high, positive overall attitude toward the inclusion of students with ASD (X=3.94, SD=0.64). Given the 5-point Likert scale structure (where 3 is neutral), this mean indicates that the cohort tends to agree with the principles of inclusive education. When examining the sub-dimension scores, a clear pattern of strengths and challenges emerges. Participants showed the highest agreement in the sensitivity sub-dimension (X=4.19, SD=0.68). The mean for the teaching and instruction sub-dimension suggests a moderately positive belief (X=3.96, SD=0.75) in the potential for effective learning and social-academic gains for students with ASD within inclusive education. The lowest mean (X=3.69) and the highest variability (SD=0.87) were recorded in the professional self-efficacy sub-dimension.

3.2 Analysis of Attitudes Based on Gender

An independent samples t-test was performed to explore whether pre-service teachers' attitudes toward including individuals with ASD differ significantly by gender. This analysis seeks to determine if gender influences the sensitivity, teaching, instruction, and professional self-efficacy levels of preservice teachers. The results are shown in Table 4.

Table 4: An independent samples t-test scores based on gender

Dimension	Group	n	M	SD	t	p
Sensitivity	Female	185	4.22	0.65	0.966	.335
	Male	59	4.12	0.78		
Teaching and Instruction	Female	185	3.99	0.74	0.921	.358
	Male	59	3.88	0.78		
Self-Efficacy	Female	185	3.72	0.86	0.996	.320
	Male	59	3.59	0.92		

Table 4 indicates that gender does not have a statistically significant effect on any of the attitude dimensions ($p > .05$). While female preservice teachers reported slightly higher mean scores in sensitivity ($M=4.22$), teaching and instruction ($M=3.99$), and professional self-efficacy ($M=3.72$) compared to male preservice teachers, these differences did not reach statistical significance.

3.3 Analysis of Attitudes Based on Prior Experience

A One-Way ANOVA was conducted to examine whether preservice teachers' attitudes varied significantly based on their prior experience with individuals with ASD. The results are summarized in Table 5.

Table 5: One-Way ANOVA analysis based on prior experience

Dimension	Category	n	M	SD	F	p
Sensitivity	None	153	4.16	0.69	3.05	.049*
	Personal	53	4.12	0.71		
	Professional	38	4.44	0.59		
Teaching and Instruction	None	153	3.88	0.72	2.91	.057
	Personal	53	4.14	0.84		
	Professional	38	4.06	0.70		
Professional Self-Efficacy	None	153	3.52	0.79	15.53	.000*
	Personal	53	3.70	0.93		
	Professional	38	4.36	0.82		

As shown in Table 5, prior experience significantly influenced both the Sensitivity ($p=.049$) and Professional Self-Efficacy ($p<.001$) of preservice teachers. Specifically, preservice teachers with professional teaching experience with individuals with ASD reported higher levels of sensitivity and significantly greater confidence in their professional skills compared to those with no experience.

3.4 Analysis of Attitudes Based on Knowledge Level

A One-Way ANOVA was conducted to determine whether pre-service teachers' attitudes significantly differed based on their self-reported knowledge level of inclusive education. The results are summarized in Table 6.

Table 6: One-Way ANOVA analysis based on knowledge level

Sub-Dimension	Category	N	M	SD	F	p
Sensitivity	Low	117	4.22	0.67	6.3	.002*
	Medium	103	4.07	0.70		
	High	24	4.60	0.52		
	Low	117	3.97	0.76	0.57	.564

Teaching and Instruction	Medium	103	3.92	0.74		
	High	24	4.10	0.74		
Professional Self-Efficacy	Low	117	3.56	0.85		
	Medium	103	3.68	0.79	9.50	.000*
	High	24	4.38	1.01		

According to Table 6, knowledge level played a crucial role. Preservice teachers who perceived their knowledge of inclusion as "High" demonstrated significantly higher sensitivity ($M=4.60$, $p<.005$) and professional self-efficacy ($M=4.38$, $p<.001$) than those in the Low and medium categories. However, knowledge level did not produce a significant difference in the education and training sub-dimension ($p=.564$), indicating that preservice teachers across all knowledge levels share a similar belief regarding the general benefits of inclusive education.

3.5 Analysis of Attitudes Based on Department

To determine whether the departments of preservice teachers influenced their perspectives on including students with ASD, a series of One-Way ANOVA tests were conducted. This analysis aimed to identify differences across the three core sub-dimensions: sensitivity, education and training, and professional self-efficacy. The results are summarized in Table 7.

Table 7: One-Way ANOVA analysis based on knowledge level

Sub-Dimension	Program	n	M	SD	F	p
Sensitivity	Psychological Counseling	42	4.61	0.48	4.679	.000*
	Special Education	30	4.38	0.75		
	Chemistry Education	30	4.21	0.60		
	Science Education	38	4.07	0.63		
	Primary School Education	34	4.03	0.69		
	Turkish Language Teaching	32	4.02	0.71		
	Primary Mathematics Education	38	4.00	0.73		
	Special Education	30	4.11	0.47		
Teaching and Instruction	Psychological Counseling	42	4.05	0.48	0.939	.468
	Science Education	38	4.03	0.91		
	Chemistry Education	30	4.01	0.85		
	Primary School Education	34	3.88	0.75		
	Primary Mathematics Education	38	3.88	0.65		
	Turkish Language Teaching	32	3.75	0.99		
	Special Education	30	4.20	0.93		
	Psychological Counseling	42	3.73	0.94		
Professional Self-Efficacy	Science Education	38	3.67	0.73	2.494	.023*
	Primary School Education	34	3.67	0.73		
	Chemistry Education	30	3.63	0.83		
	Primary Mathematics Education	38	3.57	0.75		
	Turkish Language Teaching	32	3.41	1.06		
	Special Education	30	4.20	0.93		

As detailed in Table 7, the department of preservice teachers showed statistically significant differences in two specific sub-dimensions. The most notable variation was observed in the sensitivity dimension ($F(6,237)=4.679$, $p<.001$), where preservice teachers from the psychological counseling program reported the highest mean score ($M=4.61$, $SD=0.48$), followed by preservice special education teachers ($M=4.38$, $SD=0.75$). Significant differences were also found in the professional self-efficacy dimension ($F(6,237)=2.494$, $p=.023$). In this dimension, preservice special education teachers demonstrated the highest perceived competence ($M=4.20$, $SD=0.93$), while Turkish Language Teaching preservice teachers reported the lowest

mean score ($M=3.41$, $SD=1.06$). In contrast, the teaching and instruction sub-dimension did not show a statistically significant difference across programs ($F(6,237)=0.939$, $p=.468$), with mean scores ranging from 3.75 to 4.11.

3.6 Analysis of Attitudes Based on Grade Level

A One-Way ANOVA was performed to evaluate whether the attitudes of preservice teachers vary across grade level of their undergraduate education. This analysis explores how professional growth from the first to the fourth year, impact preservice teachers perspectives on autism and inclusive education. Analysis results are summarized in Table 8.

Table 8: One-Way ANOVA analysis based on grade level

Dimension	Grade	N	M	SD	F	p
Sensitivity	1st Grade	68	4.37	0.64	2.836	.039*
	2nd Grade	61	4.07	0.71		
	3rd Grade	46	4.24	0.61		
	4th Grade	69	4.10	0.72		
Teaching and Instruction	1st Grade	68	3.94	0.94	0.702	.552
	2nd Grade	61	3.93	0.76		
	3rd Grade	46	4.11	0.53		
	4th Grade	69	3.92	0.65		
Professional Self-Efficacy	1st Grade	68	3.59	0.97	1.489	.218
	2nd Grad	61	3.57	0.79		
	3rd Grade	46	3.83	0.81		
	4th Grade	69	3.80	0.87		

According to the ANOVA results in Table 8, a statistically significant difference was found in the Sensitivity sub-dimension based on grade level ($F(3,240)=2.836$, $p=.039$). First-grade students reported the highest sensitivity levels ($M=4.37$), while second-grade students had the lowest ($M=4.07$). However, no significant differences were observed in the education and training ($p=.552$), professional self-efficacy ($p=.218$) dimensions across the different grade levels.

3.7 Analysis Based on Taking a Course Related to ASD

To evaluate the impact of specialized training, an independent samples t-test was conducted to compare the attitudes of pre-service teachers who have taken a course or seminar on autism with those who have not. This comparison aims to demonstrate how academic instruction specifically focused on ASD affects preservice teachers' readiness and self-perceived competence. . The results are summarized in Table 9.

Table 9: An independent sample t-test results based on taking course related to ASD

Dimension	Taking a Course Related to ASD	n	M	SD	t	p
Sensitivity	Yes	69	4.22	0.74	0.340	.735
	No	175	4.18	0.66		
Teaching and Instruction	Yes	69	3.98	0.78	0.254	.800
	No	175	3.95	0.74		
Professional Self-Efficacy	Yes	69	3.97	0.93	3.125	.002*
	No	175	3.58	0.83		

As shown in Table 9, taking a course related to ASD has a highly significant effect on the professional self-efficacy of preservice teachers ($t(242)=3.125$, $p=.002$). Preservice teachers who received specialized training reported a significantly higher mean score ($M=3.97$) compared to those who did not ($M=3.58$). In contrast, taking the course did not lead to a significant difference in the Sensitivity ($p=.735$), Teaching and Instruction ($p=.800$) dimensions.

4. Discussion

The results indicate that pre-service teachers generally maintain a positive attitude toward the inclusion of students with ASD. The highest scores were observed in the sensitivity sub-dimension, suggesting strong emotional readiness and social acceptance of individuals with ASD. This aligns with the findings of Karaca and Aydın (2023), who noted that preservice teachers often possess a high level of empathy and openness toward inclusive practices. Furthermore, literature emphasizes that positive attitudes are the most critical prerequisite for the successful implementation of inclusive education, as teachers with positive attitudes are more likely to adapt their instruction to meet diverse needs (Boyle et al., 2020; Dignath et al., 2022; Gómez-Marí et al., 2022). However, the significantly lower scores in professional self-efficacy imply a gap between willingness to include and competence to teach. This discrepancy is a common theme in the literature, where preservice teachers support inclusion philosophically but feel unprepared for practical application in the classroom (Yazıcı & Akman, 2018). Similar to this result, preservice teachers feel inadequately prepared to develop Individualized Education Programs (IEPs) or adapt assessment tools for

students in inclusive education (Şenay-İlik & Sarı, 2017). This sensitivity-efficacy gap suggests that while social justice and equity values are successfully implemented, teachers' pedagogical confidence remains underdeveloped (Akmeşe & Kayhan, 2019).

The analysis showed that gender does not significantly affect preservice teachers' attitudes toward ASD inclusion. Although female preservice teachers scored slightly higher on average, the absence of statistical significance indicates that the teacher education curriculum and professional socialization processes influence preservice teachers regardless of gender. This result aligns with various studies in special education that argue professional training and knowledge are stronger predictors of attitude than demographic factors like gender (Avramidis & Norwich, 2002). Additionally, recent meta-analyses have demonstrated that inclusive education is integrated into teacher education programs, so both male and female preservice teachers should take these courses (Donath et al., 2023).

One of the most important findings of this study is the effect of professional experience and self-reported knowledge on professional self-efficacy. Preservice teachers with prior teaching experience or high knowledge levels reported significantly greater confidence in their professional abilities. This result is supported by contact theory, which states that frequent and meaningful interaction with individuals with disabilities reduces prejudice and increases professional comfort (Allport, 1954; Rademaker et al., 2020). According to Bandura's (1997) social cognitive theory, mastery experiences are the most effective way to develop self-efficacy. The findings suggest that direct interaction with

students with ASD in an instructional role is what truly closes the gap in professional confidence. This emphasizes that teacher education programs should focus on practical opportunities in inclusive learning environments (Smantser & Ignatovich, 2015).

The variation in sensitivity scores across departments, where special education and psychological counseling students score the highest, highlights the influence of departmental culture and curriculum. The psychological counseling curriculum's focus on individual differences and empathy may foster higher sensitivity (Tuncel & Arıcıoğlu, 2018). Similarly, the high self-efficacy scores of preservice special education teachers are expected, given their specialized training. This supports the idea that specific training in ASD, which helps in understanding the special needs of students with ASD, reduces preservice teachers' anxiety and increases instructional effectiveness (Leblanc et al., 2009). Interestingly, the higher sensitivity of 1st-grade students compared to 2nd-grade students might reflect an idealistic outlook when entering the profession, which slightly shifts as the academic rigor and awareness of professional challenges increase during preservice teacher training programs (Maaranen et al., 2016).

This study also shows that taking a specific course related to ASD significantly boosts professional self-efficacy, although it does not necessarily increase general sensitivity. This suggests that while pre-service teachers are already aware of the needs of students with ASD, specialized training gives them the pedagogical tools needed to feel competent (Markelz et al., 2017). As Karaca and Aydın (2023) state, including ASD-specific modules in the general teacher education curriculum is important for ensuring that all future teachers are prepared to handle the complexities of inclusive classrooms. Without such targeted training, pre-service teachers may find it difficult to balance the needs of students with ASD with those of the rest of the class, which can lead to burnout and unsuccessful inclusion outcomes (Squillaci & Hofman, 2021).

5. Conclusion

This study provides a comprehensive analysis of preservice teachers' attitudes toward including

students with ASD, revealing a multi-dimensional perspective shaped by sensitivity, education, training, and professional self-efficacy. The results conclude that while future teachers have a high level of social sensitivity toward inclusive education, they also experience significant self-efficacy regarding classroom practice. The findings further highlight that demographic factors such as gender and grade level do not play as significant a role as specialized training and direct interaction. Specifically, the considerable impact of professional experience and courses related to ASD on self-efficacy scores confirms that pedagogical confidence is a learned attribute. Based on the results of this research, the following recommendations are suggested:

- Educational faculties should incorporate mandatory or elective, ASD-specific modules into the general teacher training curriculum. These courses should focus on how to include students with ASD into mainstream education.
- Practical or internship programs should give preservice teachers direct, supervised opportunities to work with students with ASD in inclusive classrooms, enhancing their self-efficacy.
- Future studies should follow preservice teachers into their first few years of professional practice to observe how their attitudes and efficacy levels change in real-world inclusive classrooms.

In conclusion, for inclusive education to advance from mere social acceptance to academic success for students with ASD, teacher education programs need to bridge the gap between theoretical willingness and practical skills. Equipping future teachers with evidence-based strategies is crucial to ensure that inclusive classrooms are not only welcoming but also effective learning environments for students with ASD.

Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of Çanakkale Onsekiz Mart University (2026-YÖNP-0295) on 16.03.2026.

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Author Declaration

The authors declare that this manuscript is an original work and has not been published previously, nor is it under consideration for publication elsewhere.

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