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Article

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Posted Date: November 26th, 2026

DOI: https://doi.org/10.21203/rs.3.rs-11209923/v1

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Additional Declarations: No competing interests reported.

Supporting Social Inclusion of Students with Autism: School Staff Practices and Individual and Structural Factors in Norwegian Primary Schools

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Introduction: Children with ASD, despite having good cognitive and linguistic skills, may need support to participate in the social community. Many students may need an "interpreter" to help them understand rules in play and social interactions. This emphasizes the need for adult support in social interaction for students with ASD, to ensure social inclusion. The aim of this study is to investigate the extent to which Norwegian school staff function as active supporters in play and social interaction for primary school students with ASD. In addition, it examines which factors that may influence this support practice.

Methods: A quantitative research design with a survey as the collection method was used to answer the research questions, enabling a broad sample of respondents and a range of statistical analyses. Active support was measured through a series of questions that measure different forms of support: presence and observation, support in play and social interaction, and relational support and inclusion. Additional questions measured factors that may influence this support practice.

Results: Findings indicate that school staff largely function as active supporters by intervening when social challenges arise, but that they engage to a lesser extent in systematic and preventive work aimed at promoting social inclusion. ASD-specific competence shows clearer associations with support practice than general work experience, and job position emerges as the most significant background variable. Furthermore, special educators score consistently higher than teachers on active support, which may reflect differences in structural frameworks and role expectations. Time pressure and lack of resources represent barriers that affect all staff relatively equally.

Discussion: Overall, this study suggests that staff support practice is influenced by both individual and structural factors. A more systematic and proactive approach to social inclusion

will require targeted and ASD-specific competence development, as well as improved structural conditions in school.

Keywords
Autism Spectrum Disorder (ASD), social support, social interaction, play, social inclusion, quantitative research design.

Introduction

Autism spectrum disorder (ASD) is an umbrella term for several neurodevelopmental disorders characterized by challenges with social interaction and communication, as well as limiting and often distinctive interests and repetitive patterns of behavior. It is challenging to form a common understanding of the disorder, because of the great diversity in how ASD manifests itself in different people (Chahboun et al., 2022). The variation in symptoms affects both identification, adaption and educational measures for students with ASD. Children with ASD, despite having good cognitive and linguistic skills, may need support during recess to participate in the social community (Haugen, 2019). Many students may need an "interpreter" to help students understand rules in play and social interactions. This emphasizes the need for adult support in social interaction for students with ASD, to ensure social inclusion.

The overall research question for this study was "To what extent do school staff function as active supporters in play and social interaction for primary school students with ASD, and which factors can influence their support practices". Furthermore, the article is also addressing structural and competence-based factors, the relationship between staff background variables and their social support practice, and differences between regular teachers and special educators as active supporters for students with ASD.

Autism spectrum disorder

According to the American Psychiatric Association ([APA] 2022), autism spectrum disorder (ASD) is classified as a neurodevelopmental disorder. An ASD diagnosis is characterized by a persistent inability to initiate and maintain reciprocal social interaction and social communication, as well as a restricted and repetitive pattern of behavior and interests that are atypical for the individual's age and sociocultural context (World Health Organization [WHO], 2022). In the past, an autism diagnosis was separated into childhood autism,

Asperger's syndrome, atypical autism, and pervasive developmental disorder not otherwise specified, but today ASD is used as an overarching umbrella term to describe these diagnoses (Kaale & Nordahl-Hansen, 2025).

The DSM-5 lists several clinical symptoms and criteria for an ASD diagnosis. These describe two central problem areas in children with ASD: challenges related to social communication, and a presence of restricted and repetitive behaviors and interests (APA, 2022). The first problem area is persistent disturbances in social communication and social interaction across different contexts. This is expressed through a lack of social-emotional reciprocity, such as lack of turn-taking in conversations and lack of initiation or response to social interaction. In addition, this problem area is characterized by an absence of non-verbal communicative behavior, such as absent eye contact or lack of facial expressions. Furthermore, children with ASD may have challenges in developing and maintaining relationships, such as difficulty establishing friendships and absent interest in peers (Chahboun et al., 2024). The second problem area is limited and repetitive patterns of behavior, interests or activities. This can manifest itself in several ways, including through repetitive motor movements or repetitive use of objects and language. Many children with ASD also have a strong need to maintain regular routines and predictability and can react with significant stress to even small changes or transitional situations (Chahboun et al., 2024). In addition, very limited and fixed interests are common, as well as hyper- or hyposensitivity to sensory impressions such as sounds, smells or touch. Ultimately, these symptoms must collectively limit and impair the person's daily functioning.

Play and social interaction in children with ASD

How do children with ASD play?

Children and young people with ASD constitute a very heterogeneous group, and it is therefore important to avoid generalizing that everyone has the same challenges in play. Nevertheless, research describes several characteristics that occur in children with ASD. Ray-Kaeser et al. (2017) point out that difficulties with play are part of the basic features of ASD, and that children with ASD often appear less playful than their peers, show repetitive use of objects and have limited play interests. Their play patterns can be repetitive, restrictive and not very symbolic, and are often oriented towards sensory features or physical exploration.

This can be understood as a form of “serious play”, which is nevertheless both conscious and meaningful for the child (Ray-Kaeser et al., 2017).

Sensory integration difficulties are prevalent among children with ASD, and sensitivity to noise, light, smell, or touch can make play situations overwhelming. This can contribute to reducing both participation in play and social interaction with peers (Ray-Kaeser et al., 2017). In addition, research shows that children with ASD often prefer sensory-motor play, such as sensory exploration, physical play, and spinning top play (Conn, 2018).

Since many forms of play require social skills and interaction, it can be challenging for children with ASD, who often prefer fewer social forms of play (Conn, 2018). Play is an important arena for social learning in children with ASD. Ray-Kaeser et al. (2017) emphasize that social stories and role-play can support children in understanding and practicing social situations from everyday life. The child's limited interests and specific skills can also be used as an input for motivation and participation in play.

Patterns of social interaction

As mentioned earlier, ASD is characterized by difficulties in developing social skills, which are essential for building social relationships in school. According to Alferez-Pastor et al. (2025), a possible explanation for this can be linked to Theory of Mind (ToM). The theory describes how individuals with ASD often have difficulties in attributing mental states to themselves and others, which affects their ability to understand emotions, thoughts and perceptions. This can make it challenging for students with ASD to include themselves in social interactions with their peers (Alferez-Pastor et al., 2025). A limited ability to ToM may explain the challenges children with ASD have in symbolic play or pretend play. Such play requires the ability to imagine being another person or to put oneself in the perspective of others (Ray-Kaeser et al., 2017).

Difficulties with social interaction can be seen in children with ASD being less involved in play and showing less initiative in interaction, compared to their peers. As children get older, the teenage years can be particularly difficult. For many students with ASD, the demands placed on social arenas are challenging, which can lead them to avoid arenas where social interaction is expected. A major danger with this is to misunderstand this as an expression that children and young people with ASD do not want to be social. If a person has previously had bad experiences with social interactions, such as bullying, this can be the reason for social withdrawal. Despite difficulties with interaction, students with ASD may have a strong desire

to be with their peers, but they may need help to make it happen. There are many consequences associated with a lack of social relationships, such as involuntary school absence, stress, loneliness, depression and anxiety (Kaale & Nordahl-Hansen, 2025). Previous research indicates that social participation is not only about the child's individual skills, but also about the context around the child. Tsou et al. (2024) show that measures that only target the child's social skills rarely lead to increased reciprocity or friendship, while measures that involve staff and peers have greater potential to create actual social inclusion. For many children with ASD, social interaction at school is difficult and can be a major source of stress. Children with ASD can face many challenges when initiating or participating in interactions with peers and are often excluded or ignored by other students (Tsou et al., 2024).

The role of employees as social support

What is social support?

Social support is the emotional, practical, informational and relational resources an individual accesses through their social network, contributing to coping, health and social belonging (Drageset, 2021). Cohen and Wills (1985) distinguish *structural* support (extent of social relationships) from *functional* support (what those relationships provide), identifying four functional forms: emotional support (feeling valued and accepted), informational support (help understanding and coping with challenges), belonging (being part of a community, reducing stress and promoting positive emotion), and instrumental support (concrete, practical help in difficult situations). They also describe two models: the *main effect* model, where support is a general protective factor regardless of stress level, and the *buffering* model, where support is especially important under stress, protecting against its negative consequences (Cohen & Wills, 1985). In schools, good social support can counteract stress and promote coping at both individual and class level (Helsedirektoratet, 2021).

From Rights to Practice: Building Inclusive and Participatory Schools

A fundamental principle of the United Nations Convention on the Rights of the Child (UNCRC) is the best interests of the child, which must be a primary consideration in all decisions and actions affecting children. The Convention further underscores children’s right to participation and to have their views taken into account in matters affecting them, situating this right within the broader framework of participation in society (UNCRC, 1989).

Similarly, the Norwegian Education Act (*Opplæringslova*) establishes the best interests of the pupil as a primary consideration in all actions affecting them. Within this framework, pupils' right to participation is recognized as a fundamental principle, emphasizing their active involvement in matters concerning their education and school experience (The Education Act, 2023).

Inclusion is further established as a right for all pupils, placing an active responsibility on schools to work systematically and proactively toward developing inclusive learning communities (UNESCO1994). To ensure that all pupils receive satisfactory educational provision, irrespective of their individual abilities and needs, the Education Act emphasizes differentiated instruction. Central to this provision is the opportunity for pupils to learn, develop, and participate meaningfully within the school community (The Education Act, § 11-1).

Alongside the emphasis on pupils' rights to inclusion and participation, the legislation underscores the importance of professional competence and capacity building in ensuring high-quality educational provision. Translating statutory requirements and policy intentions into educational practice requires schools to develop the collective capacity to respond effectively to diverse pupil needs. In this regard, professional learning communities (PLCs), supported and facilitated by school leadership, represent an important mechanism for strengthening professional competence and supporting the implementation of educational policy in practice.

Presence, observation and support in play

School staff, including principals, play an active role in observing and following up ASD students in regular classes. One informant described observation as key to identifying students for inclusion (Ahlers et al., 2023). Observing children with ASD in play, from a distance or while participating, gives insight into their intentions, pace and interests without stopping the play (Conn, 2018). Conn (2018) identifies three staff roles in supporting play: *facilitator* (engaging in play to ensure inclusion, modeling behavior or commentating), *mediator* (intervening in misunderstandings or conflicts), and *active play partner* (participating directly).

Teacher presence can bridge social interaction between ASD and typically developing peers, but too much adult interaction can limit peer interaction (Drye et al., 2024). Research on

preschoolers found children with ASD approached and were approached by teachers more often than peers were. This shows evidence of elevated prompt adult support as useful for shaping strategies that facilitate peer interaction and underscoring the teacher's role as facilitator in inclusive classrooms (Drye et al., 2024).

Support in social interaction

Kaale and Nordahl-Hansen (2025) describe interventions that support social participation and friendships for ASD students: social skills training using social stories, informing peers about ASD to build understanding, structured rule-based activities, and interest-based small groups that highlight students' strengths.

Gledhill and Currie (2020) find that teachers see social support as crucial for participation, self-esteem and well-being. They help students read social cues, engage in reciprocal conversations and build relationships. The needs vary, as one teacher noted some students prefer to simply observe rather than participate.

Cook and Ogden (2022) examine how teachers support autistic students' social understanding and friendships in mainstream and special schools. Teachers may act as "interpreters" or communicative support in social situations by helping students make sense of social cues, peers' intentions, and misunderstandings that might otherwise be difficult to interpret. For example, a teacher might explain why a peer reacted in a particular way, clarify whether a comment was intended as a joke, or help students understand each other's perspectives following a disagreement. Teachers may also provide reassurance, mediate conflicts, and make implicit social expectations more explicit. In addition, communication groups can provide opportunities to discuss and practise social situations in a more structured and supportive setting. Cook and Ogden also highlight the importance of opportunities for contact with peers and shared interests, suggesting that teachers' support involves not only explaining social interactions but also facilitating conditions in which friendships can develop.

Relational support and inclusion

Bolourian et al. (2021) found that teachers promote inclusion by giving students special responsibilities in the classroom, showcasing their talents, and building relationships by engaging with students' interests and spending one-on-one time. This requires patience, since relationship-building can take time. Visual aids, like schedules and timers, and predictable routines with clear expectations also support inclusion.

Cook and Ogden (2022) emphasize using students' interests and motivation as a basis for learning and participation, along with a clear daily structure, visual timetables, and guided transitions. Removing structures tend to confuse and unsettle students with ASD, while predictability makes them more open to social opportunities. Gradual variation in routines can also help to build flexibility (Gledhill & Currie, 2020).

Ahlers et al. (2023) examine principals' and special educators' perceptions of their school's "autism culture." Social interaction between peers is a key aspect of inclusion, requiring staff to create meeting points, such as "reverse inclusion" at lunchtime, where mainstream students join students with ASD, with adults supporting interaction as needed. Peers can themselves be important supporters. Peer-mediated approaches can provide students with ASD with opportunities for active engagement and social communication with their peers and may contribute to increased peer acceptance and reduced social isolation (Hodges et al., 2022). Such approaches may involve training peers as social partners or establishing peer networks, often with adults facilitating the interaction (Tsou et al., 2024). However, increased opportunities for peer interaction and participation do not necessarily lead to reciprocal relationships or friendships, highlighting the importance of considering the quality of social inclusion rather than participation alone (Tsou et al., 2024). Several schools have also used mentoring systems and playgroups to support communication and play, with adults modeling and guiding the interaction (Conn, 2018).

Factors influencing support practices

Hasson et al. (2022), studying parents, staff and students with ASD, find that staff who work most closely with ASD students often have the least formal expertise, and highlight structural factors such as funding and access to resources as key to adequate support. Inadequate support can negatively impact the development and behavior of students with ASD.

Research identifies additional barriers to inclusion (Al Jaffal, 2022; Senoo et al., 2024). Al Jaffal (2022) mentions three: lack of competence (inadequate ASD training), limited collaborative opportunities and lack of resources. Having an assistant to support the student with ASD while the teacher teaches, is essential, and without one it is difficult to meet both individual and class needs. Senoo et al. (2024), studying Ghana, similarly cite a lack of ASD knowledge, a lack of adapted materials, and weak interdisciplinary collaboration as barriers.

Ahlers et al. (2023) also emphasize the value of an assistant or support person, while teachers point to inadequate staffing and funding as inclusion barriers. Without adequate resources, implementing inclusive measures becomes almost impossible (Al Jaffal, 2022).

The role of teachers and special education teachers

The position or professional background of the employee may impact the support practices. In Norwegian mainstream schools, teachers have broad general pedagogical competence for the entire student group, while special educators have specialized competence for students with special needs, along with a relational closeness that provides insight into individual students' needs, resources and participation conditions (Uthus, 2020).

Access to special education competence can shape teachers' own practice. Øen (2024), although not directly concerned social support, shows how structural conditions produce different roles for teachers and special educators. Such competence can strengthen teachers' self-efficacy and ability to meet different needs, but an excessively difficulty-oriented focus risks the opposite. Øen (2024) instead points to strong professional communities, where staff with diverse backgrounds collaborate to develop practice, remove barriers to participation, and provide those who work daily with students with support and space to reflect and develop their practice.

Previous research to the present study

Research shows that staff play an important role in the social inclusion of students with ASD (Tsou et al., 2024). The presence of staff can act as a bridge builder in social interactions between ASD students and typically developing children, but too much adult interaction can also limit this interaction (Drye et al., 2024). Teachers themselves perceive that social support is crucial for promoting social participation and well-being in students with ASD (Gledhill & Currie, 2020). Several articles have identified specific measures that teachers use to promote inclusion and relationship building (Bolourian et al., 2021), and to support social interaction through social skills training (Kaale & Nordahl-Hansen, 2025) and interpretation of social situations (Cook & Ogden, 2022). In addition, various roles that staff can take on to support children with ASD in play are described (Conn, 2018). Observation is also highlighted as an important prerequisite for understanding the student's needs and assessing appropriate forms of inclusion (Ahlers et al., 2023). Cohen and Wills' (1985) theory of social support can be used to understand staff support practices as a form of functional support, where different

dimensions of this support are something the staff can contribute to meeting the needs of the student. The buffering model is particularly relevant, as support from staff can function as a buffer against social challenges that students with ASD may encounter in play and interaction with peers.

Some studies have pointed to a competence gap and a lack of resources as key barriers to inclusion (Al Jaffal, 2022; Hasson et al., 2022). However, these studies say little about how employees' background, such as educational level and position, and general and ASD-specific experience, are related to their support practices. There is limited research on such support in social situations for students with ASD in Norwegian schools, and in particular there is a lack of studies with a quantitative approach. This study therefore seeks to contribute to filling this knowledge gap. This study aims to shed light on employees' experiences when it comes to working with social support to ensure that students with ASD are included in the school community. Although children with ASD may be motivated to interact with peers, a lack of social competence can make such situations challenging, making adult social support particularly important. However, previous research provides limited insight into how widespread such support measures are in practice, to what extent they are implemented and how effective these measures are perceived by staff. There is therefore a need for a research project that sheds light on the extent to which staff are active supporters of students play and social interaction, for example through surveys aimed at staff who work closely with these students.

Methodological approach

This research project used a quantitative cross-sectional design with survey as the data collection method, where the data was collected from a specific population at one point in time (Thrane, 2025; Tufte, 2025). This quantitative approach was suitable for answering the research question because of the purpose to examine the extent and variation in reported support practices among a large sample off employees in the primary school sector.

Data were collected using an online survey tool and then analyzed in SPSS through three steps. First, a descriptive analysis of the questions included in the dependent variables for active support practices was carried out. Then, correlation analysis and one-way analysis of variance were used to examine the relationships and differences in the responses between active support and independent variables, including experience, education and job position. Finally, an independent t-test was carried out to test for statistically significant differences in

support practices between regular teachers and special education teachers. These analysis methods were chosen based on the structure of the data and the measurement level of the variables. Active support was measured with a 6-point Likert scale and treated as a continuous dependent variable. A thematic analysis was also carried out on two open-ended questions from the survey. This analysis was very short and did not take up as much space as the statistical analysis but is seen as a relevant supplement to the discussion of the thesis.

Statistical analysis

By using descriptive analysis, we were able to describe the collected data. This provided an overview of how many of the respondents agreed or disagreed that they provide active social support in the students play and social interaction. Part of descriptive analysis is describing the central tendency, which deals with the typicality of one or more variables. This involves looking at the mean, median and mode of the variables (Thrane, 2025). The mean is used as a measure of the representative value of a variable (Tufte, 2025), and in this study gave a picture of agreement among employees in the sample.

We also examined the correlation between active support and various background variables by using a bivariate correlation analysis, using Pearson´s r. with statistical significance assessed at the $p < 0.05$ level. The measures of active support served as dependent variables, while background variables such as gender, age, education level and experience served as independent variables. In addition, the correlation between the different measures of active support was examined to explore the covariation between different forms of support practices. However, it is important to note that statistical significance alone was not a considered sufficient for generalization, and the results were interpreted considering the sample´s representativeness.

A one-way analysis of variance (ANOVA) was used to examine whether there were significant differences in support practices between groups of employees based on their background variables. ANOVA enabled comparison of three or more groups simultaneously and served as a supplement to correlation analysis by highlighting group differences in support practices (Ringdal, 2025). Along with the F-statistic and p-values, effect sizes were reported using eta squared (η^2).

Finally, independent samples t-test were conducted to compare the means between regular teachers and special education teachers, with effect sizes reported using Cohen´s *d*. These groups were compared because they often have different roles, educational backgrounds and

responsibilities related to supporting students with ASD, which can affect the degree of active support in play and social interaction. This is particularly relevant in this study because a statistical difference between the groups does not necessarily imply a practically meaningful difference in support practices. The effect size can provide a more nuanced basis for assessing whether the differences have real significance for how schools organize support work.

Cronbach's alpha

To assess internal consistency in the composite variables, Cronbach's alpha (α) was calculated for each of the four supporting variables and the factor variable. The analysis showed the following values presented in Table 1.

[Insert Table 1 here]

Table 1. Cronbach's alpha for each of the variables

Variable	Cronbach's Alpha (α)	Rating
Support in play	α = .768	Satisfactory
Support in social interaction	α = .659	Acceptable
Factors influencing support practices	α = .607	Acceptable
Presence and observation	α = .511	Poor
Relational support and inclusion	α = .441	Poor

Presence and observation had a lower internal consistency, which can be explained by the fact that the variable only consists of two questions. This will generally give a lower alpha. The lowest alpha value was found for the variable *Relational support and inclusion*, which may be due to the variable capturing multiple dimensions. These limitations have been considered further in the study. Alpha was also measured to test whether all 15 questions in the Likert scale were well correlated. This was to ensure reliability, as alpha can provide some assurance that further analyses are based on possible solid scales (Thrane, 2025).

Thematic analysis

To complement the quantitative findings, two open-ended questions were included in the survey, so they respondents had the opportunity to elaborate qualitatively on their experiences. By combining numerical data and the participants' written descriptions, the data material can provide a broader and more nuanced picture of the research question (Bjørgen,

2024). The textual responses were analyzed through thematic analysis to systematically identify and organize recurring themes across the dataset. NVivo was used to organize, code and analyze the qualitative data.

Results

SPSS (Statistical Package for the Social Sciences) was used to analyze the data from the survey (IMB, Corp., 2013). The survey had a total of 25 questions, of which 8 were background questions, 2 questions were open-ended, and the remaining 15 questions were answered using a 6-point Likert scale. The dataset has been analyzed through descriptive analysis, correlation analysis, one-way analysis of variance and T-test. In addition, a brief thematic analysis was conducted on the two open questions from the survey.

Descriptive statistics for the Likert-scala

The 15 questions answered using the Likert scale have been categorized into 5 different variables, all of which are included in the active support index. Table 2 provides an overview of the descriptive statistics for these variables:

[Insert Table 2 here]

Table 2. Descriptive statistics for the variables

Variable	N	Mean	Median	SD
Presence and observation	440	4.60	4.50	1.011
Support in play	440	5.04	5.00	0.820
Support in social interaction	440	4.97	5.00	0.820
Relational support and inclusion	440	4.54	4.67	0.781
Factors influencing support practices	440	4.51	4.75	0.875

The average score varies from 4.51 to 5.04, which means that the respondents somewhat agree or partially agree with the statements in the survey. This indicates that the staff generally report a medium-high degree of support when it comes to play and social interaction for students with ASD. The variable *Support in play* (M=5.04, SD=0.820, N=440) has the highest average score of 5.04, which indicates that the respondents generally agree with the statements about their support practices in play for students with ASD. The variable *Support*

in social interaction (M=4.97, SD=0.820, N=440), had an average score close to 5, which also indicates a high degree of agreement in the statements about their support practices in social interaction. The *variables Presence and observation* (M=4.60, SD=1.011, N=440), *Relational support and inclusion* (M=4.54, SD=0.781, N=440) and *Factors that influence support practice* (M=4.51, SD=0.875, N=440) all have lower mean scores close to 4.5, indicating that the respondents agree, but to a slightly lesser extent than the support variables related to play and social interaction. The standard deviations are moderate, indicating relatively little spread in the responses. *Presence and observation* nevertheless stand out with the highest standard deviation (SD=1.011), which may indicate somewhat greater variation in the responses compared to the others.

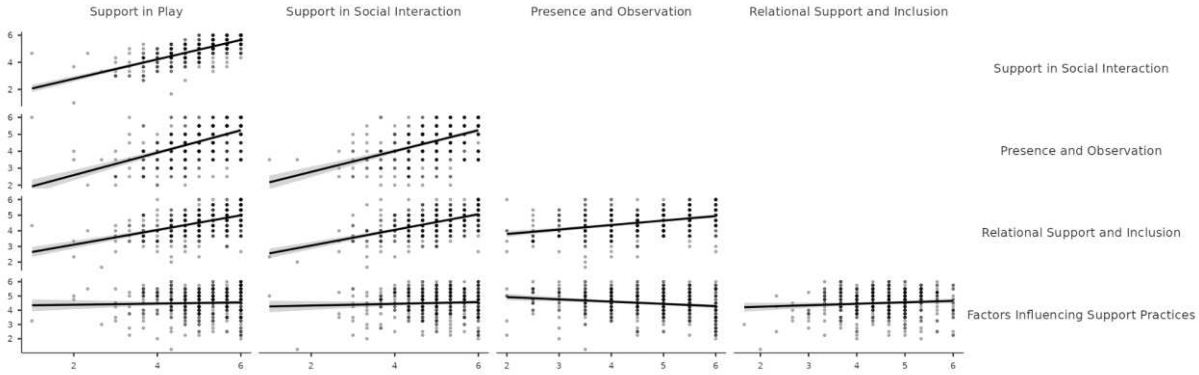
Correlation analysis

Figure 3a. Correlation analysis for the variables – statistics

	1	2	3	4	5
1 Presence and observation	–				
2 Support in play	.537***	–			
3 Support in social interaction	.498***	.718***	–		
4 Relational support and inclusion	.371***	.493***	.526***	–	
5 Factors influencing support practices	-.184***	.038	.057	.091	–

***p < .001

Figure 3b. Correlation analysis for the variables – graphs



The table and graph show correlations between the main variables. The strongest correlation was between *support in play* and *support in social interaction* (r = .718, p < .001), which may indicate that these practices largely occur together. *Presence and observation* had a moderate correlation to support in play (r = .537, p <.001) and to *support in social interaction* (r = .498,

p < .001). Furthermore, *support in social interaction* has a moderate correlation to *relational support and inclusion* (r = .526, p < .001). *Relational support and inclusion* have a moderate correlation *to support in play* (r = .493, p < .001), and a weak moderate correlation to *presence and observation* (r = .371, p < .001). *Factors influencing support practices* stand out among the main variables, as they correlate weakly or not significantly with the other main variables, except for the variable *presence and observation* with a weak negative correlation (r = -.184, p < .001).

[Insert Table 4 here]

Table 4. Correlation analysis – background and main variables

	Presence and observation	Support in play	Support in social interaction	Relational support and inclusion	Factors influencing support practices
Gender	-.051	**-.133****	**-.160*****	-.081	-.064
Age	.064	**.098***	**.133****	**.185*****	-.042
Education	-.083	-.033	.006	-.006	**.095***
Work experience	-.046	.040	.064	**.151****	.039
ExperienceASD	**.145****	**.165*****	**.186*****	**.142****	.067
Numbers of ASD-students	**.175*****	**.139****	**.160*****	.046	.060

Highlighted values indicate statistically significant correlations: *p <.05. **p <.01. ***p <.001.

The correlation analysis between background variables and the main variables revealed generally weak, but significant correlations (see Table 4). Specific experience with ASD students (*ExperienceASD*) showed the most consistent and significant positive correlations across nearly all support practices, ranging from r = .142 (p = .003) for *relational support and inclusion* to r = .186 (p < .001) for *support in social interaction*. No significant correlation was found between *ExperienceASD* and the factor variable.

Similarly, *Numbers of ASD-students* and *Age* displayed weak but statistically significant positive correlations with several support dimension. *Work experience* was only significantly correlated with *relational support and inclusion* (r = .151, p = .002). *Education* had no relationship with the main variables, showing only a negligible correlation with the factor variable (r = .095, p = .046). Overall, demographic and experiential background variables explained very little variation in the reported support practices.

One-Way ANOVA

[Insert Table 5 here]

Table 5. ANOVA-analysis – background variables and main variables

	Presence and observation		Support in play		Support in social interaction		Relational support and inclusion		Factors influencing support practices	
	F	η^2	F	η^2	F	η^2	F	η^2	F	η^2
Gender	1,142	.003	**7,940***	**.018**	**11,561***	**.026**	2,907	.007	1,792	.004
Age	0,957	.011	**2,913***	**.032**	**3,239***	**.036**	**4,371***	**.048**	1,393	.016
Workspace	**5,805***	**.026**	2,218	.010	1,670	.008	0,789	.004	0,609	.003
Education	1,602	.011	1,856	.013	0,892	.006	**3,973***	**.027**	2,056	.014
Job position	**8,481***	**.105**	**4,257***	**.056**	**4,627***	**.060**	1,177	.016	1,659	.022
Work-experience	0,506	.005	0,337	.003	1,046	.010	**2,618***	**.024**	0,461	.004
ExperienceASD	**3,251***	**.029**	**3,496***	**.031**	**4,415***	**.039**	**2,492***	**.022**	0,763	.007
Numbers of ASD-students	**5,806***	**.038**	**2,952***	**.020**	**3,905***	**.026**	0,619	.004	1,140	.008

The table shows F-values and effect sizes (η^2) for all combinations of background variables and main variables. Bold values indicate statistically significant findings ($p < .05$*).

The ANOVA-analysis revealed that demographic and general background variables (gender, age, work area, education, and work experience) explained minimal variance in support practices, yielding consistently small effect sizes (η^2) (See Table 5). Furthermore, significant effects for *age* and *work area* must be interpreted with caution due to severe sample size imbalances and highly skewed group distributions.

Job position had the strongest relationships, showing highly significant differences with large effect size for *presence and observation* ($\eta^2 = .105$), and medium effect sizes for *support in play* ($\eta^2 = .056$) and *support in social interaction* ($\eta^2 = .060$). Additionally, *number of ASD-students* and *ExperienceASD* showed widespread but weak significant effects across nearly all

support practices. Notably, *factors influencing support practice* showed non-significant results across all background variables.

Figure 6a. ANOVA – Presence and Observation and Job Position

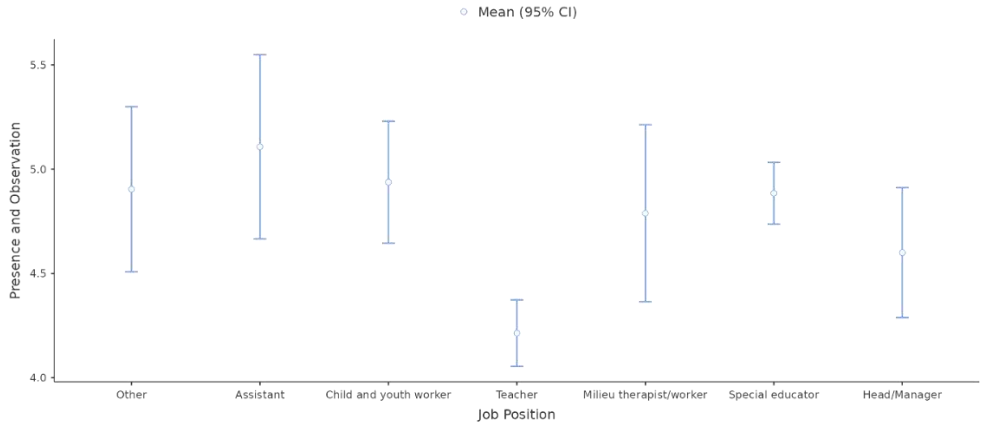


Figure 6b. ANOVA – Support in Play and Job Position

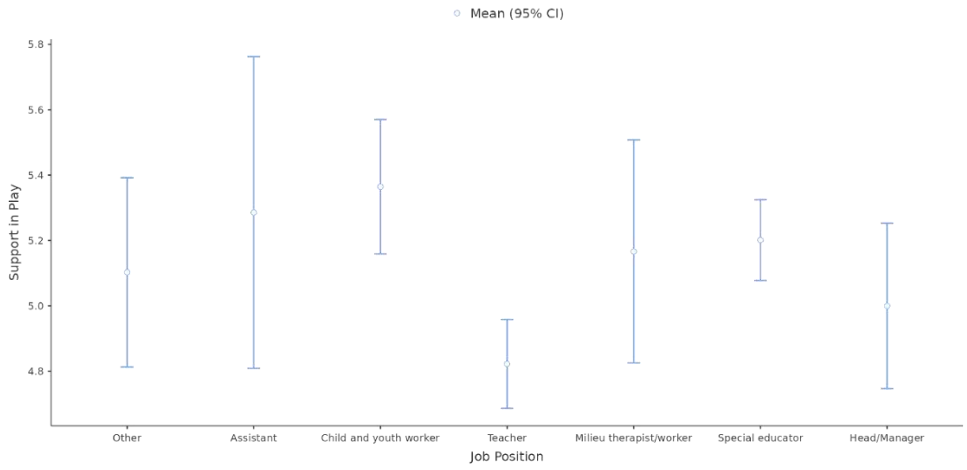
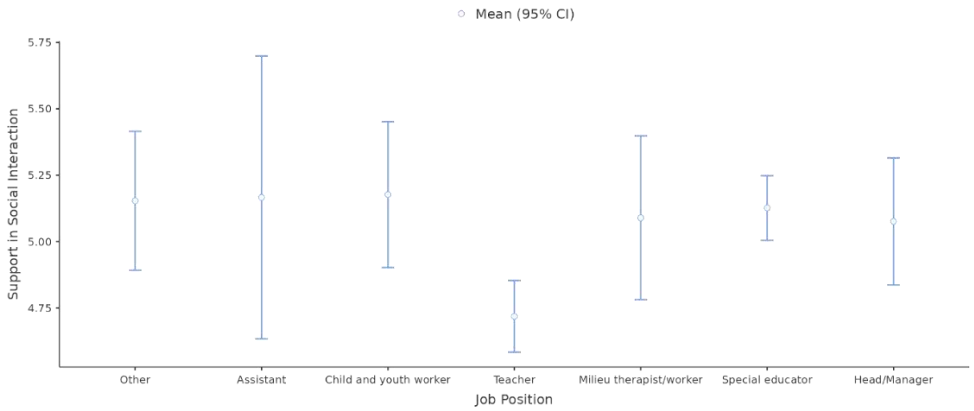


Figure 6c. ANOVA – Support in Social Interaction and Job Position



T-test

[Insert Table 7 here]

Table 7. T-test – Teacher and special educator

Variable	Group	N	Mean	Mean difference	p-value	Cohen´s d
Presence and observation	Teacher	173	4.21	-0.670	<.001	-0.683
	Special educator	134	4.88			
Support in play	Teacher	173	4.82	-0.379	<.001	-0.456
	Special educator	134	5.20			
Support in social interaction	Teacher	173	4.72	-0.408	<.001	-0.496
	Special educator	134	5.13			
Relational support and inclusion	Teacher	173	4.47	-0.186	.042	-0.235

	Special educator	134	4.65			
Factors influencing support practices	Teacher	173	4.46	-0.220	.027	-0.256
	Special educator	134	4.68			

The results presented in Table 7 show that special education teachers score significantly higher than teachers across all five variables. The most pronounced difference emerged for *Presence and observation* ($p < .001$, $d = 0.68$), indicating moderate to large effect. *Support in play* ($p < .001$, $d = 0.45$) and *Support in social interaction* ($p < .001$, $d = 0.5$) had both moderate effects. While differences for *Relational support and inclusion* ($d = 0.24$) and *Factors influencing support practices* ($d = 0.26$) were statistically significant, their practical significance was small.

Figure 8a. T-test – Presence and Observation

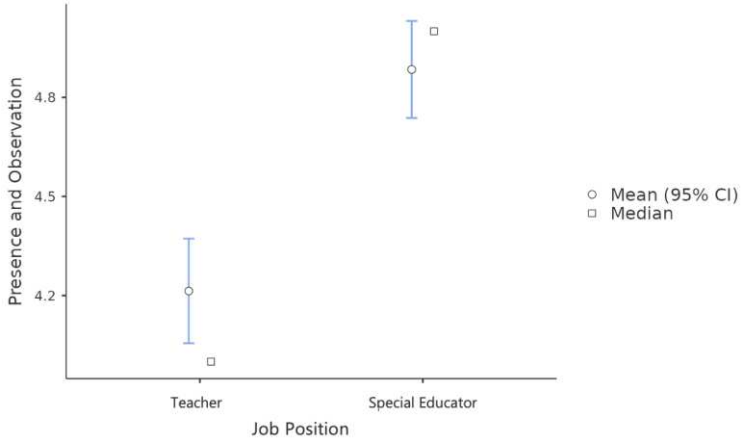


Figure 8b. T-test – Support in Play

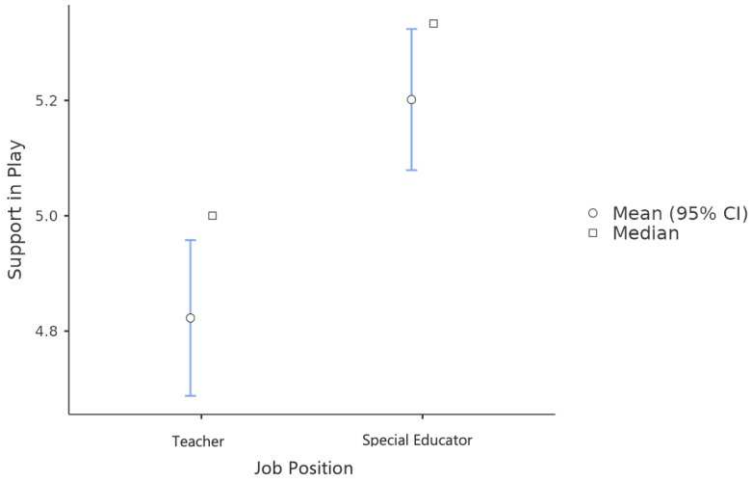
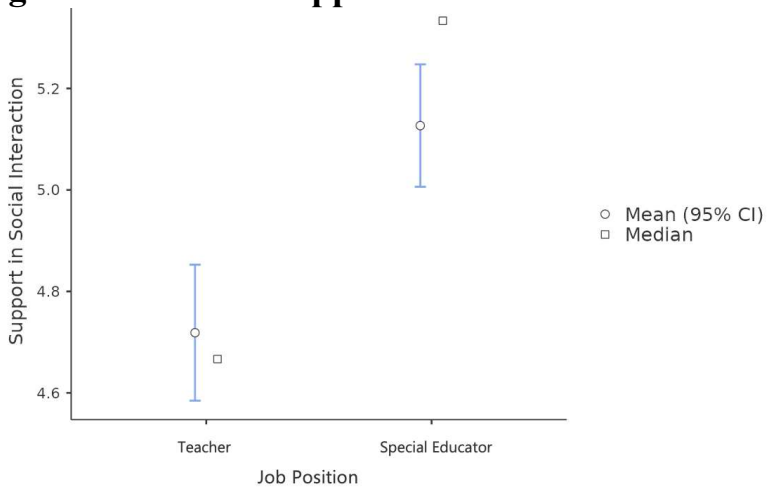


Figure 8c. T-test – Support in Social Interaction



Thematic analysis

Interventions

The first open-ended question was: What specific interventions or strategies do you use to support students with ASD in play and/or social interaction with peers?

The themes and findings identified in the responses are presented in Table 9a.

[Insert Table 9a here]

Table 9a. Thematic analysis – Interventions

Theme	Findings
"ASK" and visual support	Visual symbols (picture cards, pictograms, PECS, Widgit), technical aids (Tobii, speech machines, Grid, text-to-speech), signing, and theme/structuring boards. Kept visible and accessible to peers too, with adults sometimes interpreting between the student and classmates.
Social stories	mainly used beforehand to build predictability, sometimes afterward to process events, and occasionally one-on-one to work with emotions and social concepts. In text, cartoon, picture or film form.
Structure and predictability	Preparing students by clarifying rules and expectations; visual tools (daily/weekly plans, TEACCH structures); agreements and exit options; and breaks/sensory regulation. Predictability was also framed as expanding tolerance and enabling mastery experiences.

Small groups	Rotating playgroups to expand social networks, interest-matched groups, friend pairs/support groups, and structured play groups with known rules.
Adult support	Active play participation, observation and timely intervention, interpreting, gradual withdrawal, and guidance. Balancing closeness with stepping back to build independence.
Social skills training	Modeling, role-play and practice, social rules/codes, and emotional self-awareness. Usually one-on-one or small-group first, then generalized. Small talk and social codes emphasized especially in middle school.
Facilitation of play	Building on the student's interests (games, music, familiar topics), activities with simple rules, structured play, sensory adaptation, gradual introduction of new activities.
Inclusion	Reverse inclusion (peers join activities where the ASD student is the "expert"), raising peer awareness, classroom environment work, actively connecting students with shared interests, relationship-building.

Factors

The second open-ended question was: What factors do you experience as most crucial for how you can support students with ASD in play and social interaction?

The themes and findings identified in the responses are presented in Table 9b.

[Insert Table 9b here]

Table 9b. Thematic analysis – Factors

Theme	Findings
Time and resources	Lack of time for preparation, planning and direct follow-up. Time pressure from academic planning. Lack of personnel resources and physical facilities (group rooms). Limited access to “ASK”-materials and communication tools.
Staffing and adult density	Enough adults at work. One-to-one follow-up. Having the same adults that the student knows.

Competence and knowledge	The need for both professional and relational competence. Knowledge about ASD. Unskilled staff. Feeling like their own competence is insufficient.
Relationship and familiarity with the student	Knowing the student well (strengths, interests, triggers) is crucial to provide adequate support. Patient adults. Unfamiliar adults can cause conflicts and increase stress for ASD-students.
Collaboration and teamwork	Common understanding, similar practices among staff. Loyalty to agreed interventions. Agreements with students creates predictability. Collaboration with parents, gives relevant information about the student.
Class environment and inclusion	Class management, adults´ attitudes. Information and awareness of ASD among peers can increase acceptance and tolerance. Understanding among parents can affect children´s attitudes.
Structure and organization	A fixed routine and structure give predictability. Preparing in advance. Physical adaption (quiet rooms, noise reduction, breaks). Structured activities with clear rules.
Individual prerequisites	Functional level, cognitive capacity, motivation and daily routine vary from student to student. Some prefer to be alone and find social situations stressful.

Discussion

Framework conditions for support practices

Among the support variables, presence and observation shows the most scattered responses, suggesting employees experience and practice this form of support differently, though the variable's two-item measure limits precision. This is notable since presence and observation is arguably a prerequisite for good social support. Without the employee being present and observing the student's social interaction, it becomes challenging to assess when and how support should be provided. To understand what this variation may be about, it is appropriate to look more closely at what forms of presence employees themselves describe in their support practices.

The thematic analysis shows employees describe several forms of presence: active participation in play, distant observation, interpretation and bridging, guidance, and gradual

withdrawal. This corresponds to Conn's (2018) three roles: mediator (intervening in misunderstandings), active play partner (bridging through direct participation), and facilitator (enabling inclusion without directly joining). Observation underlies all three roles, giving staff insight into a child's intentions and pace to judge when to intervene (Conn, 2018; Tsou et al., 2024). Respondents highlighted balancing closeness with withdrawal so adult support doesn't disrupt play's natural social dynamics.

Most employees feel they have sufficient time to be present in students' play, though answers are scattered, and a similar majority also somewhat agree that time pressure limits their ability to give good social support, suggesting time is available but pressured. Time was the most frequently cited factor affecting support practice in the thematic analysis. Neglected time for planning can come at the expense of social-interaction work, which is especially costly for ASD students given that patience is essential for their learning and relationship-building (Bolourian et al., 2021). Teachers balancing an entire class find this especially hard (Al Jaffal, 2022), sometimes resorting to removing the student from the classroom. This can nevertheless contribute to several consequences for inclusion, as the student then misses out on the social interaction that naturally occurs in classroom settings.

Most respondents somewhat agree class size limits follow-up of ASD students, though answers are widely spread. This difference can possibly be linked to the responsibilities of employees in the classroom, where the teacher has a whole-class responsibility and special educators are responsible for individual students or a smaller group. Class size wasn't directly cited in the thematic analysis, but physical adaptations like quiet rooms, noise reduction were seen as important, given many ASD students' sensory sensitivities (Ray-Kaeser et al., 2017). Concrete instrumental support (Cohen & Wills, 1985), fixed routines, and breaks help regulate students and prevent overstimulation, making them more receptive to social opportunities (Gledhill & Currie, 2020).

Most respondents partly agree that staff availability affects support quality, which also reflected in the thematic analysis where over 40 respondents flagged sufficient staffing as crucial. Staffing shortages, and any accompanying funding gaps, are barriers to inclusion (Ahlers et al., 2023). Staff working most closely with high-need children are often the least qualified (Hasson et al., 2022), frequently assistants or support teachers covering for the teacher (Ahlers et al., 2023). Respondents stressed the value of shared understanding and consistent practice across staff and expressed concern about unskilled staff working closely with ASD students, because a lack of ASD knowledge is itself a barrier to inclusion (Senoo et

al., 2024). Some respondents felt their own competence was insufficient, a significant finding, since low confidence can raise the threshold for providing support, which is especially risky for students dependent on adults for social inclusion. ASD students themselves have called for more knowledgeable staff (Rasmussen, 2025). Building this competence requires system-level prioritization by management, not just individual effort.

Applying Cohen and Wills' (1985) four types of support, resource limitations in school can be thought to affect the type of social support students with ASD receive. Instrumental and informational support is largely situational, meaning that employees intervene when conflicts arise to guide the student through challenges, and will likely persist even under resource constraints. Emotional support and belonging, which require time, proactive presence, and systematic relationship-building, are more easily deprioritized. This matches the pattern in the descriptive analysis, where employees scored higher on intervening in social challenges than on proactively initiating social connection. This finding suggests that support practices are more reactive than proactive, meaning that employees respond more to social challenges when they arise but work less preventively to promote social inclusion. With such a reactive form of support practice, it may contribute to the more demanding relational forms of support being downgraded when there is a lack of resources.

Consequently, this underlines the importance of capacity building in ensuring a more systematic approach to competence development. Because social inclusion is grounded in the fundamental rights of all children, these rights entail corresponding obligations at the state, municipal, and institutional levels.

Leadership holds the responsibility for establishing structures that facilitate professional learning communities within the school context. The goal is to foster professional development through experiential sharing and reflective practice. To successfully implement legislation and governing documents, all staff members must be actively engaged in this process. Moreover, a necessity further supported by findings identifying job position as the most significant background variable.

Background variables and support practices

The correlation analysis showed only weak correlations between the independent variables and the dependent variables, indicating that demographic factors such as age, education level, and general work experience co-vary only weakly with employees' support practices toward

students with ASD. Since the questionnaire measures reported behavior and experience rather than actual practice, these weak correlations do not necessarily mean such relationships don't exist but may reflect the method's limits in capturing the complexity of support in practice.

An important exception is specific experience with ASD students. Both ASD-experience and the number of ASD students worked with daily are positively associated with support practices across several dimensions, whereas general work experience showed only a weak association with one support variable. This suggests that ASD-specific experience matters more than general work experience. This may indicate that it is the quality and relevance of experience that counts, and not the number of years worked in school.

Staff with more ASD-related knowledge and experience likely develop greater confidence and pattern-recognition through repeated exposure, reducing uncertainty in complex social situations. This experiential competence develops largely through practice, formal training, or both. However, individual experience alone is not enough. ASD-knowledge must also be built at the system level, through collaboration across professions that challenges and develops pedagogical practice further (Øen, 2024).

General work experience does not automatically provide staff to support ASD students' unique social challenges, such as limited interest in peers (APA, 2022) or gaps in essential social skills (Alferez-Pastor et al., 2025). Cohen and Wills (1985) emphasize informational support, which is about getting help to understand and cope with challenges, as key to social belonging, which requires the support provider to understand the student's needs. Support that isn't ASD-appropriate can be counterproductive, especially since these students often already find social situations stressful (Tsou et al., 2024). The buffering model (Cohen & Wills, 1985) holds that social support is especially protective under stress. For students with ASD, who may encounter sensory, social, and organizational stressors, poorly adapted support can lose its protective effect or even increase stress (Helsedirektoratet, 2021).

Turning to the variance analysis, job position shows the largest differences in support practices, particularly for presence and observation, with smaller but still meaningful differences for support in play and social interaction. Job position shows no significant difference for relational support and inclusion, suggesting this type of support may depend more on individual attitudes than structural role, though lower internal consistency for this variable may also play a role. These patterns likely reflect that different positions carry different structural roles and access to students' social situations. A concrete example of this is

the role of the assistant during recess. It is often these employees who follow the students out and thus gain an insight into the social interaction that takes place naturally in the schoolyard. This may help to explain why position shows particularly large differences in terms of presence and observation.

Prior research suggests staff working closely with ASD students often experience a competence gap (Hasson et al., 2022), so one might expect ASD-specific experience to relate to perceived structural barriers. However, the findings don't support this assumption. Correlations between all background variables and the factor variable were very low, and the variance analysis showed no significant differences across any background variable. This suggests structural barriers, such as lack of time, resources, and competence, are experienced evenly across all staff, regardless of individual background.

This points to the challenges being rooted in the school system's framework conditions rather than individual characteristics. Al Jaffal (2022) notes that insufficient resources and training limit staff's ability to build inclusive practices, making it hard to balance individual ASD follow-up with the class's broader needs. An assistant or other support person can be crucial in providing continuous support during teaching (Ahlers et al., 2023). Without such resources, social support risks being deprioritized, not because of lack of will or competence, but because the structural framework leaves too little room for it.

Teachers and special educators as active supporters

The t-test results show that special educators score significantly higher than teachers on all five main variables. The clearest difference concerns presence and observation, with a medium-to-large effect size indicating real practical significance. This variable relates to having time to be present in students' play and observing how students with ASD participate in social interaction with peers.

Several explanations can account for this pattern. Teachers have a broad general education aimed at the whole student group, while special education is more specialized and targets students with special needs (Uthus, 2020). Special educators often work more closely with individual students or small groups, which gives them more opportunity for observation, social insight, and relationship-building, along with knowledge specifically aimed at ASD. Teachers, by contrast, are responsible for an entire class and must balance teaching with social support, which limits their capacity for individual follow-up.

However, it is important to emphasize that close adult support does not automatically mean good support. Research shows children with ASD turn to teachers more often than to peers (Drye et al., 2024), and too much adult interaction can limit peer interaction. Staff should use their presence to build bridges to peers rather than replace peer interaction, since excessive adult support can contribute to weakening the student´s ability to participate independently. Structured approaches such as communication groups, play groups, or mentoring systems can support socialization (Conn, 2018). Here it is important that the staff does not have a controlling role, as this can reduce the spontaneous and natural relationships that can be formed between students. When staff use their presence to build bridges between the student with ASD and fellow students, this can promote inclusion without the adult taking over the interaction. This requires staff to be aware of and reflective about their role in support practice.

On support practices in play and social interaction, special educators scored moderately higher than teachers. This is relevant given that students with ASD often struggle to interpret social signals and maintain friendships, and show fewer initiatives in peer interaction (APA, 2022; Kaale & Nordahl-Hansen, 2025). Drawing on social support theory (Cohen & Wills, 1985), special educators' expertise likely equips them to provide targeted instrumental and informational support, while teachers may contribute more emotional support through daily whole-class interaction.

Access to special education competence can strengthen teachers' self-efficacy in meeting diverse student needs (Øen, 2024), for instance through visual aids like structured lesson plans (Bolourian et al., 2021; Cook & Ogden, 2022). However, an overly difficulty-oriented special education focus can also weaken teachers' self-efficacy (Øen, 2024). The teachers' lower average scores likely reflect established role expectations rather than lack of competence, since teachers generally scored high overall in the survey. Responsibility for social support in practice may be expected to be provided by special educators. This division of labor is concerning if it makes teachers more passive in inclusion work, since effective inclusion requires active support from all staff, not only special educators. Weak interdisciplinary collaboration between staff, parents, and other professionals further affects teachers' support practices for ASD inclusion (Senoo et al., 2024).

An important distinction remains between physical inclusion in the classroom and students' actual experience of social inclusion. Prior research points to a gap between what ASD students need and what schools provide (Rasmussen, 2025). Since this study relies on staff

self-assessment rather than student perspectives, high self-reported scores on relational support may not correspond to students' lived experience. Interventions focused solely on the child's individual skills rarely lead to more mutual interaction or friendships (Tsou et al., 2024), because genuine inclusion requires active peer engagement and not just adult-facilitated contact.

Overall, job position appears to be a significant factor in support practices, with special educators reporting somewhat more active support than teachers. This does not mean teachers provide no support, but that structural role differences shape how the support is delivered. These findings raise questions about how schools can better organize support work and strengthen collaboration between teachers and special educators, so that responsibility for the social support of students with ASD is distributed more evenly across staff.

Conclusion

Employees in primary schools report a medium to high degree of agreement when it comes to their support practices in play and social interaction for students with autism spectrum disorder. It seems that employees largely experience themselves as active supporters, especially when it comes to intervening in social challenges. However, employees report somewhat lower levels of initiative for social connection and presence in play. This pattern may indicate that employees are good at handling social challenges when they arise but work less systematically and preventively to promote social inclusion. For students with ASD who often need planned support to be able to participate in social interaction, a lack of prevention may limit real inclusion in the community.

Regarding factors that influence support practices, the findings show that ASD-specific experience has clearer connections with support practices than does general work experience. This suggests that relevant competence is more important than the number of years one has worked in the school. Position appears to be the background variable with the greatest importance, especially related to presence and observation. Special education teachers score somewhat higher than teachers on active support, which may reflect differences in structural frameworks, access to individual students and role expectations. Time pressure and lack of resources appear as barriers that affect all employees relatively equally, regardless of one's competence, experience or job title.

The correlation analysis showed that ASD-experience had clearer relationships with support practices, while general work experience covaried to a lesser extent with employees' support

practices. The ANOVA analysis showed that position was the background variable with the greatest significance for differences in support practices, especially related to presence and observation, while education level only showed significant differences for relational support and inclusion. The t-test further confirmed that special education teachers score higher than teachers on active support.

The findings have several implications for the field and practice. The fact that structural barriers affect all employees equally indicates that the challenges are not primarily about individual characteristics, but rather about framework conditions in the school system. This means that measures to strengthen employees' support practices should not be exclusively directed at the individual employee, but also at the structural conditions that shape their ability to exercise good social support. A more proactive and systematic inclusion effort will require targeted and ASD-specific competence development, better resources and clearer role expectations related to social support in school. The findings also emphasize the importance of collaboration between employees with different backgrounds and experience, to develop knowledge about ASD across the entire staff group. The results represent a contribution to further knowledge development about staffs' support practices towards students with ASD, rather than as definitive explanations.

Limitations and future research

There are some limitations to this study. First, its scope is limited to staffs´ *reported* experiences of their own support practices, not their actual behavior in specific situations. This can leave a possible gap between what employees say and what they do. Open-ended survey questions were meant to supplement this, but the resulting qualitative findings were limited, risking being overshadowed by the quantitative results.

The study is primarily quantitative, with statistical analysis taking priority. A larger or differently framed project would likely have drawn more heavily on the thematic analysis. This points to a need for future qualitative or mixed-methods studies to better understand how social support is applied in specific situations.

A further methodological limitation is the low internal consistency of two support variables, suggesting the items may not fully capture the same underlying construct. This highlights the fact that inclusion in play involves activities between classmates and peers. Further research designs involving children’s voices in general and those on the spectrum in particular, may

give insight into their experiences of participation, inclusion and play. Identifying potential positive factors and supportive contexts may provide a valuable insight when it comes to ensuring a safe, comprehensive and pedagogically suitable environment for all children no matter what the diagnosis.

Acknowledgement

The authors sincerely thank all participants who generously contributed their time and effort by completing the survey. Their participation and valuable responses were essential to the successful completion of this study.

Author contributions

J. E. N. conducted the main research and contributed to the conceptualization and design of the study, data collection, data analysis, interpretation of the results and preparation of the original manuscript. E. R. and C. J. contributed to the discussions of the content and writing the article. S. C. has been the main supervisor of the study and therefore contributed to data analysis, and review and editing of the manuscripts. All authors reviewed and approved the final version of the manuscript.

Competing interests statement

The authors declare no competing interests.

Data Availability

Due to confidentiality and personal data protection, the raw data are not publicly available; participants were informed that their responses would be treated confidentially and used for research purposes only. The questionnaire, codebook and analysis output tables are available from the corresponding author upon reasonable request.

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Supplementary Files

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