



Strategies for the improvement of social skills in students with autism spectrum disorder: Intensive support for inclusive education

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Introduction. Students with Autism Spectrum Disorder (ASD) typically have impaired social skills, which makes it difficult for them to become independent adults. For this reason, it is essential that the development of social skills is one of the main objectives within inclusive schools, allowing children with ASD to benefit from both education and interaction with their peers without ASD. *Objective.* Therefore, the aim of the study is to analyze the strategies used in inclusive contexts to promote the development of social skills in students with as ASD. *Method.* Twenty students with ASD aged 6-11 years participated in the study. Direct observation and conducting interviews with their respective teachers allowed us to analyze teaching strategies that improved the social skills of students with ASD within the mainstream school. *Results.* The results show that social interaction is initiated mostly by teachers and peers, and when a child with ASD starts, it is preferably directed toward a support teacher. In addition, social interaction is strongly influenced by the activity developed in the classroom and by the role of the support teacher, who becomes a key player. *Conclusion.* We concluded that the development of social skills in students with ASD depends on the degree of structuring of the spaces and activities where students with ASD participate, the role of the teacher, and the typology of curricular activities.

Keywords: social skills, autism spectrum disorder (ASD), inclusive education, teaching strategies, support teacher

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Introduction

According to the DSM-5-TR (Diagnostic and Statistical Manual of Mental Disorders), autism spectrum disorder (ASD) is a neurobiological developmental disorder that involves a set of persistent deficits in deficits of social communication and interaction, as well as restrictive and repetitive patterns of behavior, interests or activities causing clinically significant impairment in social or other important areas of current functioning (American Psychiatric Association, 2022). In this latest edition of the manual, the term 'spectrum' is key as it considers ASD as a continuum of difficulties and represents an advance in the development of more tailored diagnoses, including the level of support that children with ASD may need depending on their difficulties.

Undoubtedly, one of the most relevant characteristics of ASD is the great symptomatologic variability among people with ASD, as well as the need to detect early any of this symptomatology that could derive in an autism spectrum disorder in order to implement the most appropriate intervention program (Bejarano-Martín et al., 2020). The broad range of social deficits encompasses difficulties in the use of non-verbal behavior, initiating and responding to social interactions with both peers and adults in an effective and spontaneous way, sharing interests, and emotional and social reciprocity (Chan & Leung, 2022).

However, what is most important is the impact of these difficulties on the quality of life of students with ASD: impact on academic performance (Rabiner et al., 2016), maladaptive behavior (Øien & Eisemann, 2015), mental health problems related to loneliness and anxiety (Paula, 2015), or future quality of life (problems related to employment or higher education) (Øverland, et al., 2022).

Given the importance and impact of social relationships in ASD, there is abundant literature on intervention strategies and/or programs aimed at improving social skills both at early ages (Fuller & Kaiser, 2020) and in adolescence or adulthood (Atkinson-Jones & Hewitt, 2019). These social training programs aim to reduce social difficulties and facilitate interactions with peers and adults, promoting the participation of the person with ASD in their environment. Without claiming to be exhaustive, intervention programs or strategies could include: the TEACCH method (Mesibov & Howley, 2010), applied behavior analysis (ABA, Lovaas, 1987), social stories (Gray & Garand, 1993), modeling, methods and techniques with clear and structured instructions based on repetition, practice and reinforcement, and the use of augmentative and alternative communication systems when students have language difficulties (Hourcade et al., 2013).

To mitigate the impact of low social competence on the quality of life of people with ASD, it is essential to implement these intervention programs or strategies during their schooling process (Kylliäinen et al., 2020). However, there is controversy among researchers when it comes to implementing them in inclusive or more restrictive contexts (Reed, 2016). For Humphrey and

Symes (2013), schooling students with ASD in inclusive settings results in more isolation and loneliness as peers tend to spend time interacting with other peers, while students with ASD still experience a certain level of isolation, which may increase the risk of bullying and stigmatization. However, there is no doubt that inclusive environments increase the possibilities for social interaction, and the increased number of peers can lead to great variability of socially skilled behaviors to model (Rodríguez-Medina, 2016) and offer higher academic expectations. However, for the benefits of inclusive education for students with ASD to be evident, instructional processes need to be planned and sufficient support needs to be in place (Conn, 2019).

Local Context

Most education systems in Europe are guided by the principles of inclusive education, following the requirements derived from the Convention on the Rights of Persons with Disabilities (United Nations, 2006). In Spain, specifically in Catalonia where this article is contextualized, students with ASD have two options in their schooling: a special education school (schools for children with ASD and other forms of disabilities whose educational needs – and for very varied reasons – do not find an answer in mainstream school) and a mainstream school (school that provides learning opportunities for all people, regardless of whether or not they have ASD or other disabilities). With Decree 150/2017 of the Department of Education (Generalitat de Catalunya, 2017), it is assumed that education in mainstream schools will be based on the principles of inclusive education, so that schools must adopt universal, additional, and intensive measures and support to facilitate the learning and participation of all students.

One of the measures articulated as a resource for schools is Intensive Support for Inclusive Education (SIEI). The SIEI is a support measure for pupils with severe and permanent special educational needs, who may be enrolled in special education centers, which includes the provision of human and material resources for the school. Its aim is to ensure the comprehensive development of all pupils, which necessarily involves the development of collaborative processes between teachers, support teachers, families, and external psycho-pedagogical and social services. Support teachers are licensed teachers who acquire knowledge about autism with formal training, and their role is to develop actions that facilitate learning, socialization, and participation in a regular classroom and in a center for students with needs. Depending on the school, this support can be organized in two ways: either as support for pupils with special educational needs in a regular classroom or as support for pupils with special educational needs in a specific classroom.

Our aim is to analyze the methodological strategies used in inclusive contexts to promote the development of social skills in students with ASD.

In doing so, we aim to answer the following research questions: What kind of teaching strategies are commonly used at school? Are there differences between those used in the regular classroom with SIEI support and those used in the specific SIEI classroom? Our contribution will allow us to identify the use of teaching strategies for the development of social skills in inclusive contexts (more or less restrictive) as well as to promote their implementation taking into account the role that support can have in a mainstream school.

Method

This study was carried out under a constructivist worldview as individuals (teachers and students) develop subjective and multiple understandings or meanings of the phenomena in their experience (Lincoln et al., 2011). Likewise, these subjective understandings are constructed socially and historically. Constructivists pay attention to the participants' perspectives in specific contexts to inductively generate a theory (model), pattern, or interpretation.

On the other hand, qualitative research, which measures the thinking or viewpoint of the informant (Bisquerra, 2014), is to obtain an in-depth perspective and emphasize the individual views in order to understand the phenomenon (support and strategies to develop social interactions with students with ASD).

Participants

The participants belonged to three primary schools (A, B, and C) in the metropolitan area of Barcelona (Spain). The selection of the research sample was based on a non-probabilistic and intentional sampling, according to the following criteria: public primary schools linked to an inclusive project with the SIEI that had students with ASD.

In schools A and B, the SIEI provided support in the regular classroom. Each school had 50 teachers; two of them had the role of support teachers. Both had specific training in Special Education and ASD.

In school C, the SIEI provided support in the regular classroom and in a specific classroom, which was attended by four pupils with ASD and other pupils with other learning difficulties (for example, ADHD). Out of the total of 36 teachers in this school, two teachers played the role of support teachers: one exclusively for students with ASD and one for students with other learning difficulties. Both had specific training in special education and ASD.

Schools A, B, and C had seven, five, and eight pupils with ASD respectively, and the number of pupils per class ranged from 25 to 27.

To characterize the sample of the 20 students with ASD, they were administered the Autism Diagnostic Interview (ADI-R) (Le Couteur et al., 2006) to confirm their diagnosis, and the Wechsler Intelligence Scale for Children (WISC-IV) (Wechsler, 2005) to determine their IQ. In addition, the Social Communication Questionnaire

(SCQ, Rutter et al., 2019) was administered to the guardians of students with ASD to determine the level of severity of ASD symptoms.

It should be noted that families were previously informed that the present research would be carried out and were asked for their consent for their children's participation. Subsequently, students were also informed to participate in the study. Furthermore, they were informed that the data obtained would be treated anonymously, from an ethical perspective, and for research purposes.

Of the 20 pupils, 16 were boys and 4 were girls aged between 6 and 11. All the pupils with ASD attended the mainstream class corresponding to their age, and four of them regularly attended the SIEI classroom. According to the ADI-R, the students had a diagnosis of ASD, of which only 6 of them were high functioning, and according to the WISC-IV, the IQ of the 20 pupils ranged between 49 and 122. On the other hand, based on the Social Communication Questionnaire, except for four students, all students with ASD presented significant difficulties in communication and social functioning.

In relation to the participating teachers, of the ten teachers interviewed, four were support teachers (two from School C, one from School B, and one from School A), and six were tutor teachers in schools students with ASD attended (two per school). All were women aged between 29 and 43 with 4-19 years of teaching experience. All the teachers interviewed were trained in special educational needs (SEN), but only the support teachers had specific training in ASD. The criteria taken into account to define the purposive sample were (1) at least one support teacher per school; (2) they had at least three years of teaching experience in a regular classroom; (3) they currently teach students with ASD in a regular classroom and/or in the SIEI classroom. The adequacy of the sample was determined when theoretical saturation was reached, which occurred when no new or relevant data emerged for a category, and the categories were well developed in terms of their properties, dimensions, and variation.

Instruments

Firstly, to characterize the sample, the authors of the article administered the Autism Diagnostic Interview (ADI-R, Le Couteur et al., 2006) and the Wechsler Intelligence Scale for Children (WISC-IV, Wechsler, 2005) to the students with ASD. Then, the authors administered the Social Communication Questionnaire (SCQ, Rutter et al., 2019) to the guardians of students with ASD. Briefly, ADI-R is an interview useful for diagnosing autism; WISC-IV helps measure a child's intellectual ability; and SCQ can be helpful in treatment planning, educational intervention, and measurement of change over time.

In addition, the research data were obtained from interviews with teachers and direct observation of students with ASD in their classrooms.

The semi-structured interview consisted of 21 open-ended questions obtained after reviewing the literature about inclusive schools, students with ASD, and common methodological strategies used with students with ASD. Then, seven randomly

selected university professors specializing in ASD checked whether the questions were understood, whether they responded to the stated objective, and whether they were clear, coherent, and relevant (points from 1 to 5). Once the professors scored each question, an average was made that allowed establishing a continuum where the question could be framed from inadequate to very appropriate. Finally, the authors elaborated on the final interview, along with the categorization, coding, and description of the codes. The authors applied this interview to ten teachers and two external support services: both of them were members of the centers' psychopedagogical guidance and counseling team.

The interviews took place in each of the schools and were conducted by two of the authors over four months during school hours. They lasted an average of 52 minutes and were recorded with a tape recorder, with the participants' consent.

The observation was non-participatory and was carried out with the aim of, on the one hand, obtaining information on the methodological strategies used by the teachers and, on the other, corroborating, understanding, and complementing the information obtained in the interviews.

The 20 students with ASD were observed both in the regular classroom, with and without support teachers, and in the specific classroom of the SIEI (school C). They were recorded with a video camera, with the prior consent of the parents and the school. Each student with ASD was recorded for 2h30' in the classrooms, combining one or two teachers in the classroom, and 30' in the playground. In addition, students with ASD in school C were videotaped for 1h30' in the SIEI classroom. The video recordings were made by the authors over a period of five months.

Data analysis

Two matrices were created for the analysis of the data from the interview and observation, which included categories and subcategories linked to the objectives. In the case of the interview, the categories generated were professional data, teaching experience and specific training in ASD; their conception of inclusion and pupils with ASD; the organization of the center to cater for diversity; the development of language and social skills of pupils with ASD; teaching strategies and, finally, proposals for improvement. In relation to observation, the categories were: social interaction, behaviors, and emotions; communicative skills and discourse pragmatics; and teaching strategies.

The matrix created for the analysis of the interviews is presented in Table 1.

Table 1*Interviews: Categories and subcategories*

Categories	Subcategories	Items
Personal and professional data	Age	Questions 1 to 7
	Gender	
	Academic qualifications	
	Years of teaching experience	
	Specific training in ASD	
Inclusion concept and students with ASD	Characteristics of Inclusion	Questions 8 to 10
	Characteristics of students with ASD	
Organization of the school to attend to diversity	Organization of support	Questions 11 to 14
	Role of the support teacher	
Development of social skills of students with ASD and teaching strategies	Specification of classroom strategies for the development of social skills for students with ASD.	Questions 15 to 20
Proposals for improvement	Concretization of proposals for improvement in the intervention with students with ASD, according to their social skills.	Question 21

In Table 2, three categories were established in the matrix with the corresponding subcategories, with regard to observation.

The textual and visual data from the instruments were assigned to the categories and subcategories, and then a coding process of the former was carried out (Gibbs, 2012), using MAXQDA computer software (version 17) in the case of the interview.

Table 2*Observation: Categories and subcategories*

Categories	Subcategories
Social interactions: behaviors and emotions	Proximity of the student with ASD to the adult and his or her peers
	Eye contact of the student with ASD with the adult and his or her peers
	Sharing (objects and activities)
	Bullying
	Emotional capacity (regulation, expression, and understanding)
	Inflexibility (inability to adopt the listener's perspective, to understand how others may feel or think. Inability to adapt behavior to the demands of the context)
	Use of non-verbal behaviors
	Establishment of social relations
	Enjoy
	Social-emotional reciprocity
	Spontaneous and varied imaginative social play
	Disruptive behavior with adults and peers
	Peer response to student behavior with ASD
	Absorbing concern or circumscribed pattern of interest
	Apparently compulsive adherence to non-functional routines or rituals
	Concerns about parts of objects and non-functional elements of materials
Stereotyped and repetitive motor mannerisms	
Communication skills: Pragmatics of discourse	Initiation of interaction with the adult and his or her peers
	Demand for problem-solving with adults and their peers
	Verbal communication with the adult and peers
	Non-verbal communication with the adult and peers
	Use of alternative and augmentative communication systems
	Respect for the right to speak
	Verbal language delay (lack or delay of spoken language and inability to compensate for this lack by gestures)
	Maintaining a conversation (relative ability to initiate or sustain a conversational exchange, or initiate or respond to a conversation)
	Stereotypical, repetitive and idiosyncratic speech

Categories	Subcategories
Teaching strategies	Groupings
	Visual aids
	Anticipation of activities
	Non-verbal communication
	Verbal communication
	Define goals and objectives
	Give them time
	Transition space
	Didactic structure
	Physical structure of the space
	Generalization of learning
	Disruptive behavior management
	Social stories
	Direct instruction
	Limiting sensory overload
	Modelling
	Clear rules and boundaries
	Clear openness and closures
	Active participation
	Role-playing
Routines	

Results

In accordance with the objectives, this results section analyses the characteristics of the social skills of pupils with ASD detected, as well as the teaching strategies used, with special emphasis on the role of teachers.

Students with ASD: Characteristics

From the observations and interviews, the presence of typical symptomatology and behaviors of this disorder was detected, although with great variability among students with ASD. Table 3 shows the number of subjects who showed some of the main characteristics recorded during the observation.

Table 3*Characteristics of students with ASD*

Characteristics	School A	School B	School C
Establishing social relationships	7	5	8
Sharing	6	3	5
Beginning of interaction with adult and peers	3	4	3
Demand for problem-solving	4	4	6
Holds a conversation	7	7	6
Inflexibility	6	4	7
Disruptive behavior with adults and peers	0	1	1
Bullying*	0	0	0
Verbal communication	7	5	8
Delay in verbal language	7	5	8
Stereotyped, repetitive, and idiosyncratic speech	6	5	7
Respect for turn-taking	6	5	7
Use of non-verbal behaviors	7	5	5
Proximity of the student with ASD to adults and peers	7	5	8
Visual contact of the student with ASD with adults and peers	7	5	8
Use of alternative and augmentative communication systems	0	0	0
Emotional competence	5	5	5
Enjoyment	6	5	7
Social-emotional reciprocity	4	3	4
Engrossed preoccupation or circumscribed pattern of interests	1	1	2
Adherence to non-functional routines or rituals	2	1	2
Stereotyped and repetitive motor mannerisms	0	0	2
Preoccupations with parts of objects and non-functional elements of materials	3	3	4
Spontaneous and varied imaginative social play	2	1	2

* Note: Students with ASD experience bullying from their peers.

As can be seen in the table, students with ASD have difficulties in establishing social relationships when initiating interaction, asking for help or an object, showing something (e.g., the activity performed), and sharing information or material.

Both in the regular classroom and in the SIEI classroom, social interaction is mostly initiated by the support teacher or the tutor. However, only when there is a demand for problem-solving do 10 of the 20 students with ASD initiate interaction and mostly seek support from teachers, especially the support teacher. Furthermore, all students with ASD have difficulties interacting with their peers, especially when they have to initiate the interaction. However, if the interaction is initiated by their peers, students with ASD tend to maintain it. Only 4 out of 20 students initiate the interaction in time to make a request to their peers; however, even if the response given by peers to students with ASD is positive, if the support teacher is very close in this situation, the request is always directed to the referring adult.

Tutor 2 – School A: Interaction is much more with the adults in the class than with their classmates.

Both in the regular classroom and in the SIEI classroom, social interaction is heavily mediated by the activity they carry out with their peers and the role of the support teacher, although teachers tend to place the student with ASD in a group that favors social interaction and learning:

Support teacher 1 – School B: What we are interested in is that they help each other, that they also have opportunities to be helped, but at the same time they also have opportunities to help others [...] and that the groups facilitate interaction, that they help them and that they are receptive.

Likewise, there is a tendency on the part of students with ASD to be inflexible in the face of changes proposed by their peers, especially in unstructured contexts. Nevertheless, both in the regular classroom and in the SIEI classroom, it can be observed that they tend to accept changes in tasks proposed by the tutor or support teacher, although these changes may provoke disruptive behavior, as exemplified by the following quote.

Tutor 2 – School A: As it is a rigidity due to the disorder, ...it is difficult for him to change activities.

On the other hand, during the observation sessions, no bullying situations were detected, perhaps due to the greater presence of adults in the classroom. In this sense, the teachers point out that pupils with ASD tend to be overprotected by some classmates.

On the other hand, the language used in social interactions, both by students with ASD and by their peers and teachers, is verbal and non-verbal. However, in students with ASD, there is a clear predominance of non-verbal language over verbal language, as the latter tends to be altered, extremely brief, stereotyped, and repetitive. It should be added that structured environments

promote the use of verbal language, either because of the demands made by teachers on their pupils, the physical proximity of classmates in the classroom, or the need to collaborate in a specific task. This fact is also evident when it comes to having a conversation, respecting turns of speech and maintaining eye contact, which are more likely to be maintained with adults than with peers.

Support Teacher 1 – School A: She can talk, okay? The problem is... maintaining a dialogue... with her difficulties in expressing what she wants to say and trying this, establishing a dialogue with others...

On the emotional level, students with ASD do not particularly enjoy the activities proposed in the classroom, apart from those that are part of their stereotyped interests. Only one child engages in occasional, brief, and spontaneous imaginative play.

However, 15 of the 20 children with ASD are usually able to regulate their emotions in the classroom and maintain a generally positive emotional expression, although it is true that they have more difficulties than their peers in maintaining this state. However, the greatest difficulties are found in emotional understanding: only three pupils are able to ask for an explanation of what happens when they do not understand or do not agree with something.

Finally, it is observed that structured environments favor children with ASD to maintain less adherence to non-functional rituals and less preoccupation with non-functional elements of materials.

Teaching strategies: The role of the teacher

In relation to teaching strategies, teachers use a wide variety of resources and strategies that are generally used with these learners, especially the structuring of activities and space, the establishment of routines and visual aids. According to teachers, the strategies are applied in an inclusive setting following the principles of inclusive education. However, there are nuances. While all agree that inclusive education is about facilitating the participation and learning of all learners, the focus of intervention is on learners with special educational needs, especially in the case of support teachers. In Table 4, the methodological strategies were identified during the observations and interviews.

Table 4
Teaching strategies

Teaching strategies	School A	School B	School C (regular class)	School C (SIEI)
Groupings	Group-small group-peers	Group-small group-peers	Group-small group-peers	Small group
Visual aids	Yes	Yes	Yes	Yes
Anticipation of activities	Yes	Yes	Yes	Yes
Non-verbal communication*	Yes	Yes	Yes	Yes
Verbal communication**	Yes	Yes	Yes	Yes
Define goals and objectives	Teacher-support teacher	Teacher-support teacher	Teacher-support teacher	Support teacher
Give them time	No	No	No	Yes
Transition space	Yes	Yes	Yes	Yes
Didactic structure	Yes	Yes	Yes	Yes
Physical structure of the space	Yes	Yes	Yes	Yes
Generalization of learning	No	No	No	No
Disruptive behavior management	Teacher-support teacher	Teacher-support teacher	Support teacher (outside classroom)	Support teacher
Social stories	No	No	No	Yes
Direct instruction	Yes	Yes	Yes	Yes
Limiting sensory overload	No	No	No	Yes
Modeling	Teacher-support teacher-peers	Teacher-support teacher-peers	Teacher-support teacher-peers	Support teacher
Clear rules and boundaries	Yes	Yes	Yes	Yes
Clear openness and closures	Yes	Yes	Yes	Yes
Active participation	No	Yes	No	No
Role-playing	No	No	No	Yes
Routines	Yes	Yes	Yes	Yes

* Note: Example: use of gestures

** Note: For example: use of simple sentences, use of clear verbal instructions, explaining metaphors, etc.

Firstly, students with ASD have curricular adaptations in all curricular areas specifically designed to promote social development in a cross-cutting manner.

However, these adaptations are excessively designed for pupils with ASD to carry out different activities from the rest of their classmates, especially for pupils with low IQ.

In all the schools, it is observed that the teaching structure, both in the ordinary classroom and in the SIEI classroom, consists of three elements: 1) the explanation of the contents; 2) the carrying out of the activities; and 3) the evaluation of the activity. However, within each of them, teachers establish more specific sequences (i.e. step-by-step) in the case of students with ASD, and especially with those with low cognitive functioning, where functional and error-free learning is promoted. Sequencing is carried out by both the tutor and the support teacher in the regular classroom in schools A and B; however, in school C only the support teacher carries out the sequencing, mainly in the specific SIEI classroom, where individual reinforcement activities are carried out, which are usually more manipulative, visual and symbolic play activities.

In all three schools, clear routines, openings, and closings are established, and activities are anticipated during the school day, both in the morning and in the afternoon.

The routine is managed by both the tutor and the support teacher in all three schools. However, greater flexibility is observed in schools A and B when it comes to introducing changes in the dynamics of the activity.

Schools tend to use visual aids for students with ASD as well as for other students. However, in school C, these aids are especially aimed at students with ASD with low cognitive functioning, and the support teacher becomes a key player in their use. However, it can be observed that the use of visual aids is generalized in the regular classroom, but it is subordinated to the transmission of information through the oral language of the teacher, which is clear, concise, repetitive, and accompanied by non-verbal language.

In all three schools, the organization of the classrooms favors the limitation of spaces and activities, with structured, fixed, and predictable environments for students with ASD, and where a transition space is provided. However, only in the SIEI classroom is there a limitation of sensory overload.

Finally, it should be noted that within the regular classroom in schools A and B, the tutor and the support teacher manage the classroom, supervise and help all students, and tend to ensure that students with low-functioning ASD carry out the same activity as their peers, but always adapted within the regular classroom. On the other hand, in school C, the support teacher is the only referent for students with low-functioning ASD. Therefore, she is the one who manages, supervises, helps, and establishes their objectives, prioritizing different activities from those of their peers. In addition, there is a greater tendency to take students with low-functioning ASD out of the regular classroom so that they receive more individualized support in the SIEI classroom.

Discussion

As the results show, the diversification of educational needs related to social interaction in students with ASD is evident, so it is necessary to organize support to minimize its consequences on the comprehensive development of students with ASD from a holistic perspective. This variability in the characteristics of students with ASD implies the search for diversified methodological strategies on the part of teachers, which are often based on their criteria, wisdom, and experiences (Chorzempa et al., 2019). However, the implementation of these methodological strategies is influenced by the culture of the school and its own organizational structure. One aspect that is particularly relevant is the location of students with ASD in the school. While, for Maich and Belcher (2012), students with ASD in mainstream schools tend to be on the periphery of social networks within the regular classroom and have smaller social networks compared to their peers without ASD, for Lüddeckens (2021), the placement of students with ASD in the regular classroom not only facilitates their participation and interaction but also benefits the development of social relationships among the whole student body. We have evidence that the key is where the intervention process is focused: on the student with ASD or on the context. A change of perspective is needed, a kaleidoscopic focus, which contemplates different possibilities, since, based on our results, the placement in the specific classroom for students with ASD is not so much a function of the needs of the students as of the organization and culture of the center (Arnaiz, 2019; Iris Centre, 2023; Tynan & Davy, 2021; Young & Cleveland, 2022). Schools tend to use many of the methodological strategies described in the literature. In this sense, as the results show, schools usually have a wide range of strategies drawn from different specific programs for students with ASD (Barnett et al., 2020; Hersh & Elley, 2019). This eclecticism in intervention with students with ASD makes it difficult to understand its effectiveness (Reed, 2016) and social validity (Callender et al., 2020), but provides flexibility for teachers (Jordan, 2008) because teachers can use many strategies or methods, not just one. For Conn (2019) and Berghs et al. (2019), the use of different teaching strategies would be more related to the teachers (training and attitude) and to the inclusive philosophy of the school, where the voices of ASD students are included, than to the placement in a regular or specific classroom for students with ASD. However, we observed the intensity of the application of these methodological strategies is subject to three factors. On the one hand, it is related to the degree of structuring of the spaces and activities in which students with ASD participate both in regular and specific classrooms. It should be taken into account that, in educational settings, students with ASD face changing schedules, unstructured spaces such as the lunchroom or the playground, and unclear and unstructured transitions or lack of physical space for students who need a time out or break. However, authors such as Hume (2007) or Tola et al. (2021) highlight the

importance of structuring, predictability, and routine or transition spaces, to name a few, as we confirmed.

This leads to the need to provide explicit instruction, targeted interventions, and authentic opportunities that foster positive interactions of students with ASD with their peers, although according to Zeedyk et al. (2021), teacher efforts for supporting peer socialization do not have to be specialized ASD interventions to be effective. Nevertheless, we consider that explanation, modeling, and subsequent evaluation or reflection on the interaction are basic for learning in the case of students with ASD.

It is interesting to note that support teachers in the specific classroom can develop some specific strategies, such as giving time to students with ASD or limiting sensory overload because they have time to focus on all the characteristics and peculiarities of students with ASD, provide a more structured environment and invest time and effort that cannot be provided in the ordinary classroom. In addition, they can tell social stories or carry out role-playing to improve the social skills of pupils with ASD. As Flujaš et al. (2023) point out, interventions for students with ASD must be intensive and include a large number of sessions, both weekly and extended over time, without forgetting that intervention in natural, every day, and functional contexts for children (not just structured ones) is widely necessary. Therefore, as we have observed, students with ASD should not have experiences only in the specific classroom, but it is crucial that they spend time in the regular classroom with their peers with the aim of generalizing their learning.

Finally, another factor to consider is the role of the teacher in the implementation of these methodological strategies. As we have observed, the social interaction of students with ASD is strongly influenced by the role of the adult, since the adult is the one who facilitates the students' inclusive experiences and determines their learning opportunities (Chou & Park, 2021). This affects not only the learning process but also the development of social competencies of students with ASD. The key is the role of the support teacher. If support is based on a dependency model (as we observed in School C), teachers tend to be more reactive than proactive to the educational needs of students. Although teachers feel that the presence of support teachers in the classroom increases student satisfaction, work efficiency, motivation, and attentiveness, there is increased contact with the support teacher, which may reduce the attention of students with ASD towards the tutor and be less independent (Rämä et al., 2020).

This dependence on support teachers is increased in the case of low-functioning students with ASD who attend specific classrooms (Farrell et al., 2010). This leads to less social interaction with peers, as, for them, students with ASD do not belong to their peer group. The solution is complex but undoubtedly requires a revision of the conception of support. Support should be conceived as support for learning rather than support for participation, that is, teachers

have to teach how to interact instead of intervening directly in participation, for example, through the formation of collaborative teams among teachers (Puigdemívol et al., 2019), fostering a positive environment that helps support and sustain students' social interaction (Boldsen, 2022). This implies that the tasks entrusted to support teachers are related to the design and adaptation of didactic material, curricular adaptation through Individual Plans, instruction, and problem-solving in the classroom (Echeita et al., 2013; Leytham et al., 2020). In this sense, the application of cooperative methodological strategies facilitates social interaction, where the role of the teacher becomes a mediator in the learning process and a reference for students with ASD. Therefore, it is necessary firstly to have well-trained teachers to work with them (Barnett et al., 2020; Van Der Steen et al., 2020). Secondly, team members need to be ready to share and work with all other professionals who are a part of the student's academic team (Sawchuk, 2019). Finally, it is necessary to play a crucial role in creating an effective, inclusive culture for students with ASD (DeMatthews et al., 2020).

Conclusions

It is evident that the variability of social behaviors of students with ASD implies the search for diversified methodological strategies on the part of teachers in primary schools. However, these strategies are mediated by the organizational structure of the school, so no option should be discarded as long as the principles of inclusive education are taken into account. Hence, the inclusive culture that is being developed in the school takes on special relevance.

Schools often use many of the methodological strategies described in the literature. However, their degree of implementation is subject to three factors. On the one hand, it is related to the degree of structuring of the spaces and activities in which students with ASD participate. Thus, for example, the structure of the SIEI classroom facilitates giving more time to students with ASD in the performance of activities or in limiting sensory overstimulation. Another factor to take into consideration is the role of the teacher in the implementation of these methodological strategies. As we have observed, the social interaction of students with ASD is highly influenced by the role of the adult. This affects not only the learning process but also the development of social competencies of students with ASD. The implementation of cooperative methodological strategies facilitates social interaction, where the role of the teacher becomes a mediator in the learning process and a reference for students with ASD. Finally, the typology of curricular activities also conditions the development of social interaction. In this sense, it would be appropriate to use more activities related to social stories and role-playing in the regular classroom to facilitate the generalization of learning for students with ASD.

Undoubtedly, the road is long and winding but the implementation of methodological strategies that facilitate the social interaction of students with ASD is beneficial and useful not only for these students but for all students in the regular classroom.

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Strategije za unapređivanje socijalnih veština kod učenika sa poremećajem iz spektra autizma: Intenzivna podrška za inkluzivno obrazovanje

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Uvod: Učenici sa poremećajem iz spektra autizma (PSA) obično imaju slabije razvijene socijalne veštine, što im otežava da postanu samostalni u odraslom dobu. Iz tog razloga neophodno je da razvoj socijalnih veština bude jedan od glavnih ciljeva u inkluzivnim školama, omogućavajući deci sa PSA da imaju koristi i od obrazovanja i od interakcije sa svojim vršnjacima bez PSA. *Cilj:* Stoga, cilj studije je da analizira strategije korišćene u inkluzivnim kontekstima za promociju razvoja socijalnih veština kod učenika sa PSA. *Metod:* U studiji učestvuje dvadeset učenika sa PSA uzrasta od šest do 11 godina. Direktno posmatranje i intervjui sa njihovim nastavnicima omogućili su analizu nastavnih strategija koje unapređuju socijalne veštine učenika sa PSA u redovnim školama. *Rezultati:* Socijalnu interakciju najčešće iniciraju nastavnici i vršnjaci, a kada dete sa PSA započne interakciju, ona je pretežno usmerena ka nastavniku koji pruža dodatnu podršku. Pored toga, socijalna interakcija je pod velikim uticajem aktivnosti u učionici i nastavnika koji pruža dodatnu podršku. *Zaključak:* Razvoj socijalnih veština kod učenika sa PSA zavisi od stepena strukturiranosti prostora i aktivnosti u kojima učestvuju učenici sa PSA, uloge nastavnika i vrste kurikularnih aktivnosti.

Ključne reči: socijalne veštine, poremećaj iz spektra autizma, inkluzivno obrazovanje, nastavne strategije, nastavnici koji pružaju podršku

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