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Teachers' needs in mainstream secondary schools regarding the inclusion of students with Autism Spectrum Disorder: a cross-country study

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ABSTRACT

The Dutch and Mexican education systems face different challenges in building inclusive schools, but in both countries, teachers play an essential role in the inclusion of students with special educational needs. This study therefore identifies the needs of mainstream secondary school teachers ($n = 79$) within both countries, specifically when teaching students with Autism Spectrum Disorder (ASD). Using Q methodology, we distinguished four specific teacher needs profiles for each country. In this article, we compare and contrast these different perspectives. Notably, most of the higher-ranked needs were not country-specific, despite the different organisation of school systems and ways in which inclusive education was implemented.

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Introduction

A worldwide aim is to create education suitable for all students. The Education 2030 agenda urges governments to focus their attention on teachers, as they play an essential part in achieving inclusive and equitable quality education (UNESCO 2015). Member states of the United Nations – such as the Netherlands and Mexico – have strived to follow international educational agreements, including those focusing on supporting teachers to fully implement inclusive education. However, these countries have faced several challenges while working on this implementation. For instance, Dutch pre-service teachers mentioned having mixed feelings about including children with Special Educational Needs (SEN), mostly because they feared lacking time for these students, having little support within the school, and a lack of knowledge or experience (Civitillo, De Moor, and Vervloed 2016). Although Dutch pre-service teachers have tried to embrace the 'uniqueness' and 'potential' of each student, exclusionary practices still take place at schools (van Doodewaard and Knoppers 2021). Similarly, the Mexican government has been lacking guidance on how to put inclusive

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education into practice, although the majority of educators (87%) believe in its merits (Francis et al. 2021; Lavin et al. 2022). Still, a major concern in pre-service Mexican teachers is their ability (or lack thereof) to pay attention to the needs of students with SEN (Forlin et al. 2010).

Teachers' years of teaching experience, training, and the student's specific educational needs influence the process of inclusion (de Boer, Pijl, and Minnaert 2011; Kurniawati et al. 2017; Russell, Scriney, and Smyth 2023). A common type of SEN in mainstream classrooms is Autism Spectrum Disorder (ASD), characterised by difficulties in social interaction and communication (American Psychiatric Association 2013). The shift toward inclusive education has led to a growing number of autistic learners being enrolled in mainstream schools (Garrad, Rayner, and Pedersen 2019; Ravet 2017; Whitaker 2007). Notably, these students are often perceived as 'requiring support' (Level 1 of support needs, based on the DSM-5 criteria) rather than requiring 'substantial' or 'very substantial' support (Levels 2 or 3; American Psychiatric Association 2013). This 'requiring support' classification aligns with earlier DSM-IV diagnoses such as Pervasive Developmental Disorder–Not Otherwise Specified or Asperger's Syndrome, which described individuals with social and communication difficulties who also had (above) average intellectual ability and relatively good language skills (Agyapong et al. 2010; Carrington, Templeton, and Papinczak 2003; Jarman and Rayner 2015; Ravet 2015; Walker et al. 2004). As a result, autistic learners with support needs at this level are more likely to be educated within mainstream settings, whereas those requiring a more specialised type of support often attend special education environments (Brede et al. 2017; Croydon et al. 2019).

According to parents, teachers, and school directors, the unique features of students with ASD, such as struggles in the social domain, collaborating with peers, and handling change, can make the process of inclusive education challenging (Goodall 2019; Stephenson et al. 2021). Furthermore, these difficulties differ from one student with ASD to another, which means that teachers need to tailor their approach in the classroom even more to support individual students. Of course, this influences the needs of teachers as well. In a study conducted in primary schools, Van Der Steen et al. (2020) found four different groups of professionals with specific requirements for educating autistic students. One group mostly wished to collaborate with others (i.e. colleagues or professionals) to optimally guide the student, a second group was eager to receive suggestions for their classes, a third group wanted to increase their confidence during their interactions with autistic students, and a fourth group mostly sought ideas to foster the social skills of these students. In line with this last group, teachers often seem to debate whether they should prioritise teaching social skills to students with ASD (Able et al. 2015), not only to improve their daily interactions but also because they believe the well-being of this group of learners highly depends on the relationships they establish with their peers (Danker, Strnadová, and Cumming 2019).

Previous studies have reported that teachers often feel they lack knowledge about ASD (Devi and Ganguly 2022; Ravet 2017), thereby distancing themselves from students with ASD (Blacher et al. 2014) and making the process of inclusion more complex. Pre-service teachers expressed fear of an autistic student being part of their class because they were unfamiliar about their needs or doubted their teaching strategies (Ravet 2017). Another study indicated that teachers' first emotions after finding out they would have a student with ASD in their classroom were frustration, anxiety, and anger, although with time

these feelings faded out as they learned by trial and error what worked for this student (Soto-Chodiman et al. 2012).

Most research discussing inclusive education of students with ASD has focused on primary education students (Saggers 2015). Yet, some authors point out the specific difficulties of the (mainstream) secondary education environment for these students, such as interacting with many different teachers (Aubineau and Blicharska 2020; Humphrey and Lewis 2008). Secondary school teachers have fewer opportunities to interact with their students and to get to know them well, even though research has found that students with ASD consider teachers as their main source of support (Saggers 2015). Surprisingly, only a few studies focus on the needs of secondary school teachers to optimally educate students with ASD. Therefore, the aim of this study was to provide insight on teachers' needs in two countries – the Netherlands and Mexico – so that stakeholders in the process of creating inclusive secondary schools (i.e. school directors and policymakers) can better support and equip teachers.

The Netherlands and Mexico were chosen for data collection due to both their similarities and differences in approaches to inclusive education, as well as the contextual factors that (potentially) influence teachers' abilities to provide optimal support for autistic students at the secondary education level. Regarding their similarities, both countries have signed international agreements such as the Salamanca Statement and the United Nations Convention on the Rights of Persons with Disabilities. Moreover, these two countries are working toward Sustainable Development Goal 4 (SDG4) from the United Nations and UNESCO's Incheon declaration of Education 2030. As such, in the Netherlands and Mexico the enrolment of students with SEN in mainstream education is encouraged (Diario Oficial de la Federación 2011; Gubbels, Coppens, and de Wolf 2018; UNESCO 2017). While the Dutch education system has been praised for its excellence (OECD 2016), the most recent State of Education report highlights the need to enhance teachers' skills to effectively support students, which requires a better understanding of their professional development needs (Inspectorate of Education 2023). Similarly, there is a concern about Mexican schools' capacity to meet the needs of a diverse student population, especially given the country's limited access to resources (García-Cedillo, Romero-Contreras, and Ramos-Abadie 2015). Regarding the differences between these countries, the expenditure in education from the Netherlands is considered relatively high (OECD 2024b), whereas Mexico's expenditure is comparatively low (OECD 2024a). In addition, teachers in Mexico have to face bigger class sizes, placing a limitation in their opportunities for meaningful one-on-one teacher-student interactions (OECD 2012).

To gain further understanding about how teachers in both contexts can enhance autistic students' school experiences, cross-country research is needed (García-Cedillo, Romero-Contreras, and Ramos-Abadie 2015). Therefore, the following research questions guided our study:

(1) Can we distinguish different need profiles for Dutch and Mexican mainstream secondary school teachers with regard to educating students with ASD?
(2) What are the similarities and differences between the needs of secondary school teachers from the Netherlands and Mexico?

Materials and methods

Participants

Secondary school teachers from the Netherlands and Mexico were approached to fill out an online questionnaire. Teachers were included if they taught (or previously taught) at least one student with ASD in a mainstream secondary school at the time of the study. The final sample consisted of 79 secondary school teachers: 43 from the Netherlands and 36 from Mexico (26 male participants, 53 female participants). Teachers' mean age was 40.6 years old ($SD = 10.7$, range 21–63) and on average they had 13.5 years of teaching experience ($SD = 9.1$, range 1–39).

The Dutch education system is generally divided into three main levels of secondary education: pre-vocational secondary education [called VMBO in Dutch] with four grades, senior general secondary education [called HAVO in Dutch] with five grades, and pre-university education [called VWO and Gymnasium in Dutch] with six grades. In this study, 18 Dutch teachers with a university Master's degree participated. They can teach all grades, at all levels. In addition, 20 Dutch teachers with an (applied) university Bachelor's degree participated. They can teach all four grades of pre-vocational secondary education, and the first three grades of senior general secondary education and pre-university education.

In Mexico, general secondary education lasts three years and is divided into first, second, and third grade. In addition, the system is divided into private and public schools. In this study, 19 Mexican teachers had a Bachelor's degree, 13 had a Master's degree, and four had a Ph.D. degree. The majority had given or were giving lessons to students with ASD across multiple grades ($n = 22$), while others had only taught students in the first grade ($n = 4$), second grade ($n = 8$), or third grade ($n = 2$). Furthermore, 13 Mexican teachers worked at a private secondary school and 23 at a public one.

Procedure

We used Q methodology to extract the subjective needs of teachers. In Q-studies, participants are asked to rank items based on the importance these items have to them (Watts and Stenner 2012). Mainstream secondary schools across the Netherlands and Mexico received an email with details of the study and a link that provided access to the Dutch or Spanish online Q-sort.

Participants were first provided with the information, consent form, and instructions to complete the online Q-sort in the programme Qualtrics. Ethical approval was granted by the authors' research institution. Participation was voluntary and anonymous. Teachers were asked for their age, gender, years of teaching experience, the grade(s) they taught, and their academic degree. Next, 49 statements of possible needs were presented to the participants on the left side of the screen. Participants had to drag and drop the statements in boxes labelled 'of little need', 'neutral' and 'definitely need' on the right side of the screen. Subsequently, participants were shown the statements they sorted in the 'of little need' box separately and were asked to rank these from 'I need them the least' to 'I slightly need them'. A similar procedure was followed for the statements that were ranked as 'neutral' and 'definitely need'. Each cell in the grid (Figure 1) could contain only 1 statement. After ranking all statements, participants had the

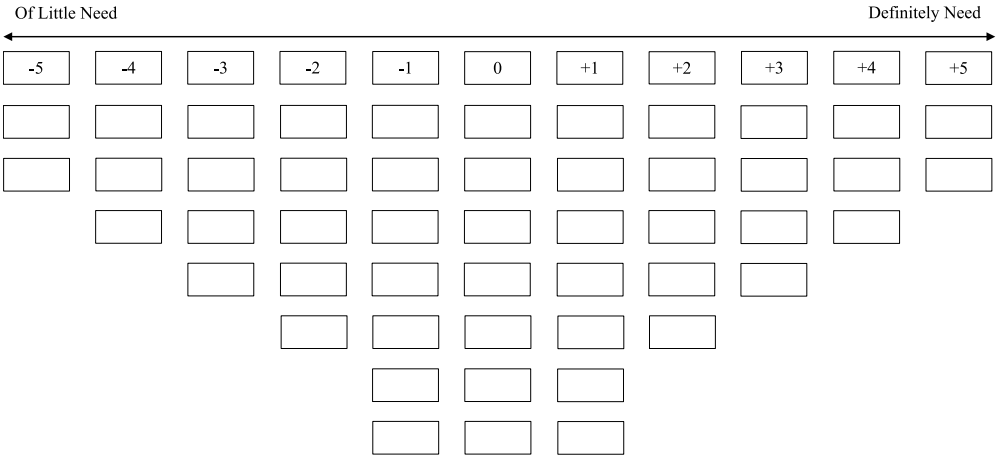

Figure 1. Q-sort grid.

option to explain their most and least important needs. The majority of participants (n = 66) responded to these open-ended questions.

Measurements-statements

We used the same instrument as Van Der Steen et al. (2020), who studied the needs of Dutch educators in primary schools. For the Mexican population, statements were translated to Spanish by a native speaker with experience in the secondary school environment. All statements were considered applicable to the secondary education context in both countries, except for one statement: '[I need] ways to track the student's progress (other than the typical pupil tracking system)', which was removed. The final Q-sort consisted of 49 statements of possible needs concerning educating students with ASD (see Table 1 for the full list of statements, translated into English).

Data analysis

The Q sorts of Dutch and Mexican teachers were entered and analysed separately in PQ Method software. We implemented a Centroid Factor Analysis with Varimax rotation (Watts and Stenner 2012). In Q methodology, a factor consists of several participants who sorted statements similarly. Multiple factor solutions (for both the Dutch and Mexican teachers) were explored based on the correlation between factors, the eigenvalues, the (cumulative) explained variance, the amount of teachers that comprised each group, and the interpretative value of the distinguishing statements (i.e. the statements that stand out because they are ranked particularly high or low). We used the weighted average Q sort of each group for its interpretation. Subsequently, factors were qualitatively analysed to explore in which ways the needs of Dutch and Mexican teachers differed within and between countries. Demographic data were also compared at this stage. Throughout this article, the number of a statement is indicated with a # followed by its average ranking within the factor (i.e. #15/5 means statement 15 is ranked as +5).

Table 1. Statements and the weighted average Q sorts for the factors of the Dutch and Mexican teachers.

	Dutch teachers				Mexican teachers			
Statement (I need …)	1	2	3	4	A	B	C	D
1. Ways to make the school environment less turbulent/chaotic	−3	−3	−3	**3**	**3**	**2**	−5	−4
2. Ways to organise impromptu learning moments without confusing the student	−2	4	−1	−2	0	0	**−2**	0
3. A method to organise individual instructions for the student in the classroom	**2**	**0**	**4**	1	**2**	**0**	−4	−2
4. Ways to help the student focus	2	3	2	**0**	**4**	**−1**	1	1
5. Suggestions to structure the daily programme and lessons for the student	−2	**−5**	−1	−4	1	0	0	**−3**
6. More time for pre-teaching the student	0	0	**3**	0	−3	−3	−4	−5
7. Ideas for visual support or study aids for the student during instruction and processing of the material	**0**	2	**−3**	3	2	3	1	**−1**
8. Ways to help the student deal with delayed attention of the teacher	2	0	1	0	2	0	1	1
9. Ways to help the student to work independently	1	−1	1	0	4	1	2	4
10. Ways to make the instruction understandable for the student	**4**	**−4**	**0**	4	**5**	**−2**	3	3
11. Ideas to help the student to flexibly deal with the study materials	2	**5**	1	1	−1	−3	−3	**2**
12. Ways to promote self-initiated questions of the student	**0**	5	**−3**	5	**−2**	−4	−5	**1**
13. Suggestions to connect lessons to the student's interests	**−1**	−3	−5	**2**	1	1	−1	0
14. Ideas to tailor the instruction/support to the strong points/talents of the student	1	2	**−2**	**5**	**5**	**1**	−1	−1
15. Suggestions to help the student to collaborate with classmates	**5**	−1	0	0	3	**−1**	**4**	3
16. Suggestions to help the student to make choices	1	**3**	**−2**	−1	1	1	**−1**	2
17. Suggestions for suitable rewards to reinforce positive behaviour of the student	**−4**	**2**	0	−4	−1	0	−2	−1
18. Ways to adjust learning tasks to the educational needs of the student	**1**	**−2**	3	4	3	2	**0**	2
19. Ways to give adequate feedback on the behaviour of the student	3	3	1	0	−1	−2	−1	−1
20. Suggestions to help a distracted/disruptive student to re-focus on the task	**1**	**3**	**−1**	**−5**	**4**	−2	0	0
21. Ways to deal with sensory hypo-or hyper-sensitivity of the student	3	**−4**	1	1	1	**−1**	1	1
22. Ideas to help the student reflect on his/her own work	0	**4**	1	3	0	−2	0	−2
23. Ways to support the social conversation skills of the student (such as starting or maintaining a conversation)	**5**	**−2**	**−5**	**1**	2	0	**4**	1
24. Ways to teach the student socially adequate behaviours (for example making eye contact)	**3**	**1**	−3	**−5**	**3**	−2	−2	−3
25. Ways to help the student to see another person's point of view	3	1	**−4**	2	0	**−5**	1	**4**
26. Suggestions to stimulate social activities or friendships of the student	**4**	−1	**−4**	**1**	2	−4	3	−3
27. Ideas to help other students to deal with the student's social behaviour	1	0	−2	−1	0	−1	**5**	−2
28. Input from parents to shape the lessons for the student	−1	−1	−1	**3**	**−1**	**2**	−3	−3
29. Ways to constructively communicate with parents of the student	−3	−1	−2	**2**	1	2	−4	−5
30. Ways to coordinate the action plans at school and at home	**−4**	**1**	**3**	**−1**	−2	−1	−3	−2
31. That my supervisor asks how things are going with this student	−5	−4	**−1**	−3	−5	**−5**	**1**	−4
32. That my coworkers ask how things are going with this student	−1	−3	0	−1	−4	−3	**0**	−4
33. To consult my supervisor or coworkers about this student	−1	0	**3**	**1**	−4	−4	−1	0
34. Assistance of coworkers when dealing with challenging behaviour of the student	−3	−3	**2**	−2	0	−1	**2**	−1
35. A joint responsibility to support this student	**0**	**4**	**5**	2	−1	0	2	1
36. A clear policy to share knowledge and collaborate within the school with regard to ASD	−1	2	2	1	**−1**	3	2	5
37. Opportunities to flexibly deal with the student with regard to school policy/rules	1	2	**0**	4	**0**	2	**−1**	1
38. School facilities like a time-out or quiet space for the student	0	1	**4**	**−2**	−2	−3	−3	**4**
39. Special educational materials for the student	**−4**	−2	−1	−2	**0**	3	2	3
40. Using/expanding the network of facilities around the school for the student	−2	0	**1**	−1	**−5**	−1	0	−1
41. Opportunities to administer tests within the school (for example intelligence tests)	−5	**−1**	−4	−4	**−4**	1	−2	0

(*Continued*)

Table 1. Continued.

Statement (I need …)	Dutch teachers 1	2	3	4	Mexican teachers A	B	C	D
42. An extra tutor for the student in the classroom (for example a teaching assistant)	−2	**−5**	**5**	−3	−3	**4**	0	−2
43. A specialist to support the student outside the classroom, such as a speech therapist	−2	−1	**2**	−1	−1	**4**	1	0
44. In-service training (refresher courses) related to ASD	0	−2	0	−1	1	4	4	**−1**
45. Textbooks with information about ASD	−3	−2	−2	−3	−2	**5**	−2	0
46. Opportunities to monitor and evaluate my didactic skills	2	1	**−1**	0	**−3**	**1**	**−1**	**5**
47. To feel more confident in contact with students with ASD	−1	0	0	−2	**−3**	1	3	2
48. Examples of effective teaching strategies for students with ASD (videos or class visits)	**4**	**1**	**2**	**−3**	1	3	**5**	2
49. To consult an internal or external specialist (for example a special education counsellor) about how to approach the student	−1	**1**	**4**	2	**−2**	5	3	3

Each number indicates the average sorting in each factor. The Dutch teachers are presented in factors 1–4 and the Mexican teachers are presented in factors A–D. The least important needs are given a score of −5 whereas the most important needs are scored as 5. The numbers marked in bold are distinguishing statements within the Dutch/Mexican participants.

Note: Adapted from 'Teaching students with Autism Spectrum Disorders: What are the needs of educational professionals?' by S. van der Steen, C. Geveke, A. Steenbakkers, and H. Steenbeek, 2020, Teaching and Teacher Education, 90. Copyright 2020 by Elsevier Ltd.

Results

For both the Dutch and Mexican teachers, a four-factor solution (i.e. four groups of teachers with similar within-group needs) was selected. Ten Dutch and eight Mexican teachers did not significantly and positively associate with a particular factor, while six Dutch and four Mexican teachers associated with two factors or more (see the supplementary materials). Therefore, these participants were excluded from further analysis.

RQ 1: needs of secondary school teachers in the Netherlands and Mexico

The average arrangement of statements can be found in Table 1. Below we provide a qualitative interpretation of each factor.

Dutch teachers factor 1: improving the social skills of my student (n = 11)

Teachers in factor 1 seemed mostly interested in enriching the (peer) interactions of students with ASD. Their most important needs were to find ways to boost the conversation skills of these students (#23/5) and to encourage collaborative work with peers (#15/5). For this, they believed they needed ideas on how to promote social activities or friendships (#26/4), foster socially adequate behaviours (#24/3), and support the student to understand other students' viewpoints (#25/3).

The teachers in factor 1 seemed confident when teaching students with ASD, since they expressed less need for classroom support from an extra tutor (#42/-2) or assistance from colleagues (#34/-3). Support from other specialists, such as a speech therapist (#43/-2), was also considered less important. Other distinguishing statements highlighted that these teachers were not interested in suggestions to coordinate action plans at school with those at home (#30/-4), ideas on how to shape classes according to the student's interests (#13/-1), or advice on how to strengthen positive behaviours of the student (#17/-4).

Dutch teachers factor 2: fostering change within the student (n = 5)

Teachers in factor 2 seemed concerned about the student's abilities to cope with the (mainstream) educational environment. Their most pressing needs were to get recommendations to help the student flexibly deal with study materials (#11/5), ways to stimulate self-initiated questions (#12/5), and ideas to help the student reflect on his/her own work (#22/4). Moreover, they needed techniques to help a distracted/disruptive student to re-focus on tasks (#20/3) and advice on how to help them make their own choices (#16/3). Conversely, they did not express a need for getting help to adjust the learning tasks based on the student's needs (#18/-2), making the instruction understandable (#10/-4), or receiving recommendations to shape the classes for the autistic student (#5/-5). One teacher (pp41) indicated that lessons tend to go differently than planned and that the process of making adaptations 'Is actually going well'.

Dutch teachers factor 3: getting help from other professionals (n = 8)

Teachers in this factor did not want to feel unaccompanied while educating a student with ASD. Their most important needs were to have an extra tutor in the class (#42/5) and to share their responsibility with someone else (#35/5). One teacher (pp15) said that not having this type of support feels like 'Failing the student [with ASD]'. Additionally, they would appreciate the input of specialists (#49/4) and supervisors or colleagues (#33/3). Colleagues seemed to be of great support, especially while dealing with challenging behaviours of the student (#34/2). When colleagues would 'jumped in' it was possible for teachers to 'breathe' (pp13).

Teachers from factor 3 were less interested in receiving advice on how to support the student in starting a conversation (#23/-5) or suggestions to encourage social activities and friendships (#26/-4). Lastly, they had less need to receive ideas to assist the student in making decisions (#16/-2) or tips to stimulate self-initiated questions of the student (#12/-3).

Dutch teachers factor 4: adjusting my lessons to increase students' engagement (n = 3)

This was the smallest factor for the Dutch teachers, but these teachers clearly deviated in their most and least important needs. Teachers in factor 4 appreciated techniques to make their instructions more understandable (#10/4) and ideas to tailor these according to the talents of the student with ASD (#14/5). As one teacher (pp28) commented: 'My belief is that when a student is empowered, they will automatically function better'. Moreover, they wanted to foster student engagement, were eager to adapt the learning tasks to the student's needs (#18/4), and believed that parents' input could be of great support to shape their lessons (#28/3).

These teachers seemed confident in teaching students with ASD, as they indicated less need for assistance from colleagues when the student displays challenging behaviours (#34/-2). Furthermore, they seemed self-confident in keeping the student engaged, as they did not emphasise a need for recommendations to help a distracted/disrupted student to re-focus on tasks (#20/-5) or ideas of incentives to reinforce positive behaviours (#17/-4).

Mexican teachers factor A: structuring and adapting my lessons (n = 9)

The Mexican teachers in factor A seemed interested in improving their lesson structure for the student with ASD. Their most important needs were getting advice to tailor instructions (#10/5) and receiving ideas to support the talents of the student (#14/5). One of the teachers (pp12) commented that 'Highlighting the student's strengths and skills helps to get better results in their learning'. Other distinguishing statements indicated that teachers were concerned about finding strategies to make the class environment less turbulent/chaotic (#1/3), knowing how to help the student concentrate (#4/4), and techniques to elaborate individual instructions (#3/2).

These teachers did not express a need to increase their confidence during their interactions with the student (#47/-3). Furthermore, they did not prefer a shared responsibility (#35/−1), seeking advice from other professionals (#49/-2), having their supervisor ask how things are going (#31/−5) or to use/expand the network of facilities around the school (#40/-5). Yet, the comments from participants did not elaborate on whether they already had these collaborations with others or if they simply preferred working on their own.

Mexican teachers factor B: getting help from other professionals and refreshing my knowledge (n = 5)

Teachers in factor B had a strong need to receive help from a range of professionals. They were interested in having an additional tutor (#42/4), a professional to help the student outside the classroom (#43/4), and parents' advice to structure their classes (#28/2). In addition, they would like to refresh their knowledge by consulting textbooks (#45/5) and receiving in-service training related to ASD (#44/4). One teacher (pp17) believed it was necessary to 'know all the updates to be capable of working successfully with the student'.

These teachers expressed they did not need advice on how to encourage group-work (#15/-1) or means to make the students understand another person's perspective (#25/−5). Moreover, they did not need advice on dealing with the sensory issues of the students (#21/-1), ways of helping them focus (#4/-1), or guidance in making their instructions comprehensible (#10/-2).

Mexican teachers factor C: improving the social skills of my student (n = 7)

Teachers in factor C seemed interested in knowing how to foster the social abilities of the students with ASD. For this, they would appreciate suggestions on how to encourage the student to work with classmates (#15/4), knowing techniques to enhance the conversational skills of the student (#23/4) and tips to support classmates handle the student's social behaviour (#27/5). In this regard, one of the teachers (pp5) mentioned that if peers do not understand why these students behave the way they do, this will 'limit' and 'frustrate' the student with ASD. In line with this, participant 8 felt that peers learning how to manage the student's social behaviour was essential to foster 'an environment of respect and tolerance'.

These teachers were less appreciative of recommendations to foster self-initiated questions in the student (#12/-5), ways to create a less chaotic environment (#1/-5), chances to observe and assess their didactic skills (#46/-1) or opportunities to flexibly deal with the student with regard to school policy/rules (#37/-1).

Mexican teachers factor D: 'am I doing things the right way?' (n = 3)

Although this group was small, these teachers' needs deviated from the other factors. Teachers in factor D were mainly interested in having a clear policy to share information and join forces within the school regarding autism (#36/5) and having opportunities to analyse their own didactic skills (#46/5). They also sought techniques to encourage independent work (#9/4), suggestions for students to flexibly deal with materials (#11/2), advice to facilitate the understanding of another person's perspective (#25/4), and tips for student collaborations (#15/3).

Interestingly, although these teachers were eager to know if they were on the right track, they did not express a need for supervisors (#31/-4) or colleagues (#32/-4) to inquire how it was going with the student with ASD. They were also less focused on suggestions to communicate with the student's parents (#29/-5) and getting their input to shape their lessons (#28/-3).

RQ 2: similarities and differences between the Netherlands and Mexico

With regard to similarities between the Dutch and Mexican factors, both factor 1 of the Dutch teachers and factor C of the Mexican teachers ranked statements associated with supporting the social abilities of students with ASD considerably high. In addition, Dutch teachers in factor 4 and Mexican teachers in factor A both mostly emphasised the need to make their lessons more understandable and foster the student's areas of strength. Factor 3 of the Dutch teachers and factor B of the Mexican teachers highlighted the need for an extra tutor in class, such as a teaching assistant, and a preference to seek advice from a professional. Overall, similar needs emerged in three out of four factors across the two countries.

That said, there were also differences between the teachers from the two countries. Dutch teachers in factor 2 were eager to receive suggestions on how to help the student with ASD to better cope with the school environment. None of the Mexican factors displayed a strong need for this. Although factor 3 of Dutch teachers and factor B of the Mexican teachers had a similar need to collaborate and receive support from others, the Mexican teachers in factor B *also* showed a need for more information by receiving in-service training and textbooks. In contrast, none of the Dutch factors expressed a need to expand their knowledge about ASD. Lastly, the youngest group of Mexican teachers, factor D, seemed to need reassurance or an indication that they were 'on the right track', whereas none of the Dutch factors shared this concern.

Within factors, no clear relationship between demographic variables (age, gender, years of teaching experience, and grade level they taught) and need-profiles was found. Across countries, the proportion of male and female teachers did not significantly differ, χ^2 (2, $N = 51$) = .97, $p = .32$. However, a Wilcoxon signed-rank test revealed that Dutch teachers were significantly older than their Mexican counterparts (45.15 years vs. 36.52 years), $z = 2.62$, $p = .01$. Additionally, Dutch teachers had more years of teaching experience (18.74 years vs. 10.33 years), $z = 2.99$, $p < .01$. Tables with the demographic characteristics of all factors can be found in the supplementary materials.

Discussion

This study provides a cross-country perspective on the needs and wishes of mainstream secondary school teachers while teaching students with ASD. Our findings revealed four different groups (known as 'factors') of secondary school teachers in the Netherlands and Mexico with distinguishing needs for supporting students with ASD.

The Dutch and Mexican teachers seemed to have similar views on needs they considered most pressing. Groups of teachers from both countries expressed a desire to make lessons more understandable and enjoyable, highlighted the need for extra assistance from professionals, and emphasised their concern to foster the social abilities of the student with ASD. With regard to the latter, a recent systematic review found that educators consider these students' social skills fundamental for a successful inclusion in mainstream classrooms (Russell, Scriney, and Smyth 2023), as having poor social skills can prevent students from fully participating at school (Stephenson et al. 2021). Yet, including the social aspect in lessons can be challenging for teachers, since they face limitations with the curriculum they are obliged to follow (Able et al. 2015). Furthermore, opportunities for teachers to know how to make their lessons more suited for students with ASD are largely missing during teacher education (Ravet 2017), which could explain why participants from both countries ranked statements that emphasised a need to receive suggestions for teaching relatively high. Lastly, studies conducted in other countries have found that teachers appreciate working with other professionals, such as speech therapists and teaching assistants (Agyapong et al. 2010; Emam and Farrell 2009). One of the main benefits of these collaborations is that they help teachers increase their confidence during their interactions with ASD students (Devi and Ganguly 2022).

We also found cross-country differences. For instance, one notable distinction among the Dutch factors was their emphasis on fostering change *within* students with ASD to help them manage the secondary school environment. A plausible explanation for this emphasis is that prior research has shown that teachers in the Netherlands often face challenges with differentiated instruction (van Doodewaard and Knoppers 2021). As a result, these teachers may be accustomed to a 'one-size-fits-all' approach, expecting students to adjust to their teaching style rather than adapting their methods to meet the students' diverse needs. Another key difference was observed in the Mexican factor D, where the youngest participants expressed a greater need for confidence when teaching students with ASD. In contrast, none of the Dutch factors prioritised this. This could be explained by the fact that Dutch teachers in this study were significantly older and had more teaching experience than their Mexican counterparts. Indeed, previous investigations have emphasised the uncertainty of young (and pre-service) teachers when it comes to supporting autistic learners (Devi and Ganguly 2022; Ravet 2017). Specific courses and training on ASD could help teachers understand the needs of students with ASD and increase their self-efficacy (Devi and Ganguly 2022; Memisevic et al. 2021). A third difference is that one of the Mexican factors emphasised a wish to gain more (textbook) knowledge, while the Dutch teachers seemed to value practical hands-on knowledge, a finding similar to what has been found for Dutch educators in primary schools (Van Der Steen et al. 2020). Given the financial constraints of the Mexican education system (García-Cedillo, Romero-Contreras, and Ramos-Abadie 2015), teachers may view textbooks as a more accessible resource compared to schools providing them with hands-on learning opportunities.

We conclude that most of the higher-ranked needs in our sample were not country-specific, despite the different ways in which the school systems are organised and ways in which inclusive education was implemented. In addition, certain needs were not specific to secondary education, such as receiving advice on how to improve the social skills and interactions of the student with ASD, which has been previously mentioned by Dutch educators in primary education (Van Der Steen et al. 2020).

Strengths and limitations

The results of this study should be interpreted with a number of limitations in mind. First, the sample size in both the Netherlands and Mexico was relatively small. In contrast to traditional quantitative methods, which focus on statistical generalizability, Q methodology focuses more on exploring subjective viewpoints and understanding the diversity of individual perspectives within a specific context. Therefore, although generalising findings is not the aim of Q studies (Lee 2017), future research could include a larger sample to capture a wider range of viewpoints among secondary school teachers that may not be represented in this article.

A second limitation of our research is that teachers had to sort their needs in a grid with a forced choice for each cell (although they were able to make changes in their placements at all times). Watts and Stenner (2012) argue that a forced-choice distribution is far from restrictive for participants. Instead, this approach prevents them from making extra (unnecessary) decisions and simplifies the sorting process (Watts and Stenner 2012). In our study, the forced-choice setting encouraged teachers to critically reflect on and prioritise the needs they perceived as most important to support autistic learners. Another possible limitation is that teachers likely ranked their needs based on their experiences with a particular student or group of students with ASD. Given that many autistic students in mainstream education typically require support rather than substantial or very substantial support (American Psychiatric Association 2013), it is possible that the need-profiles of these teachers do not fully capture the needs that secondary education teachers may have when supporting students with ASD who have more pronounced challenges. Besides, since the characteristics of these learners are highly heterogeneous, what a teacher might need to optimally educate a student with ASD could vary from one student to another. To overcome this issue, the needs of the students with ASD could be studied in relation to the needs mentioned by their teachers.

Conclusion

The experiences of students with ASD in mainstream education are not always positive (Goodall 2019). Although they may be struggling to fulfil their educational needs, secondary school teachers can be a main source of support for autistic students (Saggers 2015). While our study shed light on the needs of teachers in secondary school that need to be met for them to fully support their students with ASD, future studies should pay attention to *how* these needs can be met in order for teachers to cope with the everyday challenges that arise in the process of optimising inclusive educational practices. Furthermore, as the need to (a) receive suggestions on how to foster social skills, (b) adapt the lessons according to the student's needs and (c) collaborate with other

professionals stood out in samples from both the Netherlands and Mexico, educational policies should focus on how to addresses these issues, possibly already during teachers' training and school principals' professionalisation, so they feel better prepared and supported when they encounter an autistic student in the classroom. This may avoid the usual 'learning by trial and error' (Devi and Ganguly 2022) that often characterises the education of this group of learners.

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