International Journal of Inclusive Education

ISSN: 1360-3116 (Print) 1464-5173 (Online) Journal homepage: www.tandfonline.com/journals/tied20

Exploring teachers' strategies for including children with autism spectrum disorder in mainstream classrooms

Sally Lindsay, Meghann Proulx, Helen Scott & Nicole Thomson

To cite this article: Sally Lindsay, Meghann Proulx, Helen Scott & Nicole Thomson (2014) Exploring teachers' strategies for including children with autism spectrum disorder in mainstream classrooms, International Journal of Inclusive Education, 18:2, 101-122, DOI: 10.1080/13603116.2012.758320

To link to this article: https://doi.org/10.1080/13603116.2012.758320

International Journal of Inclusive Education, 2014
Vol. 18, No. 2, 101–122, http://dx.doi.org/10.1080/13603116.2012.758320

Exploring teachers' strategies for including children with autism spectrum disorder in mainstream classrooms

Sally Lindsay[a,b*], Meghann Proulx[a], Helen Scott[a,c] and Nicole Thomson[a,d]

[a]*Bloorview Research Institute, Holland Bloorview Kids Rehabilitation Hospital, 150 Kilgour Road, Toronto, Ontario, Canada M4G1R8;* [b]*Department of Occupational Science and Occupational Therapy, University of Toronto, Toronto, Ontario, Canada;* [c]*Canadian Network for Maternal, Newborn and Child Health, Peterborough, Ontario, Canada;* [d]*Graduate Department of Rehabilitation Sciences, University of Toronto, Toronto, Ontario, Canada*

(*Received 26 May 2012; final version received 6 December 2012*)

As the rates of diagnosis of autism spectrum disorder (ASD) increase and more students with ASD are enrolled in mainstream schools, educators face many challenges in teaching and managing social and behavioural development while ensuring academic success for all students. This descriptive, qualitative study, embedded within an inclusive pedagogical approach, draws on a purposive sample of 13 elementary school teachers who have experience in teaching children with ASD within two cities in Ontario, Canada. Through in-depth interviews we asked about teachers' strategies for creating an inclusive environment within their classroom. Teachers had several recommendations for successfully including children with ASD in mainstream classrooms including: (1) advocating for resources and essential training; (2) tailored teaching methods; (3) teamwork within the school; (4) building a rapport with parents and students; and (5) building a climate of acceptance within the classroom through disability awareness, education and sensitivity training. In conclusion, teachers need to use several strategies and have appropriate training and resources to optimise the successful inclusion of children with ASD.

Keywords: teachers; inclusion; children; autism; Asperger's syndrome

Introduction

Autism spectrum disorder (ASD) is now recognised as the most common childhood neurological disorder, diagnosed in approximately 1 in 165 children (Autism Society Canada 2010; Frombonne 2003). ASD involves communication impairments and behaviour challenges and has been described as the ultimate learning disability because of its associated language and social difficulty (Jones and Frederickson 2010). The disorder is characterised by significant qualitative impairments in social interactions, communication and repetitive patterns of behaviour, interests and activities (Jones and Frederickson 2010; Robertson, Chamberlain, and Kasari 2003; Vakil et al. 2009). Indeed, one of the greatest challenges for someone with ASD is navigating the social world.

School boards across Canada report a vast increase in the enrolment of students with autism over the past few years (Geneva Centre for Autism 2010). As more students with

*Corresponding author. Email: slindsay@hollandbloorview.ca

ASD are placed in mainstream classrooms (Statistics Canada 2010), educators and families are left with the challenge of making inclusion work despite lacking clear guidelines and training (Horrocks, White, and Roberts 2008). Recent evidence shows that children with ASD are approximately 20 times more likely to be socially excluded at school compared to their peers (Humphrey 2008). Indeed, the inclusion of children with disabilities is one of the most complex and poorly understood areas of education (Humphrey and Lewis 2008; Symes and Humphrey 2010) where many schools are struggling to meet the needs of students with ASD. While it is evident that classroom teachers face many challenges educating students with ASD, it is important to understand the specific strategies used to successfully include children with ASD within mainstream classes.

Teaching students with ASD often highlights concerns in important areas of development including: social interaction, verbal and non-verbal communication, creative play and sensory processing (Bowe 2004; Wilmshurst and Brue 2010). Children with ASD often have difficulty in understanding or communicating their needs to teachers and classmates. They may also have challenges in following some classroom instruction, along with the subtle vocal and facial cues of teachers (Bowe 2004; Wilmshurst and Brue 2010). Furthermore, sensory issues among children with autism often result in difficulty in coping with being touched by others, maintaining eye contact or managing noisy environments (Bowe 2004; Wilmshurst and Brue 2010). The typical school environment is busy, loud and crowded. The difficulties of understanding the social world for children with ASD may limit the development of relationships with their peers, which can result in further stress and anxiety. Given the difficulties in the social and emotional understanding of students with ASD, teachers need successful strategies for including children within mainstream classrooms.

Parents of children with ASD often report being discontent with educational services and advocate for better services to meet their children's needs (Lynch and Irvine 2009). Thus, more work needs to be done to create 'autism friendly' inclusive social environments within classrooms (Hinton, Sofronoff, and Sheffield 2008; McGregor and Campbell 2001; Smith and Brown 2000). We refer to inclusion as each child being an equally valued member of the school culture (Eldar, Talmor, and Wolf-Zukerman 2010) involving presence, participation, acceptance and achievement (Humphrey 2008). Inclusive classrooms are vital because they can provide a supportive environment in which young children can grow and learn side by side with their typically developing peers (Chandler-Olcott and Kluth 2009; Vakil et al. 2009) and can stimulate learning, development and children's feeling of acceptance (Bredekamp and Copple 1997). Evidence shows that students with ASD who are fully included show higher levels of engagement in social interaction, give and receive higher levels of social support, have a wider social network and have more advanced education goals compared to their counterparts in segregated settings (Eldar, Talmor, and Wolf-Zukerman 2010).

Attitudes of educators towards the integration of children with disabilities into mainstream classes are also critical to creating an inclusive classroom because typically developing students often model the attitudes and behaviours of adults (Barnes 2009; Horrocks, White, and Roberts 2008; Morton and Campbell 2008; Villa et al. 1996). Therefore, meeting the needs of children with ASD is particularly important as they are at an increased risk of social exclusion and bullying (Connor 2000). To achieve successful inclusion, educators must have a good understanding of ASD and be prepared to respond to the characteristic behavioural manifestations of the disorder (Marks et al. 2003).

Several studies have focused on beliefs, attitudes and perceptions in relation to inclusion itself and to students with disabilities, pedagogical practices and classroom supports in inclusive schools (Florian and Black-Hawkins 2011; Humphrey and Lewis 2008; Jindal-Snape et al. 2005; Park, Chitiyo, and Choi 2010; Roberts 2007). While the issue of inclusion within school is evident in the literature, there has been relatively little research on how teachers create and sustain inclusive mainstream classrooms (Kraayenoord 2007) in relation to children with ASD (Hinton, Sofronoff, and Sheffield 2008; Horrocks, White, and Roberts 2008; Howlin 1998; Park, Chitiyo, and Choi 2010).

We draw on the concept of inclusive pedagogy as described by Florian and Black-Hawkins. In their view an inclusive pedagogy requires the following: (1) a shift in teaching and learning from an approach that works best for most learners towards one that involves the development of a rich learning opportunity that is made available to everyone; (2) a rejection of deterministic beliefs about ability; and (3) a way of working with others that respects the dignity of learners as full members of the classroom (Florian and Black-Hawkins 2011). We argue that such an approach, although ideal, may be difficult to achieve for students who have high functioning autism and often require specific attention to address behavioural difficulties.

Inclusion of children with ASD in Ontario, Canada

School boards within the province of Ontario, where this study was conducted, are required to provide students with exceptionalities (i.e. behavioural, communication, intellectual, physical or mental) with appropriate special education programmes and services to best meet their educational needs (Ontario Ministry of Education 2012). Such students are referred to as 'exceptional pupils' and may receive these services once an Identification, Placement and Review Committee have formally identified them (Ontario Ministry of Education 2012).

The Ontario Ministry of Education has identified the inclusion of students with ASD in school environments as an area of priority for action (Minister's Autism Spectrum Disorders Reference Group 2007). Indeed, teaching strategies and approaches for students with ASD in mainstream schools is a key gap in the knowledge base (Davis and Florian 2004; Humphrey and Parkinson 2006; National Autism Society 2003). Thus, it is critical to understand teachers' experiences in facilitating inclusion within their classrooms so these gaps can be addressed to increase the inclusion and participation of children with ASD.

Method

Our research question was to explore teachers' strategies for including children with ASD in mainstream classrooms. To achieve this, an interdisciplinary descriptive study was conducted using in-depth interviews with a sample of school teachers. A qualitative design was used to explore teachers' advice for creating and maintaining an inclusive classroom for children with ASD within mainstream classrooms. Ethical approval was obtained from the Research Ethics Board at a children's rehabilitation hospital and the local District School Boards.

In-depth interviews

This interdisciplinary, descriptive study explored how children with ASD are included within mainstream classes. Qualitative in-depth interviews with a sample of school

teachers were conducted to gain an understanding of their experiences in working with children who have ASD. Please refer to Appendix 1 for the interview guide.

Participants

A purposive sample was used to recruit participants for this study. Teachers were recruited through contacts with a local district school board and student support services at a children's rehabilitation hospital. Each participant was screened by telephone to determine eligibility and to set an interview time. Participants were included if they met the following inclusion criteria: (1) had at least 2 years of teaching experience in a mainstream (integrated) class; (2) currently teach in an integrated class in an elementary public school within the local district school board; and/or (3) have experience in teaching a student with ASD within a mainstream class. The adequacy of the sample was determined when theoretical saturation was reached which occurred when no new or relevant data emerged regarding a category and categories were well developed in terms of their properties, dimensions and variation (Grbich 2007).

Our sample consisted of 13 elementary school teachers (3 males, 10 females) who taught a wide range of elementary level classes. Their teaching experience ranged from 3 to 22 years. Twelve of the teachers had additional qualifications in special education.

Procedure

The first two authors conducted the interviews between June 2011 and February 2012, each lasting an average of 38 minutes. Informed consent was obtained from the participant prior to beginning the interview. The interviews followed an in-depth semi-structured format that explored teacher's experiences of including children with ASD in mainstream classrooms. The participants were asked about their experiences of working with students who have ASD within mainstream classes and their advice about creating an inclusive environment for children with ASD. Background information such as teacher demographics (i.e. gender, number of years taught, training) was also collected.

Data analysis

Interviews were professionally transcribed verbatim, sorted and categorised according to emergent themes around strategies of teaching children with ASD. The project used an open coding approach where an in-depth understanding of the teachers' experiences was developed. The analysis began with two of the authors reading through each of the interviews several times and noting key emerging themes and patterns. Codes with similar meanings were developed, examined and compared and re-defined as needed. Table 1 outlines the key themes expressed in the Results section as shared by each participant. A constant comparative approach of organising the data with continual adjustment and discussion amongst the research team was used throughout the analysis. This process helped to ensure that the codes captured the range of ideas expressed by the participants (Grbich 2007). An audit trail of key analytical decisions regarding themes/codes was kept. Code–recode and peer examination helped to establish the trustworthiness of the findings (Grbich 2007). The following data are presented by key themes and each quote is followed by a participant number.

Table 1. Participant profiles.

		Current experience		Previous experience			
ID#	Gender (M/F)	Role	School type (rural, urban)	Years of experience	Grades taught	Additional relevant qualifications	Key strategies
1	M	Special education teacher	Urban	10	1–6	Special education specialist; health and physical education	- Advocating for resources and essential training - Climate of acceptance (buddy system, disability awareness)
2	M	DD classroom teacher	Urban	4	4–8	Special education	- Teamwork within school (work with other staff) - Building a rapport with parents and students - Tailored teaching methods (routine, special interests, flexibility, fidget toy, goal setting/ rewards, academic challenges, IEP/ differentiation, removal from a situation) - Building a climate of acceptance within the classroom (buddy system, decrease exclusive opportunities)
3	F	Grade 2/3 teacher	Rural	14	2–12	Special education	- Advocating for resources and essential training - Teamwork within the school - Building a rapport with parents and students - Tailored teaching methods (routine, visuals, removal from situation, five-point system, creating opportunities, technology) - Building a climate of acceptance within the classroom (buddy system, disability awareness)

(*Continued*)

Table 1. (*Continued*).

		Current experience		Previous experience			
ID#	Gender (M/F)	Role	School type (rural, urban)	Years of experience	Grades taught	Additional relevant qualifications	Key strategies
4	F	Grade 3 teacher	Rural	11	K-12	Special education: gifted, behaviour, learning disabilities	- Teamwork within the school - Building a rapport with parents and students - Tailored teaching methods (flexibility, fidget toy, goal setting/rewards, IEP/differentiation, removal from situation, teaching social skills) - Building a climate of acceptance within the classroom (buddy system, disability awareness, decrease exclusive opportunities)
5	F	Grade 1 teacher	Rural	12	K-6	Special education	- Advocating for resources and essential training - Teamwork within the school - Building a rapport with parents and students - Tailored teaching methods (visuals, flexibility, removal from situation) - Building a climate of acceptance within the classroom (disability awareness)
6	F	Grade 7 teacher	Rural	15	1/2, 6	Special education: behaviour, learning disabilities, gifted	- Advocating for resources and essential training - Teamwork within the school - Building a rapport with parents and students - Tailored teaching methods (routine, visuals, special interests, flexibility, academic challenges) - Building a climate of acceptance within the classroom (disability awareness)

7	F	Resource teacher	Rural	21	Unknown	Special education	- Advocating for resources and essential training - Teamwork within the school - Tailored teaching methods (routine, goal setting/ rewards, IEP/differentiation, removal from situation, creating opportunities) - Building a climate of acceptance within the classroom (disability awareness)
8	F	Teacher	Rural	22	K-8	special education: learning disabilities; the autistic pupil, guidance; private training in autism	- Advocating for resources and essential training - Teamwork within the school - Building a rapport with parents and students - Tailored teaching methods (visuals, special interests, IEP/differentiation, removal from situation, creating opportunities) - Building a climate of acceptance within the classroom (buddy system)
9	F	Grade 7/8 teacher	Urban	13	6–8	N/A	- Advocating for resources and essential training - Teamwork within the school - Building a rapport with parents and students - Tailored teaching methods (visuals, special interests, IEP/differentiation, removal from situation, creating opportunities, technology) - Building a climate of acceptance within the classroom (decrease exclusive opportunities)
10	F	Resource teacher	Urban	20	J/K, S/K, 1	Special education	- Advocating for resources and essential training - Teamwork within the school - Tailored teaching methods (special interests, flexibility, removal from situation, technology) - Building a climate of acceptance within the classroom (buddy system, disability awareness)

(*Continued*)

Table 1. (*Continued*).

		Current experience		Previous experience			
ID#	Gender (M/F)	Role	School type (rural, urban)	Years of experience	Grades taught	Additional relevant qualifications	Key strategies
11	M	Special education/ resource teacher	Urban	8	1, 2, 4, 5,	Special education; health and physical education)	- Advocating for resources and essential training - Teamwork within the school - Tailored teaching methods (visuals, goal setting/ rewards, IEP/differentiation, removal from situation) - Building a climate of acceptance within the classroom (buddy system, disability awareness)
12	F	Resource teacher	Urban	5	Resource teacher	Masters in education, special education, school based training in ABA	- Advocating for resources and essential training - Teamwork within the school - Tailored teaching methods (routine, special interests, flexibility, fidget toy, removal from situation, goal setting/rewards, IEP/ differentiation, technology) - Building a climate of acceptance within the classroom (buddy system, disability awareness)
13	F	JK/SK teacher	Urban	3	JK/SK	Special education	- Advocating for resources and essential training - Teamwork within the school - Tailored teaching methods (visuals, special interests, flexibility, IEP/differentiation, removal from situation) - Building a climate of acceptance within the classroom (disability awareness)

Notes: IEP, individual education plan; ABA, applied behaviour analysis.

Results

Our findings showed that teachers had several strategies for including children with ASD in mainstream classrooms which involved: (1) advocating for resources and essential training; (2) tailored teaching methods; (3) teamwork within the school; (4) building a rapport with parents and students; and (5) building a climate of acceptance within the classroom through disability awareness, education and sensitivity training (refer to Table 1 for an overview of key strategies by participant).

Advocating for resources and essential training

Consistent with the inclusive pedagogical approach (Florian and Black-Hawkins 2011), our findings show that teachers are committed to professional development as a way of developing existing as well as new inclusive practices. A first key strategy in our findings that 12 teachers identified to enhance the inclusion of children with ASD is to advocate for resources (e.g. educational supports and assistive technology) for the child. Many teachers advocated on behalf of the child to obtain the necessary resources for them to be included within their class. For example, one of the participants describes her experience working with a boy who has ASD:

> it was quite a challenge to get the resources because he was in a regular programme and there wasn't any money assigned to buying the assistive equipment he would need. It took me a long time to get the software. I had to go to other schools with special needs programmes to use their software (#1).

Another teacher explained the importance of advocating for necessary resources (e.g. teaching materials, assistive devices) to successfully include students with ASD: 'If we're going to see inclusion then we need the resources to make it work' (#11). Teachers agreed that training on how to educate students with ASD is essential to providing children with ASD with an appropriate education and to maximise social inclusion with their peers. This could be through formal workshops and training as well as informal training from peers and learning on their own. Most teachers advocated to receive the extra training and, in some cases, had to personally cover the costs associated with learning more about how to work with children with ASD.

Several teachers thought that more formal training in working with children with ASD is needed both through continuing education and training in teacher's college. For instance:

> There needs to be more workshops. We need to be trained but at the same time the training is really expensive. It's definitely a learning curve for myself as a new teacher to figure out how to include kids with autism. Having people in the school to help me and different strategies like visual supports really help because they can kind of gain some independence in knowing what to do next in their routine (#13).

Other teachers also noted the importance of extra training to learn more about autism to adapt teaching styles and environments to support successful inclusion.

> You undergo all the training but then you create kind of your own philosophy and pedagogy…I think it's incredibly important not just to learn about autism but to learn what makes these kids tick and how to reach them. You don't have to be an autism expert but you really get a sense of how they learn (#8).

Many teachers spoke about how informal training played a key role in learning how to successfully include children with ASD. For instance, teachers mentioned offering their peers 'mini workshops on, you know, special education and working with kids with special needs' (#1). Others recommended that new teachers should observe more experienced teachers.

> If they're a new teacher coming out definitely talk to a teacher who has students in the classroom, even possibly observe a classroom that has a child in it 'cause sometimes just seeing it [behaviour] is much better than talking about it (#5).

In sum, these findings are consistent with the inclusive pedagogical approach (Florian and Black-Hawkins 2011) including, being committed to professional development as a way of enhancing inclusive practices.

Tailored teaching methods

Inclusive pedagogy focuses on the learning needs of all children in the class and is often defined by how it is used (i.e. delivery method) rather than the content of the method (Florian and Black-Hawkins 2011). Teachers emphasised focusing on children's abilities rather than their disabilities or limitations, a strategy for inclusion involving tailored teaching methods (i.e. structured routine, creative planning and flexibility, building on student's interests, preventing 'meltdowns', goal setting and rewards).

Structured routine

Six teachers highlighted the importance of having a consistent, structured routine and also giving students with ASD advance notice of when there would be a deviation in the regular routine (e.g. fire drills, assemblies, etc.). For example, one teacher reported it is critical to let children with ASD know 'about transitions, letting them know when something is going to change in routine' (#2). Another teacher gave an example of how they deal with unexpected fire drills, which can be overwhelming for children with ASD:

> When we have a fire drill the boy with autism we have to tell him it's coming because he couldn't handle it and then he goes into the office because it's not as loud in the office as the classroom. His mom talked to the principal so when we have a fire drill it's never a surprise for him like it is for everybody (#3).

Some teachers found it helpful to display a schedule for everyone to see so students know what is coming up next. Specifically, 'Putting up a schedule on the board that they can see or at least on their desk can really help to defer those challenges you might have so they know what's coming next' (#3). Having a visual display of the schedule and a structured routine was helpful for teachers to minimise distress among all children in the classroom, especially with children with ASD. A teacher explains, 'I didn't want them getting upset and also if something came up in the day like an assembly they needed to be able to handle the change' (#12). Structured routines have the potential to benefit all students in a classroom, a strategy that aligns with an inclusive pedagogical approach (Florian and Black-Hawkins 2011).

Creative planning and flexibility

Seven teachers recalled the importance of planning lessons ahead of time to be inclusive of the child with ASD while also maintaining some flexibility for changes that arise. One teacher emphasised how critical it is to have the child actively involved in this class and not merely sitting in the same room as students. This required creative planning. To illustrate:

> I don't see the point of integration just for the sake of integration, like shoving them into a room with regular students. There should have to be a particular lesson that would have to be organized so they knew what they are doing. Just having them sit in the room isn't going to do anything 'cause they're not going to be engaged and they're just going to be a distraction for everybody else and make them even more noticeable. So if you know that they're going to be in small groups or that it's an activity they are all participating in, that's different. That's true integration 'cause they're actually working together. But it has to be set up otherwise I don't think it's beneficial for anybody. (#2)

For teachers who did not have as much experience in working with children with disabilities, they explained the need to have a flexible teaching style. One teacher recalled her experience:

> Teachers have to be willing to sort of adapt. Like, for example, if you've been kind of teaching or thinking the same way for 20 years and all of a sudden you have an inclusive class and you can't quite use the same plan as you used to. . .There's a lot of just being flexible and being creative and planning (#4).

Meanwhile, other teachers possessing a wealth of experience in teaching inclusive classes stress the importance of being flexible to several different learning styles:

> The disabilities that I see represented in my classrooms are so diverse I don't really have one approach. I have taught students with a whole range of physical, emotional disabilities, learning disabilities. Like with students who don't have any disabilities, I approach them as individuals. Some of my classroom philosophies are to make things as inclusive as possible for everyone to try to address as many learning styles as often as possible (#9).

A few other teachers mentioned the level of patience and consistency it takes to teach a child with ASD:

> It takes lots of patience usually. You have to work with any abrupt changes to their schedule and that doesn't go over well. So you have to keep everything kind of consistent for them and give them lots of time (#5).

Undeniably, creative planning is a requirement when structuring a classroom to include all students, especially those with ASD. Such planning will help to create opportunities for all students while enhancing the inclusive environment of the class.

Building on student's special interests

Focusing on children's abilities rather than their limitations or differences is another key finding in our study that is consistent with the inclusive pedagogical approach (Florian and Black-Hawkins 2011). Children with ASD often have very specific interests and it can be difficult to engage them in other topics. Nine teachers stressed the importance of learning about students' special interests and building on them to keep them engaged in lessons:

> I think incorporating the child's interest into whatever you're teaching is critical... Especially if it's an activity that they're not going to prefer, you've got to get their interest involved in it. So if a kid hates reading then you better damn well find some books on their special interest (#8).

Another teacher shared a similar example of building on their special interests. Specifically, you have to:

> motivate him through whatever his passion was. So he was very passionate about writing and drawing. So every assignment I would spin it to be about that automatically. It always comes back to knowing the kids and knowing what they're passionate in and being interested in (#6).

Teachers told us that they needed to tap into their students' special interests to help keep them engaged and motivated to participate. This strategy is critical not only to avoid boredom but to create an atmosphere of inclusion as well. One teacher shared their success with providing a student with the opportunity to showcase his specific interests so others could value his skills. For instance, he had:

> really specific technical skills and I made use of that in my classroom and also in the musical I run every year. I knew this student wanted to help and be part of the musical and there was a perfect opportunity for him to help out with something that was a really big project that involved many students and he really enjoyed it. He was successful at it and people were respectful to the fact that he had a set of skills that nobody else had and it was a wonderful opportunity for me to highlight that to people. It brought him closer to some students in the class, which was great because he had friends for the first time (#9).

Several teachers recommended highlighting the child's particular strengths and interests to their classmates as a way of helping them to feel included. Specifically:

> Use the kids' strength or their skills to teach the other kids. Let's say [child with autism] is really good at building, then incorporate that and he can do some sort of lesson on building. Something that the other kids will look up to him for because you don't always want to be the kid who is needy. You want to show that this kid has strengths (#8).

These examples highlight how using grouping strategies can support everyone's learning in the classroom while minimising opportunities to single out students requiring extra support. Teachers believed that all of the children could make progress, and with appropriate supports children with disabilities would not hold back the progress of others.

Preventing behavioural outbursts

In contrast to the inclusive pedagogical approach (Florian and Black-Hawkins 2011), the methods used to prevent outbursts were often individualistic. Such an approach has the potential of marginalising a child because their differential treatment may influence how their classmates treat them. Eleven teachers described how essential it was to have plans in place to avoid or minimise distress or behavioural outbursts, a common behavioural occurrence among children with ASD. For three teachers this required something as simple as a 'fidget toy':

> If they're distracted because their focus is everywhere then it can help to give them some kind of manipulative to play with, whether it's a squeezy ball or something to put in their hands. You don't want to single them out too much. . .even tying an elastic band under the

> chair. I have students with autism who felt that by putting their feet behind the elastic it sort of released that tension and they were able to focus better (#12).

Eleven teachers used a distraction strategy of sending the child to a different classroom (i.e. to give the child an opportunity to calm down, avoid over stimulation all the while still contributing to the classroom in a meaningful way):

> Instead of waiting for that meltdown to happen [teachers] will send them to another classroom to help to be an assistant to the teacher. One of our Grade 2s, who is on the spectrum, goes to the kindergarten classroom to help the teacher and that's a reward for him. So the teacher tries to do it before anything happens (#12).

Teachers also recognised that it is essential to give the child space so they can compose themselves. For example, without adequate space:

> he gets mad and stomps back to his desk and he'll start to cry. The other kids are bothered. They're not afraid of him but they're bothered, like 'what's wrong with him?'
> I say, he'll be ok in a little while let's give him some space (#3).

Two teachers used a five-point system for dealing with potential 'meltdowns' by teaching children to recognise their anger. To illustrate:

> In the classroom last year we had two children with Asperger's that had problems with anger so with the help of the special education teacher we built a five-point system. . .first one you're kind of edgy. Second, you're starting to get a little bit more agitated. Third one is you're getting kind of angry. Fourth, is you're mad. Fifth, you're just irate. So if you get to five you know that you need to come and give your ticket to the teacher and go and find your safe spot. All the teachers were notified about it (#3).

This system seemed to work well once children were taught to recognise their signs of anger.

A few other teachers also mentioned that it is critical to recognise early signs of a potential behavioural outburst in their students so it could be minimised or avoided, with the best interests of the student in mind. One teacher recognised the importance of removing environmental triggers to provide a better learning environment for children with ASD:

> Each classroom varies in its environment. It could be the bright lights, you know, a toilet that flushes extremely loud. It could be a hand dryer, a lot of different factors. . .If we could just somehow eliminate those environmental triggers I think it would help them grow. It would give them those strategies to learn, especially at a young age, self-regulating skills to be independent (#13).

Another way teachers avoided perceived poor behaviour was by keeping the child engaged in something of interest and at an appropriate academic level. For instance, 'He was bored silly because he was really bright. I didn't really have the behaviour issues in my room because I was able to challenge him academically' (#6).

Goal setting/rewards

The importance of setting individualised goals and rewarding socially acceptable behaviour was highlighted as a mechanism of inclusion for all children, including children with autism. For example:

> Kids with autism need an external motivator and finding that motivator is really difficult. I have somebody to present a motivator in the form of a token board where the kids earn tokens to complete the chart of the board (#13).

Other teachers used a similar reward system but in the form of stickers and earning extra privileges:

> This past year I had a child with Asperger's syndrome. . .We came up with a system for him where he had a little grid on his desk for the days of the week and the time periods of the day. We set a timer and if he made it though that time period without an outburst he'd get a sticker on the grid and so many stickers would equal a certain privilege (#4).

Teachers commented that using rewards for socially acceptable behaviour helped children to stay focused and prevented behavioural outbursts:

> If the child was on task and was helpful then certain rewards would be given in terms of computer time or choices of what he could do and that would sometimes help with the behaviour and with his inclusion within the classroom (#11).

Where possible, teachers adapted lessons to ensure the inclusion of all of their students. Some of the tailored teaching methods (e.g. structured routine, creative planning, building on specific interests) were consistent with inclusive pedagogy (Florian and Black-Hawkins 2011), while others (i.e. preventing behavioural outbursts, goal setting) were not due to the perceived necessity to focus on specific needs of individual students. Thus, we argue that the manner in which some teachers choose to deal with individual behaviour of children with autism may single them out and highlight the student's 'differences'.

Teamwork

Inclusive pedagogy recognises that learning difficulties pose challenges for teachers and that it is important to work with others to enhance the inclusive environment of the classroom (Florian and Black-Hawkins 2011). Our results showed that an important aspect of achieving inclusion for children with ASD in mainstream classrooms, noted by 13 teachers, is teamwork amongst school staff including resource teachers, educational assistants and occupational therapists on developing effective strategies for teaching students who have ASD. One teacher captured the importance of teamwork for successfully including children with ASD:

> In all my career, there's been no other disability that has required as much of a village to raise a kid. I've just never seen a disability where you really need everybody's input (#8).

Another teacher commented on the importance of relying on colleagues for inclusion strategies and advice. For example, one teacher commented: 'You have the school resource teams where you can bring up your concerns. They always give us strategies to try to use in the classroom' (#5).

Another teacher also explained how having help from an interdisciplinary team was important: 'I had the OT [occupational therapist] person in and a couple of people and it was a matter of we can try this and we can try that' (#2). Teachers emphasised that you do not have to be an expert but you have to 'be willing to really get to know the kid' (#6) and 'willing to grow and to work with a team and closely with the parents' (#8).

Indeed, the inclusion of children with disabilities involves a continuous process and a team effort.

One teacher mentioned how it is sometimes easier to recognise a child with autism and particular issues they may be having in a smaller school where teachers have a better opportunity to know more of the children. Specifically, 'everybody knows everybody else and so the big kids look after the little kids' (#3).

A critical element to improve inclusion of a child with ASD is to ensure that all members of staff have an awareness of the child's needs including the development of a safety plan within the classroom and school:

> We had a safety plan that was used with all of the teachers and staff at the school because there was a little girl in my class who enjoyed provoking him [boy with autism]. So we had to come up with a safety plan. We actually had a staff meeting with the whole staff; explain that these two kids are supposed to be apart at recess... Things like that can provoke him. You have to put things in place to keep him safe or to keep him from getting himself into trouble as well (#4).

In sum, teamwork within schools is a critical element of the inclusion of children with ASD so that everyone is aware and sensitive to their needs. This aligns with the inclusive pedagogical approach (Florian and Black-Hawkins 2011) where teachers work with others to develop new ways of supporting children.

Building a rapport with parents and students

Similar to the teamwork approach, teachers often found it important to work with parents to help build an inclusive learning environment for students. In creating an inclusive environment, 10 of the teachers described how it is essential to build a rapport with the student and parents and to have an open system of communication. Teachers described the importance of alerting parents that their child is a likely candidate for acquiring a diagnosis of ASD (if undiagnosed) and to encourage them to seek an official diagnosis in order to access the appropriate support and resources available to them.

Teachers discussed the importance of building a warm and caring relationship with the child so they felt comfortable within the class. Most teachers also mentioned how they helped the child to develop friends and a support system. For example:

> letting them know they have someone safe they can talk to...You should build a really good relationship with the child and with the parents and make sure the child has some friends at least to talk to, you know, try to be very inclusive in the classroom (#3).

One teacher described how critical it is for children to feel safe and comfortable:

> I really think building a good solid relationship with the kids with any kind of disability really helps to cement things and makes them feel more confident and more comfortable in the classroom (#3).

Building an open communication system with the parents was also critical to successfully including the child. This helped teachers to gain a better understanding of the child and their specific needs. For example, 'a good dialogue with parents is important because it is really interesting how different behaviours at school and at home can be and finding out what works in the one place' (#2).

A few teachers mentioned how a home visit was important to gain a better understanding of how the child functions in a familiar environment or discussing with parents which strategies work best with the child:

> For me, you have to meet with the parents. I always did home visits because I wanted to see a kid in their own environment. You can learn a lot by how the parents interact with them and what little things they do at home that will help or hinder. I also ask the parents to come up with a list of interest inventories (#8).

Teachers commented that parental support and communication is essential for the successful integration of a child with ASD. Specifically, one teacher said, 'If you've got the parental support it's huge to help with the successes because there's carry over between home and school' (#3). Several other teachers had similar comments about the importance of parental involvement:

> If the parents are on board and really willing the success is phenomenal (#8).
> I see a huge difference when the parents are much more involved (#13).

Indeed, building a rapport with students and parents is critical for the successful inclusion of children with ASD in mainstream classrooms. This approach outlined by teachers is consistent with inclusive pedagogy (Florian and Black-Hawkins 2011), which concentrates on building an approach that enhances the classroom learning environment for all students.

Building a climate of acceptance in the classroom

Inclusive pedagogy (Florian and Black-Hawkins 2011) focuses on everyone in the classroom and aims to avoid stigma by those who are different or who may be marginalised within the class (Florian and Black-Hawkins 2011). Building a climate of acceptance and social inclusion for children with ASD is essential. Teachers said this was done by minimising opportunities for exclusion and increasing disability awareness within the classroom.

Minimising exclusion

Several teachers described how they would make an effort to minimise differences between students, especially for those having to go out of the classroom to receive special education supports. For example,

I may ask them to take a small group to an alternative workspace to complete the same work the other students are doing. It could be a mix of students who are and are not identified for different purposes (#9).

Teachers described how they would send out several students regardless of whether they needed extra help or not:

> I'm pulling anyone who needs to come for extra help not just the students who are identified as needing extra help so that way they don't feel isolated so you don't want them to get that social stigma attached sometimes to going for special Ed. So I take a mix of kids on a voluntary basis. (#12)

Another essential approach to building an inclusive environment is to build acceptance of all differences amongst students. For example:

> Kids don't like to feel different. . ..Our school board in particular is very inclusive. Something I try to do with my whole class always is to make them understand right from the beginning of the year that we're all different and different kids may do different things. (#4)

Teachers utilised an inclusive pedagogical approach (Florian and Black-Hawkins 2011) in their use of a variety of grouping strategies to support everyone's learning rather than singling out a few people.

Disability awareness

In building a climate of social inclusion and acceptance, 12 teachers advocated for providing students with information about the disorder, with an emphasis on accepting differences and minimising exclusion. For example, 'The number one thing would have to be that whole climate of acceptance within the class . . . like a little more understanding or whatever because they're like that' (#4). Some teachers emphasised an acceptance of differences: 'in my classroom everybody's treated fairly. We talk about the fact that we're all different in our own way and we have to accept that' (#5). Increasing awareness of the condition and support for children with ASD is another strategy teachers used. For instance, 'Other kids need to be taught how to support this child's growth socially and it takes a lot of understanding on their part' (#13).

Some teachers noted how older children were able to self-disclose their condition to their classmates to help create awareness and understanding:

> He would stand up and say, yep, I have autism and this is what it means and when I slap this is what I'm doing and this is why I need to do it. He was able to verbalize it so well. His mom was such a strong advocate for him and she would come in and talk as well. And the kids just went, yeah, he has autism. I have diabetes. It was just, whatever (#6).

Ten teachers provided disability awareness and/or sensitivity information and activities for their class to help increase the full inclusion of the child with ASD:

> I got a video where I educated the students in my classroom on the problems we might see and there came a teacher's manual that kind of helped you. What really worked for me was educating the kids so they don't become afraid of what they see. When he did something or if he was loud in the classroom or if he was wearing his weighted vest or whoopee cushion or he needed time to come out of the classroom, the kids didn't go, 'oh, oh', you know? (#1).

In building a climate of acceptance and social inclusion within their class, children needed to be encouraged to accept differences, support the children with ASD and find ways to include them in all lessons and activities. Teachers often spoke to the children in the class directly about the characteristics of autism:

> I would suggest talking to the rest of the children in the class about what they can do to help him or her feel more included and to ask them to invite them into the games. They won't always want to be there and sometimes they'll do things you think are stupid or mean but you have to understand that their brain is different than yours. If they get angry, back away and go get a teacher rather than getting in a fight (#3).

A large part of increasing disability awareness was also to encourage children to accept differences and diversity:

> You need to be more proactive instead of reactive. I think the best place for the kids [with autism] is in a school setting with their peers they live with in their community because everybody benefits from having the kids there. They learn to be tolerant (#8).

The 'buddy system' (i.e. where a child with ASD is paired with a typically developing child) or 'circle of friends approach' (where children are encouraged to be inclusive and accepting of a child with a disability) was also helpful to eight teachers for including children. It also gave other children in the class the opportunity to get to know the students with ASD and develop tolerance for differences while recognising similarities:

> What I find really helps is creating like a buddy system and that buddy system is to know if the student is having difficulties, that's the person you can go to. That buddy sits with you. I've found pairing that whole buddy system really works because it helps the student see the student just like them. We've had a lot of success with that (#1).
> There's always kids in the class who are willing to be a peer buddy. . .Really plan out who's going to be the peer buddy and I think you have to change it up because no one wants to be latched on to somebody forever (#8).

In sum, building a climate of acceptance in the class involved focusing on abilities, minimising differences and enhancing children's knowledge about disability; actions that are all consistent with an inclusive pedagogical approach (Florian and Black-Hawkins 2011).

Discussion and conclusion

Although children with ASD are increasingly being placed within mainstream classrooms, it does not guarantee they will be socially accepted by their peers (Lindsay and Edwards in press; Lindsay and McPherson 2012a, 2012b). This often creates a challenge for teachers. The inclusion of all children, especially those with disabilities, is critical for their social development, sense of belonging and full participation (Lynch and Irvine 2009). This study addresses two important gaps in the literature. First, most research has focused on teachers' challenges of including a child with ASD or their perceptions of inclusion, while less is known about the strategies they use, their inclusive pedagogy (Florian and Black-Hawkins 2011), to include them within a mainstream class. Second, past research is limited because there is a tendency to define inclusion as the placement of a child with a disability in a regular classroom rather than as belonging as a valued member of the class (Guralnick et al. 2007).

Our findings showed that teachers typically followed an inclusive pedagogical philosophy (Florian and Black-Hawkins 2011) in their approach to developing inclusive classrooms. Many of the strategies teachers used were concerned with the learning of all children in the class and not specifically the children with ASD. The teachers we spoke with are strong advocates of inclusion and view it as an integral part of their role as teachers. Past studies have also emphasised the importance of giving students a valued role within the class (Eldar, Talmor, and Wolf-Zukerman 2010; Farlow 1996) to highlight their skills to their peers.

Second, most teachers shared examples that tended to reject deterministic beliefs about ability and the idea that the presence of children with ASD within the class may impede the learning of others. Teachers often emphasised children's abilities, while striving to minimise difference. Some teachers also used a variety of grouping

strategies to support everyone's learning rather than separating children based on ability/disability.

Having a student with ASD in their classroom provided teachers an opportunity to increase their classroom's awareness of the disability in addition to issues surrounding diversity and tolerance. Indeed, the social inclusion of children with ASD involves ensuring that the proper mechanisms are in place in the child's social environment for them to thrive (Humphrey 2008). Past research shows that poor social acceptance and unsuccessful inclusion are often the result of typically developing children not being taught to value diversity and also demonstrates the importance of creating empathy, acceptance and peer belonging within inclusive classrooms (Boutot 2007; Lindsay and McPherson 2012a, 2012b; Maich and Belcher 2012).

Third, our results are aligned with principles of inclusive pedagogy (Florian and Black-Hawkins 2011) which include viewing learning as a professional challenge rather than as deficits in learners; working with other adults that respect the dignity of other students as full members of the class (e.g. teamwork and building rapport with parents); and being committed to continuing professional development as a way of enhancing an inclusive environment. Our findings are similar to past research, showing that having a supportive teaching environment, team work and co-ordination of services are needed for the successful inclusion of children with ASD in mainstream education (Dawson and Osterling 1997; Finke, McNaughton, and Drager 2009; Giangreco 2000; Lipsky and Gartner 1997). The results of this study are also consistent with being committed to continuing professional development as a way of enhancing an inclusive environment. Our findings are consistent with past research, showing that including children with ASD requires significant supports, active involvement in workshops and professional development (Finke, McNaughton, and Drager 2009; Lynch and Irvine 2009). However, it should be noted that some teachers found additional training to be a challenge with limited resources and/or lack of school board priority for appropriate training focused on working with students with ASD.

There were some inconsistencies or aspects of the inclusive pedagogy approach (Florian and Black-Hawkins 2011) that were not as strong in our findings. For example, some of the tailored teaching methods used by teachers (i.e. preventing behavioural outbursts, goal setting) were targeted specifically for children with ASD and their unique needs. Such an approach has the potential to single children out from their peers and could heighten the risk of social exclusion. Conversely, teachers in our study utilised inclusive pedagogy (Florian and Black-Hawkins 2011) in developing structured routines, lesson planning and incorporating student interests to create lessons that worked for all of their students, maximising opportunities for inclusion and minimising opportunities to exclude students with ASD. However, with regard to developing teaching methods to minimise behavioural outbursts in addition to goal setting, teachers were unable to avoid individualised (and somewhat exclusionary) practices. Therefore, we argue that implementing an inclusive pedagogy is complex and may be difficult to achieve for students with high functioning autism who often require specific attention to address behavioural difficulties. Indeed, Florian and Black-Hawkins' (2011) inclusive pedagogical approach could benefit from some adjustments to reflect the complex nature of creating an inclusive classroom environment that also addresses individual needs without excluding students, when some of these particular needs, such as behaviour, are autism specific.

It is important to note the limitations of this study. The findings of this study reflect teachers' perceptions of successful strategies based on a small qualitative sample.

Nevertheless, the findings are consistent with similar past studies on the inclusion of children with ASD. Future research should explore the inclusion of adolescents with ASD within mainstream settings as most studies to date have focused mainly on elementary school children. Second, more work is needed to explore the characteristics of inclusive classrooms and schools.

Although there are often many challenges in working with children with ASD in a mainstream classroom, our findings reveal several recommended strategies that were successful for including children with ASD in mainstream classrooms. These include: (1) providing proper training and resources for teachers and supports for students; (2) utilising relevant colleagues and working within a team to optimise the best strategies for including the child; (3) having tailored teaching methods to align with the student's interests and abilities; (4) having an open communication system with parents and child to establish what strategies work with the child at home; and (5) building a climate of acceptance within the classroom through disability awareness and sensitivity training.

Acknowledgements

This research was funded by an institutional start-up grant.

Notes on contributors

Sally Lindsay, PhD, is a Scientist at Bloorview Research Institute, Holland Bloorview Kids Rehabilitation Hospital and an Assistant Professor in the Department of Occupational Science and Occupational Therapy at the University of Toronto, Canada. Her research focuses on the participation and inclusion of children and youth with disabilities.

Meghann Proulx, BEd, MA, is a Research Assistant at Bloorview Research Institute, Holland Bloorview Kids Rehabilitation Hospital.

Dr. Helen Scott is the Director of the Canadian Network for Maternal, Newborn and Child Health, Peterborough, Ontario and Assistant Professor at the Dalla Lana School of Public Health, Toronto, Ontario. She recently completed her postdoctoral fellowship training in Epidemiology at Bloorview Research Institute, where her research focused on creating accessible built environments for children with disabilities.

Nicole Thomson, MSc(OT), PhD (Cand.) is the Collaborative Practice Leader at Holland Bloorview Kids Rehabilitation Hospital and PhD Candidate in the Graduate Department of Rehabilitation Sciences, University of Toronto.

References

Autism Society Canada. 2010. *Prevalence in Canada*. http://www.autismsocietycanada.ca/asd_research/research_prevalence/index_e.html (accessed November 30, 2010).

Barnes, K. 2009. The attitudes of regular education teachers regarding inclusion for students with autism. *Dissertation Abstracts International* 69, no. 10A: 3905.

Boutot, E. 2007. Fitting in: Tips for promoting acceptance and friendships for students with autism spectrum disorders in inclusive classrooms. *Intervention in School and Clinic* 42, no. 3: 156–61.

Bowe, F. 2004. *Making inclusion work*. Upper Saddle River, NJ: Prentice Hall.

Bredekamp, S., and C. Copple. 1997. *Developmentally appropriate practice in early childhood programs*. Washington, DC: National Association for the Education for Young Children.

Chandler-Olcott, K., and P. Kluth. 2009. Why everyone benefits from including students with autism in literacy classrooms. *The Reading Teacher* 62, no. 7: 548–57.

Connor, M. 2000. Asperger syndrome (ASD) and the self-reports of comprehensive school students. *Educational Psychology in Practice* 16, no. 3: 285–96.

Davis, P., and L. Florian. 2004. *Teaching strategies and approaches for pupils with special educational needs: A scoping study*. Research report RR516. Nottingham: DfES.
Dawson, G., and J. Osterling. 1997. Early intervention in autism. In *The effectiveness of early intervention*, ed. M. Guralnick, 307–26. Baltimore, MD: Paul H Brookes.
Eldar, E., R. Talmor, and T. Wolf-Zukerman. 2010. Success and difficulties in the individual inclusion of children with autism spectrum disorder in the eyes of their coordinators. *International Journal of Inclusive Education* 14, no. 1: 97–114.
Farlow, L. 1996. A quartet of success stories: How to make inclusion work. *Educational Leadership* 53, no. 5: 51–5.
Finke, E., D. McNaughton, and K. Drager. 2009. All children can and should have the opportunity to learn. *Augmentative and Alternative Communication* 25, no. 2: 110–22.
Florian, L., and K. Black-Hawkins. 2011. Exploring inclusive pedagogy. *British Educational Research Journal* 37, no. 5: 813–28.
Frombonne, E. 2003. Modern views of Autism. *Canadian Journal of Psychiatry* 48: 503–5.
Geneva Centre for Autism. 2010. *Fact Sheet on Autism*. http://www.autism.net/resources/about-autism/44-fact-sheet-autism.html (accessed November 30, 2010).
Giangreco, M. 2000. Related services research for students with low-incidence disabilities: Implications for speech-language pathologists in inclusive classrooms. *Language, Speech, and Hearing Services in Schools* 31: 230–9.
Grbich, C. 2007. *Qualitative data analysis: An introduction*. London: Sage.
Guralnick, M., B. Neville, M. Hammond, and R. Connor. 2007. The friendship of young children with developmental delays: A longitudinal analysis. *Journal of Applied Developmental Psychology* 28, no. 1: 64–79.
Hinton, S., K. Sofronoff, and J. Sheffield. 2008. Training teachers to manage students with Asperger's syndrome in an inclusive classroom setting. *The Australian Educational and Developmental Psychologist* 25, no. 2: 34–48.
Horrocks, J., G. White, and L. Roberts. 2008. Principals' attitudes regarding inclusion of children with autism in Pennsylvania public schools. *Journal of Autism and Developmental Disorders* 38: 1462–73.
Howlin, P. 1998. Practitioner review: Psychological and educational treatments for autism. *Journal of Child Psychology and Psychiatry* 39: 307–22.
Humphrey, N. 2008. Including pupils with autistic spectrum disorders in mainstream schools. *Support for Learning* 23, no. 1: 41–7.
Humphrey, N., and S. Lewis. 2008. Make me normal: The views and experiences of pupils on the autistic spectrum in mainstream secondary schools. *Autism* 12, no. 1: 23–46.
Humphrey, N., and G. Parkinson. 2006. Research on interventions for children and young people on the autistic spectrum. *Journal of Research in Special Educational Needs* 6: 76–86.
Jindal-Snape, D., W. Douglas, K. Topping, C. Kerr, and E. Smith. 2005. Effective education for children with autistic spectrum disorder: Perceptions of parents and professionals. *International Journal of Special Education* 20, no. 1: 77–89.
Jones, A., and N. Frederickson. 2010. Multi-informant predictors of social inclusion for students with autism spectrum disorders attending mainstream school. *Journal of Autism and Developmental Disorders* 40, no. 9: 1094–103.
Kraayenoord, C. 2007. Revisiting the key lessons learned from inclusive education: Continuing the research agenda. *International Journal of Disability, Development and Education* 54, no. 2: 145–9.
Lindsay, S., and A. Edwards. in press. A systematic review of disability awareness interventions for school-aged children. *Disability and Rehabilitation*.
Lindsay, S., and A. McPherson. 2012a. Experiences of social exclusion and bullying at school among children and youth with cerebral palsy. *Disability & Rehabilitation* 34, no. 2: 101–9.
Lindsay, S., and A. McPherson. 2012b. Strategies for disability awareness and social inclusion: Listening to the voices of children with cerebral palsy. *Child: Care, Health & Development*, 38, no. 6: 809–16.
Lipsky, D., and A. Gartner. 1997. *Inclusion and school reform: Transforming America's classroom*. Baltimore, MD: Paul H. Brookes.
Lynch, S., and A. Irvine. 2009. Inclusive education and best practice for children with autism spectrum disorder: An integrated approach. *International Journal of Inclusive Education* 13, no. 8: 845–59.

Maich, K., and E.C. Belcher. 2012. Using pictures books to create peer awareness about autism spectrum disorders in the inclusive classroom. *Intervention in School and Clinic* 47, no. 4: 206–13.

Marks, S., J. Shaw-Hegwer, C. Schrader, T. Longaker, I. Peters, and F. Powers. 2003. Instructional management tips for teachers of students with autism spectrum disorder. *Teaching Exceptional Children* 35, no. 4: 50–4.

McGregor, E., and E. Campbell. 2001. The attitudes of teachers in Scotland to the integration of children with autism into mainstream schools. *Autism* 5, no. 2: 189–207.

Minister's Autism Spectrum Disorders Reference Group. 2007. *Making a difference for students with autism spectrum disorders in Ontario schools*. Ministry of Education and Ministry of Children and Youth Services, http://www.edu.gov.on.ca/eng/document/nr/07.02/autismFeb07.pdf (accessed November 30, 2010).

Morton, J., and J. Campbell. 2008. Information source affects peers' initial attitudes toward autism. *Research in Developmental Disabilities* 29: 189–201.

National Autism Society. 2003. *Autism and education: The ongoing battle*. London: National Autistic Society.

Ontario Ministry of Education. 2012. *The education act on special education*. Ontario Ministry of Education, http://www.edu.gov.on.ca/eng/general/elemsec/speced/edact.html (accessed December 9, 2012).

Park, M., M. Chitiyo, and Y. Choi. 2010. Examining pre-service teachers' attitudes towards children with autism in the USA. *Journal of Research in Special Educational Needs* 10, no. 2: 107–14.

Roberts, J. 2007. Autism and inclusion: Teachers' perspectives on the mainstreaming of autistic students. Master's thesis. University of Witwatersrand, Johannesburg.

Robertson, K., B. Chamberlain, and C. Kasari. 2003. General education teacher's relationships with included students with autism. *Journal of Autism and Developmental Disorder* 33, no. 2: 123–30.

Smith, E., and C. Brown. 2000. Creating an autism friendly environment. *Educational Psychology in Scotland* 5, no. 3: 23–5.

Statistics Canada. 2010. *Educational services and the disabled child*. Statistics Canada, http://www.statcan.gc.ca/pub/81-004-x/2006005/9588-eng.htm (accessed November 30, 2010).

Symes, W., and N. Humphrey. 2010. Peer-group indicators of social inclusion among pupils with autistic spectrum disorders (ASD) in mainstream secondary schools. *School Psychology* 31, no. 5: 478–94.

Vakil, S., E. Welton, B. O'Connor, and L. Kline. 2009. Inclusion means everyone! The role of the early childhood educator when including young children with autism. *Early Childhood Education Journal* 36: 321–6.

Villa, R., J. Thousand, H. Meyers, and A. Nevin. 1996. Teacher and administrator perceptions of heterogeneous education. *Exceptional Children* 63, no. 1: 29–45.

Wilmshurst, L., and A. Brue. 2010. *The complete guide to special education*. San Francisco: Jossey-Bass.

Appendix 1. Interview guide

(1) Can you please describe how long you have been teaching for (probe for demographics, number of years taught, training, etc.)?
(2) What is your approach to teaching children with autism spectrum disorder?
(3) What works well within your classroom in terms of including children with autism spectrum disorder (educationally, and socially)?
    (a) How are exclusionary practices and challenges to learning removed?
    (b) How is the participation of students with autism enhanced??
(4) Do you have any suggestions/advice for how educators could facilitate the inclusion of children with disabilities in the classroom?
(5) Is there anything else that you would like to add that we did not get a chance to talk about?