Factors influencing the selection and use of strategies to support students with autism in the classroom.

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Abstract

Children with Autism Spectrum Disorder (ASD) may have additional needs in the classroom, resulting from delays in their development of critical school readiness skills, which include following directions and attending to tasks. Consequently, empirically supported strategies targeting these skills have been developed, however, there is evidence to suggest they are not being utilised. The aim of this study was to address this research to practice gap, by working with teachers to identify factors that contribute to their decisions to select and implement these strategies. Using a qualitative methodology and purposive sampling, 13 Australian educators were interviewed to determine factors that influence their selection of strategies to use with children with ASD, including information sources they utilised. Teachers reported that individual characteristics of the children, their own professional experience, and the need for strategies to work within their settings strongly influenced their decision making. Further, in their efforts to make good decisions surrounding the support of students with ASD, teachers not only accessed supports provided by their school but in some cases sought out additional resources. This study helps to identify the practical considerations that influence the knowledge and use of empirically supported strategies by mainstream teachers.

Keywords:

ASD, empirically supported treatments, education, teachers, intervention

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The education of individuals with autism spectrum disorder (ASD) is becoming increasingly common in general education settings. This increase can be attributed to legislative requirements (e.g., Australia: Disability Discrimination Act, Australian Government, 1992; USA: Individuals with Disabilities Education Act of 2004; Ireland: Education for Persons with Special Educational Needs Act 2004, Government of Ireland, 2004) which outline the rights of individuals with disabilities to receive education in the least restrictive environment. In Australia, which was the context for this study, the results of a recent survey indicated that 96.7% of school-aged children with ASD experience some degree of educational restriction (e.g., attending special school, attending special class in general education school, requiring special assistance) (Australian Bureau of Statistics, 2017). In attempting to achieve successful inclusion of children with ASD, and reducing these educational restrictions, two main factors can be considered: how to best prepare the child for school, and how the school can prepare for the child.

At the child level, a set of skills often referred to as ‘school survival’ or ‘school readiness’ skills (hereon referred to as school readiness skills) have long been identified (e.g., Vincent et al., 1980) as critical to children’s educational success as they enter the foundation year of schooling. These school readiness skills extend beyond academic skills (e.g., pre-literacy and numeracy skills) to include skills such as the ability to work independently, follow directions, attend to task and instructions, and regulate emotions (Hops & Cobb, 1973; McCormick & Kawate, 1982; Vincent et al., 1980; Welchons & McIntyre, 2017). Welchons and McIntyre (2017), in their study investigating the predictors of social and behavioural outcomes in the first year of school, reported that higher levels of adaptive behaviours and fewer problem

behaviours predicted positive transition to school for children with and without disabilities. The authors further highlighted the importance of targeting these school readiness skills during early intervention, to facilitate positive transitions. However, attaining these skills prior to entry into school may not always be achievable for children with ASD (Salisbury & Vincent, 1990) and preparing teachers to continue to support the development of these skills as children transition to formal schooling is necessary (Kemp & Carter, 2006).

Ensuring that mainstream classroom teachers are prepared to teach students with special needs is an important contributing factor to the success of students with ASD at school (Ashburner, Ziviani, & Rodger, 2010; Goodman & Williams, 2007; Jordan, Schwartz, & McGhie-Richmond, 2009; UNICEF, 2012). However, in Australia, a Productivity Commission (2012) report into the education workforce identified a lack of teachers with suitable qualifications and training to support students with additional needs at the time. Partly in response, the Nationally Consistent Collection of Data on School Students with Disability (NCCD) (Commonwealth of Australia, 2016) program has been implemented to ascertain the number, and adjustments being provided, for students with a disability with the view to better meeting their needs. However, there remains a need for research to address the extent to which teachers are equipped to support students with ASD and their application of empirically supported strategies.

While no single strategy is universally effective in meeting the learning and participation needs of all children with ASD, it is important that clinicians and teachers working with this population engage in evidence-based practice (EBP). EBP is a decision-making process whereby users integrate the best available research, with clinical or professional experience, while considering client characteristics (Anderson, 2006; McGrew, Ruble, & Smith, 2016; Sackett,

2000). When considering the best available research, there are a number of empirically supported strategies, which have been implemented to target school readiness skills, that have demonstrated efficacy and clinical utility (Fleury et al., 2015). Fleury et al. (2015) identified 18 empirically supported strategies reviewed in the National Professional Development Center report (Wong et al., 2015) which targeted school readiness skills in school-aged children with ASD. These strategies included prompting, reinforcement, and antecedent-based interventions, broadly classified across three domains: classroom behaviours, social communication and social interaction, and challenging behaviour (Fleury et al., 2015). However, there is a distinct lack of information available on the extent of their uptake by general education teachers.

To address this gap, the current authors investigated the knowledge, use, and perceived social validity of 20 strategies (18 empirically supported, two non-empirically supported) identified by Fleury et al. (2015) in a sample of Australian mainstream foundation year teachers (citation withheld for blind review). Teachers surveyed reported using all strategies at least sometimes, with empirically supported strategies being used more frequently than non-empirically supported strategies (citation withheld for blind review). The results were consistent with findings of research in special education (Borders, Bock, & Szymanski, 2015; Carter, Stephenson, & Strnadova, 2011; Hess, Morrier, Heflin, & Ivey, 2008) and early intervention (EI) settings (Paynter et al., 2016) indicating that educators frequently use a combination of both empirically and non-empirically supported strategies. Further, teachers in the study reported seeking information on ASD most frequently from within school supports (e.g., other teachers) and drawing from their own experience (citation withheld for blind review). While professional judgment and experience is one aspect of the EBP approach, it is critical that teachers combine this with the best available research, while considering client values and needs.

While this research provides insight into the extent to which teachers are likely to be utilising empirically supported strategies when working with children with ASD in the classrooms, survey research is limited in its ability to gain a richer understanding of the phenomenon. For example, survey research fails to capture the processes teachers undergo when making decisions on strategies they wish to implement. Understanding the nature of these processes and factors which might influence decision-making, such as access to resources, is needed to determine possible mechanisms for change in strengthening uptake in this population. To achieve this, it is important to involve the end users of these strategies in research which contextualises the findings from the above studies, in their day to day experiences of supporting children with ASD in the classroom.

Our aim in this study was, therefore, to explore the experience of teachers working with children with ASD, with a focus around their role in selection and implementation of strategies to support these students, the supports they access as a teacher, and any suggestions they have around improving supports for themselves and their students. Given the lack of previous research examining these issues, a qualitative approach was used to gain a rich understanding of the phenomenon.

Method

Design

A qualitative design was employed, involving a series of semi-structured interviews analysed using thematic analysis, to explore teachers' views and experiences of working with children with ASD in the classroom. Thematic analysis was chosen as it can generate an abstract account of participants' views and experiences of the phenomenon, through the identification and analysis of patterns, often referred to as themes (Braun & Clarke, 2006). Thematic analysis

also enables the integration of information and ideas across participants and is considered an approach to qualitative analysis in its own right (Braun & Clarke, 2006). Unlike content analysis, where researchers seek to quantify statements made by participants, thematic analysis allows researchers to give equal consideration, during analysis, to all views expressed by participants. Our approach to thematic analysis was contextualised within the social constructivist theory, which enables researchers to better understand how learning occurs, within specific contexts and cultures, and further how knowledge is created, disseminated, and informs practice (Thomas, Menon, Boruff, Rodriguez, & Ahmed, 2014).

Participants

Participants were 11 general education teachers, one Head of Special Education (HOSES: the lead administrator of the schools' special education program), and one special education support teacher working across 11 schools in Australia. As the inclusion of participants with diverse perspectives can assist in stimulating discussion across interviews, all participant data were analysed together. Participants' roles (i.e., teacher, HOSES, special education teacher) have been clearly labeled in the presentation of results, with pseudonyms used to maintain privacy. All participants worked directly with children with ASD at the time of the study, either as their classroom teacher or in a supporting role (i.e., worked across multiple classrooms). The children with ASD were in their foundation year of school, also known as 'Prep', having transitioned from an early intervention (EI) service within the past three months. All participants were female, aged between 25 and 56 years ($M = 40.27$ years, $SD = 10.65$ years) who had been teaching between 1.58 and 34 years ($M = 15.58$ years, $SD = 12.38$ years). Participants worked largely in government-funded public schools (92.3%) in metropolitan locations (76.9%). Many participants (53.8%) had completed post-graduate qualifications. The average class size for

classroom-based teachers in the study was 26 children, and participants indicated having taught between one and 20 children with ASD across their careers ($M = 8.15$, $SD = 5.06$). See Table 1 for more details.

Table 1.

Participant demographics

Participant Characteristics	<i>n</i>	%
Highest Academic Qualification		
Diploma	1	(7.7)
Bachelor's Degree	5	(38.5)
Post Graduate Degree	7	(53.8)
Training Accessed by Participants		
Online	7	(53.8)
School based workshop	9	(69.2)
University subject/course	4	(30.7)
Postgraduate qualification	1	(7.7)
In person half day workshop	3	(23.1)
In person three-day workshop	3	(23.1)
In person multiple workshops	4	(30.7)

Procedure

Ethics clearance was obtained by the authors' research institute [blinded for review], and the Department of Education [location blinded for review]. Purposive sampling was used to recruit for this study and included parents whose child attended one of four sites operated by a large EI service provider in Australia. The EI service, which operates nine sites nationally, was selected as it is the only service which provides a comprehensive program for students with ASD in the region. The EI service fees were comparable to the average fee for children attending local

childcare services, after government funding and fund-raising. Families attending the EI service were also eligible for the same rebates and concessions of up to 50% of the weekly cost up to a maximum amount per year (Vivanti et al., 2014). Further, the organisation also provided bursaries to low-income families to ensure accessibility. Thus, families attending were representative of the population in those locations. The EI site managers were invited to share the information sheet and consent form for the study with families whose children were leaving the service to attend general education schools in 2017. Across the four sites, 18 families consented, providing details of their child's prospective school. No further commitment was required by families. Prior to contacting schools, two families were excluded from the study on the following grounds: one child was attending school on a part-time basis, and one child was attending an ASD-specific school.

Principals of the remaining schools were contacted by the first author in term one of 2017 (January – April) and provided with the information and consent forms for the study explaining that teachers who consented to participate in the project would be interviewed by the first author. Of the schools approached, four principals declined participation in the project. Principals who agreed to participate then provided the first author with details of the relevant teachers who were then provided with information sheets and consent forms. All teachers approached consented to participate in the interviews.

Each participant was interviewed separately, by phone, between weeks six and 10 of term one. Prior to the interview, teachers were provided with a copy of the semi-structured interview guide (see Appendix A) which encouraged participants to comment on (a) the transition to school process for the child, (b) any strategies they were currently using when working with the child, and what types of skills and behaviours these targeted, (c) how they selected strategies, (d)

the supports that were available to themselves and the child, and (e) any suggestions for how support and transition could be improved. Teachers were encouraged to speak freely on these topics. At the start of the interviews, participants were reminded of the information contained in the Participant Information Sheet, specifically that all information provided would remain confidential, that they were free to withdraw from the research at any time, and that interviews would be audio recorded. Interviews took between 15 and 30 minutes to complete, except for one interview which took 60 minutes. Recordings were transcribed by a research assistant, with transcriptions being provided in a word.doc format. Transcriptions were sent to participants to complete member checks, to ensure that statements made during interviews reflected their attitudes and thoughts regarding the phenomenon. Three teachers made amendments to their transcripts to correct expression (e.g., grammar). After thematic analysis was completed, a summary of the results was sent to principals, teachers, and families who had participated in the research.

Data Analysis

As outlined by Braun and Clarke (2006), thematic analysis consists of a series of six stages: “(1) familiarizing yourself with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report” (p.87). First, following transcription, the first author read through each interview multiple times to familiarise herself with the data, a process known as immersion. Second, using the NVivo software (QSR International Pty Ltd, 2015) the first author isolated significant statements in the data, giving equal attention to all data contained in the interviews. These significant statements were used by the first author to generate codes. Across the first five interviews, 90% of the codes were developed, leading to confidence that data saturation was achieved across the sample.

Third, codes were then sorted and grouped together to form initial themes, along with relevant extracts from the text. During this stage, a thematic-map was developed to assist the researchers in understanding relationships between themes. Next, themes were refined by the first and second authors, ensuring that themes were coherent and distinguishable from one another. The thematic map was also refined. In the next stage, themes were defined and named, with a detailed analysis produced for each theme. During this analysis, sub-themes within the overarching themes were identified. A final thematic map of themes, sub-themes, and their relationships was then produced (see Figure 1). Finally, the report was produced and extracts from transcripts to illustrate themes and sub-themes were identified.

Results

Two central themes were developed during the analysis. The first theme ‘Trying the best we can’ encompassed the daily challenges teachers faced in providing support to students with ASD, and their efforts to provide a safe, inclusive environment for the students. The second theme ‘Behind the scenes’ captured the various supports accessed by teachers of students with ASD, and desired changes to the supports available. Theme one and two, and their associated sub-themes are presented below using the participants’ own words.

Theme One: Trying the Best We Can

In sharing their experiences of working with children with ASD in their classroom, participants expressed that there were several factors influencing their decision to use, or not use, specific strategies. These factors clustered around three core sub-themes – *the impact of experience, dealing “moment to moment”*, and *making it work, whatever that looks like* – indicating the various challenges faced by teachers. The nature of these factors is presented below.

Figure 1. Themes and sub-themes

The impact of experience

Regardless of whether participants had taught 20 children with ASD, or one child with ASD, they reflected on the impact of experience on their ability to support these children. Erica, a teacher, expressed that having extensive experience had helped prepare her for what to expect when teaching students with ASD:

I was really lucky in the sense that I’ve worked as a teacher-aide and a practical teacher [across a number of settings] ... So, I’ve always been around it over the last three or four years, and a lot of my practical [teaching] placements had children with ASD in the room.

However, she also highlighted that ‘it’s certainly still challenging’, irrespective of the degree of experience. Having experience was not always associated with feelings of being well equipped to support students with ASD, as Sarah (teacher) expressed, ‘I’ve taught other children with ASD... [but] I wouldn’t say my knowledge [of ASD] is great.’ A lack of experience also appeared to impact on some participant’s knowledge of, and ability to effectively select, strategies to use with students, as Rhiannon (teacher) explained, ‘I would have to say I didn’t have the biggest bank of knowledge and strategies, for working with children with autism, so it’s been a bit of learning curve for me.’ In some cases, a lack of experience did not hinder teacher’s optimism in their ability to educate students with ASD, with on the job learning viewed as a positive by-product of experience gained in the classroom. Fiona (teacher), for example, noted that ‘I’m learning a lot as a classroom teacher ... just in the short time that I’ve had Chris I’ve learnt a lot about the sort of strategies that I can use with him.’

Dealing “moment to moment”

It became apparent across the interviews that participants’ considerations for providing support to students with ASD were often not based on the quality or research support of the strategy, or ensuring it matched the children’s needs. Instead, the focus of conversation often centred on what the child, or the class, needed on that day, at that time. As Matilda (teacher) noted, ‘it’s always a steep learning curve, especially because each child is so vastly different.’ Not only did differences between children with ASD impact on participants’ ability to provide support, but daily changes within the children themselves, including their mood, interests, or behaviours at the time, contributed to the challenge of selecting and implementing effective strategies. The following excerpt from Jacqueline’s (teacher) interview demonstrates this challenge:

I found with Timothy that he responds to very different things from one day to another, so one day just ignoring him, and moving to the space where he needs to be, you know, and he'll follow you. Some days you know pulling out the iPad ... you know, directly going 'no, we need to sit', will work sometimes the first [time]... but it's, he's really variable. He changes from day to day as to what he's going to respond to.

Reflecting on her experience in managing challenging behaviours with a student, Kendra, a special education support teacher said, '... so we see what works best for Cooper, what he responds to, um if we try something and it's not working, then we are not going to do it again. This tendency to adopt a 'trial and error' approach to selecting and implementing strategies, and frequently changing strategies when deemed to be ineffective, highlights the sentiment that participants were required to be flexible in their approach to support students with ASD.

Despite the reported challenges of selecting and implementing strategies, participants conveyed a high level of confidence in recognising when strategies were ineffective, as Sarah (teacher) noted, '... you can see whether it's positive or not for them. So, I don't stick at strategies for long...' While participants identified individual differences in children as an important consideration when selecting from an implied bank of strategies available, across the interviews only a small number of strategies were mentioned. Several of these were empirically supported and included modifying the environment and tasks, using teacher and peer modelling, visual supports, social stories, prompting, and reinforcement. However, four participants also reported using non-empirically supported strategies such as sensory therapies (e.g., weighted and sensory toys).

Making it work – whatever that looks like

Participants spoke of a common overarching commitment to including students with ASD in the broader classroom environment. However, while ultimately the goal for many participants was to have the student in the classroom full time (not spending any time in support units at the schools) and engaging in all activities alongside their typically developing peers, this was often met with various challenges. Safety concerns were a paramount priority in Amy's (teacher) classroom, as she noted that Mila (student with ASD) 'pushes children and lashes out at them as she doesn't want them near her', ultimately impacting her ability to fully integrate into the classroom. Graduated exposure to the general classroom, interspersed with time spent in the support unit, was the approach adopted by Dara (teacher) whose end goal was to have the student 'functioning really well in the classroom.' Other participants, such as Jacqueline (teacher), reported that their creative approach to teaching helped with integrating children with ASD, '[he] absolutely hates writing, but will engage with the iPad. So, if I can put a writing task on the iPad, then he does it with a stylus, so we're still getting the grip [motor skill being targeted].'

Utilising 'strategies for [the student with ASD] with the whole class' was another approach adopted by Erica (teacher). For example, 12 of the 13 participants noted using visual schedules for the whole class to promote predictability and routine for the student with ASD. Despite the many and varied steps taken by participants to promote inclusion of the student with ASD into the classroom, there were indications that not all participants felt this was always possible. Harriet (teacher), for example, described the challenges she faced, 'unfortunately with twenty-four other children in the class I'm not always able to, to deliver him exactly what he needs of every moment of every day'. Rhiannon (teacher) also expressed a similar sentiment, reflecting that without the support of her teacher aide in her classroom it would be 'impossible to do [her] job.' Leanne (HOSES), used the analogy that attempting to include children with ASD

in the classroom, is akin to having ‘square peg[s] that we are trying to fit into a round hole’, particularly where they have transitioned from highly structured and routinized environments such as early intervention.

Theme Two: Behind the Scenes

During analysis, it became apparent that teachers were engaging in multifaceted processes to better understand and support students with ASD. Notably, much of this appeared to be going on behind the scenes, often taking into account support available at hand as well as drawing on other sources. The nature of this and implications for teachers’ ability to support children formed theme two. This theme was divided among three sub-themes –*school support*, *training*, and *connection*.

School support.

Participants appeared to be accessing a variety of resources made available to them through the school, including; accessing special education teachers, having teacher aide support in the classroom, and liaising with HOSES. While having these supports available was important to participants, their views on the quality and ease of accessing these supports varied. While participants such as Matilda (teacher) expressed that she felt ‘very fortunate... that [she was] really well supported’ by her school’s special education staff, others, including Loretta (teacher), lamented the lack of structure around the support provided, highlighting that it was often given ‘on a needs basis when you think of something...’ Conversely, Harriet (teacher) discussed that while the access to support in her setting was not timetabled, she felt confident enough that when it was required she would be able to seek it out:

...If I felt like there was, if I needed more help to do a better job, then I would go and seek it. I would go and see Astrid [the HOSES] and see what's available and, you know, ask for some more help.

A positive relationship with special education support staff also appeared to foster trust in the information provided for teachers like Fiona, 'I know I can go to the head of SEP [special education program], or the SEP teachers and ask them because of the relationship I have with them, and I would like I would be able to access that through them.' At an administrative level, Lauren (HOSES) felt that despite recognition that having a student with ASD can pose additional challenges to teachers, the logistics of finding time and funding to provide adequate support was not always available:

Getting that teacher regular time to meet [with me], not just in their own time after school, and before school, but during class time. [Getting that teacher] extra non-contact time. Recognising the teacher aides that are working in there, that they're needing upskilling as well. And that's part of my role, but it's very hard.

Training.

Consistent with the demographic information presented in Table 1, all participants reported having had access to some form of ASD specific training during their career, ranging from workshops to courses undertaken in tertiary education. Across the interviews, however, it became apparent that training was often provided via a whole school approach and was not specific to participants' needs, as Loretta (teacher) explained, 'I wouldn't say me personally. Our school has done some professional development around children with autism as part of a whole school professional development.' In comparison, while Kendra, a special education teacher at her school, had been fortunate to receive additional training opportunities, she appeared to

greatly value the on-the-job training received, ‘mainly I guess [I] learnt by, from the HOSES and just doing the job.’ Erica (teacher) highlighted her feelings towards the inadequate preparation of teachers of students with ASD provided by her tertiary education, saying ‘it’s becoming so much more common now to have a child in your class with ASD, and you feel like, as a teacher, you’re not equipped to support them [through tertiary education].’

It was clear, for teachers such as Harriet and Sarah, that although the training they received through a whole school approach might not be specific to their current needs, processes existed within their schools to request additional support. While Harriet felt ‘confident that they would say yes’ to requests for more training, Sarah was more equivocal in her explanation, suggesting that while she would request additional training, as required, ‘it’s not guaranteed that the school would let [her] access it.’ Unfortunately, it appeared that not all schools followed this process for requesting training, leaving teachers such as Loretta to seek out training in their own time. While motivated to further her knowledge, Loretta highlighted the obvious financial and time constraints that limit teachers in achieving this:

Expense and time is a factor. So even if there were like um, like almost scholarships or something, or funding that could be accessed for those staff who do want to go on and do more study and be upskilled in, you know, in having students with special needs in the class.

Connection.

Connecting and forming networks with professionals both within and external to their current setting was commonly alluded to across the interviews. For some participants, connection with the previous EI setting was particularly important. Where participants had been given the

opportunity to connect with the EI service, such as Harriet (teacher), this was reported to be a positive experience:

[During the transition] he came with one of his [EI service] teachers, um along with all the other children who are now [in prep]. Um and he was supported through that, and it gave me an awesome opportunity to talk with one of his [EI service] teachers.

While the EI service in question had a standardised transition procedure in place for students exiting the program; which includes a teacher visit to the EI service, and a visit from the EI service to the school, some participants reported that no contact had been received. Lauren (HOSES) described the importance of children with ASD having ‘the opportunity to come and experience our school’ and engaged the EI service to ensure transition visits were arranged.

Other participants such as Erica (teacher) described that while the school had been in contact with the EI provider, she was not involved in any transition activities, limiting her knowledge of the child, ‘I would have loved to have visited [EI service] last year too, to see um what they’re doing there, like and would have loved to have seen Samuel in his environment too.’ This was further emphasised by Matilda (teacher), who reflected that being directly involved in the transition process better-prepared teachers in what to expect from students with ASD:

At my previous schools to here [previous places of employment] I used to visit the centres of children that were coming into my room... to see where they actually were, what issues there were, so that we, we’re already aware.

Other participants highlighted that forging connections with other teaching professionals outside their own school had provided them with opportunities to increase their knowledge and awareness of available strategies. Teachers supporting children with additional needs at the

school in which Jacqueline (teacher) worked, frequently met with staff from another local school as part of a collaborative arrangement. However, these arrangements were not reflective of most participants' education settings.

... sometimes just having someone external to it, going 'ok I'm seeing this', it just gives it that whole different point of view. They'll just pick up on something that you haven't thought about ... like it's still working with a collaborative team, but it's sort of external to the situation.

Discussion

The aim of the current study was to explore the experience of teachers working with children with ASD, and specifically their role in selection and implementation of strategies to support these children through the transition into formal schooling. The analyses revealed that teacher decisions to select and implement strategies were influenced by multiple factors. While teachers discussed several supports available to assist them in preparing to educate a child with ASD in their classroom, it was also apparent that areas exist for supports to be reinforced and in some cases expanded upon.

Drawing on experience, whether their own or that of their colleagues, was frequently cited throughout the interviews as influencing teacher's decision making. This result is not surprising, with research in the field of special education (see Cook & Cook, 2013) suggesting that accessing 'within school supports' are frequently used by teachers, with colleagues considered a highly reliable source of information. This finding further builds on the results of Boardman, Argüelles, Vaughn, Hughes, and Klingner (2005) who reported that special educators frequently relied on their own expertise in their selection of strategies when working with students with ASD. In fact, Boardman et al., (2005) noted that that within their sample, the

professional experience of teachers were viewed as more important than consideration of available research evidence. As highlighted by participants in the current study, the reliance on professional expertise, over and above available research evidence, may be due to the increased trust placed in individuals with this knowledge. Furthermore, the belief that research conducted in highly controlled settings has little relevance to community settings, might also play a role. While the application of professional judgement is a fundamental aspect of decision-making within an EBP framework, drawing from the experiences of one's self or others can be influenced by personal biases (Spencer, Detrich, & Slocum, 2012). Future attempts to train teachers would, therefore, benefit from additional information emphasising the importance of balancing professional judgement with consideration of client values and characteristics and the best available research evidence, within the EBP framework, to achieve best outcomes for students with ASD.

Within the population sampled, the consideration of client values and characteristics appeared to play a key role in the selection of strategies. Teachers frequently cited the need to modify and replace strategies daily, to meet the ever-changing needs of children with ASD. This approach supports the findings of Stokes et al., (2016) who highlighted in their research involving mainstream teachers and principals, the value of flexibility and availability of multiple options when working with students with ASD in inclusive classrooms. Despite acknowledging the need for flexibility, teachers in the present study reported using a limited range of empirically supported strategies (e.g., visual supports, antecedent-based interventions). This appears to be in contrast with our previous research (citation withheld for blind review), which found that in a sample of Australian general education teachers, all teachers surveyed reported using the 18 empirically supported strategies listed 'at least sometimes.' It might be that the frequently used

strategies in the present study reflect those most suited to the classroom environment, with the appropriateness of strategies a factor which Boardman et al., (2005) found impacted on strategy selection. However, results of our previous work suggest that all 18 empirically supported strategies were at least ‘somewhat appropriate’ for use in the general education classroom (citation withheld for blind review). With appropriateness of strategies, an aspect of their social validity, linked to teacher knowledge and use in the classroom, it is imperative that in addition to highlighting available strategies which have evidence to support their effectiveness, emphasising their ‘fit’ for the classroom might contribute to better uptake.

A desire for more adequate preparation to support students with ASD entering their class was also highlighted by teachers, whether through greater access to more tailored professional learning, or increased connection with other professionals working with the child. With evidence to suggest that pre-service teacher education programs are not adequate in preparing teachers to support students with disabilities in general education settings (see Australian Education Union, 2015), the provision of high quality, relevant, in-service training should be prioritised. In-service professional learning for teachers often consists of one-day workshops (Brock, Huber, Carter, Juarez, & Warren, 2014), which is reflective of the training received by teachers in the current sample. While these school-based workshops are effective in disseminating information to large groups, the lack of additional coaching and feedback often results in limited changes in actual teaching practice (Alexander, Ayres, & Smith, 2015; Bethune & Wood, 2013; Brock et al., 2014). Indeed, teachers in the present study reported that general ASD training, provided to all teaching staff, was often insufficient in meeting their specific needs or contributing further to their knowledge of ASD. Providing teachers with access to the myriad of available resources and training modules made freely available online (e.g., AFIRM modules), and coupling this with

effective coaching and monitoring of practice should, therefore, be prioritised in future attempts to improve training for this population.

Further, despite teachers highlighting the importance of connecting with professionals from the child's previous setting, this was often met with communication roadblocks. LoCasale-Crouch, Mashburn, Downer, and Pianta (2008), highlight that providing connections between the teachers of two settings (e.g. preschool and year one) for typically developing children can influence teachers' ratings of their social competence and behaviours. While this connection appears to be important during the transition to school, Quintero and McIntyre (2011) found that in 10% of their participants (preschool and kindergarten teachers) difficulties in collaboration between settings, was reported as a barrier in the transition process. As the transition to school for children with ASD might be more challenging due to their delayed development of critical 'school readiness skills', ensuring the connection between professionals supporting these children may, therefore, improve teacher awareness of the capabilities of students and contribute to a more effective transition process.

Limitations and future research

The present study has several limitations which should be taken into consideration when interpreting the results. We used purposive sampling to obtain information from a group of teachers who were working with children transitioning from a single early intervention service. While this has methodological strength in terms of reducing variability in the children's experience prior to school, it nevertheless may limit generalisability of findings. Furthermore, all but one of the teachers included in our study were all working across government-funded schools, in one Australian state, and were interviewed once only. However, teachers were asked to conduct member checks on their transcripts approximately one month after completing

interviews, to determine that transcripts accurately reflected their experiences. Of the 13 participants, only three amended their transcripts, which suggests that overall participants' experiences had not changed in that time. It is also important to note that a decision was made to analyse and present the data of a special education support teacher and HOSES alongside that of teachers, with participant roles indicated throughout the results. Although these participants differ in extent to which they interact with students within the classroom, their inclusion in this study assists in providing a more comprehensive understanding of the phenomenon.

Despite the nature of the sampling method, we were nevertheless able to capture the experiences of teachers with a diverse background in teaching, time in the role, and experience with children with ASD. It is possible, therefore, that the results reflect the experiences of other teachers in similar contexts, however, future research should extend to include both government and independent school systems. It is also important to point out that the characteristics of the 11 children with ASD being taught were not assessed by the authors. However, as mentioned, all children had transitioned from multiple locations of an EI service and were currently being taught in an inclusive mainstream classroom, or, for one child an inclusion attachment classroom.

The findings of the study highlight the importance of including the end users of empirically supported strategies in research to understand what drives decisions to select and implement these strategies. By doing so, researchers can better understand the impact of specific contexts such as a mainstream classroom, and the challenges this brings. The participants in this study highlighted several factors that contributed to their decisions to choose strategies, however, referring to the available research was rarely acknowledged as assisting in decision-making. An important avenue for future research should, therefore, focus on increasing teacher knowledge

and awareness of the available research in the field, and determining how this can assist their selection of strategies to use in the classroom. Increasing teacher engagement in the research literature might be achieved by the consideration of stakeholder perspectives when designing research projects.

Future research directions could also assess the effectiveness of establishing professional networks, which extend beyond a teacher's current educational context. As participants in this study suggested, the relationships they had formed with other teaching professionals were an important source of information and support. Providing this level of connection with professionals outside a teacher's current network, including establishing connections with a child's previous EI service provider, has the potential to open new avenues for bidirectional information sharing. As one participant, Erica, explained when discussing the benefits of collaborating with other professionals "... that team approach, because at the end of the day the focus is that child and supporting their needs in the classroom".

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Declaration of Interest

The authors declare no potential conflicts of interest with respect to the research, authorship, or publication of this article.

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