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ORIGINAL ARTICLE

Facilitators and Barriers to Inclusion of Students With Autism Spectrum Disorder: Parent, Teacher, and Principal Perspectives†

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Abstract

The inclusion of students with autism spectrum disorder (ASD) is increasing, but there have been no longitudinal studies of included students in Australia. Interview data reported in this study concern primary school children with ASD enrolled in mainstream classes in South Australia and New South Wales, Australia. In order to examine perceived facilitators and barriers to inclusion, parents, teachers, and principals were asked to comment on the facilitators and barriers to inclusion relevant to each child. Data are reported about 60 students, comprising a total of 305 parent interviews, 208 teacher interviews, and 227 principal interviews collected at 6-monthly intervals over 3.5 years. The most commonly mentioned facilitator was teacher practices. The most commonly mentioned barrier was intrinsic student factors. Other factors not directly controllable by school staff, such as resource limitations, were also commonly identified by principals and teachers. Parents were more likely to mention school- or teacher-related barriers. Many of the current findings were consistent with previous studies but some differences were noted, including limited reporting of sensory issues and bullying as barriers. There was little change in the pattern of facilitators and barriers identified by respondents over time. A number of implications for practice and directions for future research are discussed.

Keywords: autism spectrum disorder; inclusion; school; barriers; facilitators

Children with autism spectrum disorder (ASD) have a neurodevelopmental condition that results in difficulties with communication and socialisation and the presence of restrictive and repetitive behaviours (American Psychiatric Association, 2013). They may also have comorbid difficulties such as deficits in adaptive behaviour, difficulties with emotion regulation, challenging behaviours, and problems with motor skills (Jang & Matson, 2015). The prevalence of ASD in Australia, according to parent-reported diagnosis for children born 2003–2004, is 3.9% (May, Sciberras, Brignell, & Williams, 2017).

Children with ASD, particularly those without intellectual disability, are increasingly enrolled in inclusive mainstream classrooms in Australia (Keane, Aldridge, Costley, & Clark, 2012) but, as in other countries, their presence can present challenges to teachers and schools (Able, Sreckovic, Schultz, Garwood, & Sherman, 2015; Hay & Winn, 2005; Roberts, 2015; Soto-Chodiman, Pooley, Cohen, & Taylor, 2012). Problems in understanding social and communication norms and with emotion

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regulation can cause difficulties with both peers and teachers. Many teachers consider themselves unprepared to teach and to make appropriate adjustments for students with ASD (Hay & Winn, 2005; Roberts, 2015; Soto-Chodiman et al., 2012).

In a review of stakeholder perspectives on the inclusion of students with ASD in mainstream classes, Roberts and Simpson (2016) found general support among parents and teachers for inclusion. Knowledge and understanding of ASD, along with the use of effective strategies and good communication between home and school, were perceived by parents and teachers as key elements of successful inclusion. They also identified many potential barriers to successful inclusion, including lack of knowledge about ASD and appropriate teaching strategies, lack of professional learning, student factors such as sensory sensitivities, challenging behaviour, and poor social skills, and lack of funding for teacher aides, special educators, resources, and equipment. The findings from the Roberts and Simpson review were drawn from studies in several countries and showed there is limited research on teacher and parent perspectives on facilitators of and barriers to inclusion of students with ASD in Australian schools. Roberts and Simpson included only two Australian studies out of 23 reviewed (Hay & Winn, 2005; Soto-Chodiman et al., 2012) that investigated parent and/or teacher perspectives.

Australian researchers, mostly using qualitative methods such as interviews and focus groups (Hay & Winn, 2005; Reupert, Deppeler, & Sharma 2015, Soto-Chodiman et al., 2012) and surveys (Saggers et al., 2015), have reported a range of similar issues relevant to inclusion for students with ASD in mainstream classes in primary and secondary schools. In each of these studies, data were collected at a single point in time, and no studies to date have taken a longitudinal approach. Issues identified included the nature of ASD, particularly behaviour and social interaction, collaboration and relationships (between general and special educators), teacher burnout and lack of services, hard work of special educators, and the quality of the school facilities (Hay & Winn, 2005). More specifically, the teachers in Soto-Chodiman et al. (2012) reported challenges for teachers including the time demands required to make curriculum and teaching adaptations, difficulties with the social and communication skills of students with ASD and problem behaviour and inappropriate interactions. The parents and educators in Saggers et al. (2015) identified similar challenges presented by students with ASD, including social/emotional, behavioural, communication, sensory, and academic/learning needs, with Hay and Winn (2005) reporting that problem behaviour by students with ASD was the most frequently mentioned teacher issue and noting sensory needs. In addition, participants in Hay and Winn's (2005) study reported problems with home–school communication and teachers lacking in skills. As children move through school, demands and expectations change. In the absence of longitudinal data, possible corresponding changes in stakeholder perspectives, including barriers and facilitators, cannot be determined.

Studies report on perceptions related to desirable supports such as the presence of an appropriately trained teacher aide, support from and collaboration with the child's family, and specialist support (Reupert et al., 2015; Saggers et al., 2015; Soto-Chodiman et al., 2012). In addition to specific supports, more generic supports, such as school acceptance, good transitions, provision of safe and supervised places, routines, structured activities at lunch and recess, flexibility, provision of socially attractive activities, and collaboration between schools, have been noted as enablers of inclusion (Reupert et al., 2015). In a parallel finding, Saggers et al. (2015) reported that lack of funding, followed by lack of time, lack of suitable education and training for teachers, and lack of specialist support were barriers for students with ASD.

Carter, Stephenson, Clark, Costley, Martin, et al. (2014) reported on a subset of the data analysed in the current paper involving the first of seven rounds of data collection comparing students who spent time in satellite classes before mainstream enrolment in New South Wales (NSW) and students who were directly enrolled in mainstream classes in South Australia (SA). These data included parent, teacher, and principal perceptions of facilitators and barriers of inclusion for students with ASD included in mainstream classes. School community or teacher understanding of the child's needs was identified by over half the parents as a facilitator. The most common barrier identified by parents was characteristics of the child such as poor social skills or anxiety. Half the teachers interviewed and

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two-thirds of the principals saw teacher practices as a facilitator, and for both teachers and principals, child characteristics were the most commonly mentioned barrier. Nearly half the principals mentioned good parent support and collaboration with the school as facilitators.

The Australian research broadly reflects the general conclusions from the Roberts and Simpson (2016) review with regard to educational facilitators and barriers, but apart from the Saggers et al. (2015) survey, was limited to studies drawing participants from a small number of schools. In addition, all existing research has been cross-sectional. The study reported by Carter, Stephenson, Clark, Costley, Martin, et al. (2014) drew on a much larger sample from many schools in SA and NSW. The results reported here extend our earlier report by drawing on multiple rounds of data collection, thus including data from more participants over a longer time span and by examining changes over time. The aim of the study was to ascertain parent, teacher, and principal perspectives on facilitators of and barriers to inclusion of children with ASD in mainstream primary school classrooms and to explore any changes in perceptions over time.

Method

The data reported in this paper are drawn from a study designed to compare two models for the education of children with ASD in the early years of school (Carter, Stephenson, Clark, Costley, Martin, et al., 2014; Carter, Stephenson, Clark, Costley, Williams, et al., 2014; Carter et al., 2015). For this project, inclusion refers to the full-time enrolment of a student in a mainstream classroom. In one model, the Autism Spectrum Australia (Aspect) satellite class model implemented in NSW, the children were enrolled in a specialist, segregated autism class within a regular school and then transitioned to a mainstream class. In the other model, implemented in SA, children were enrolled directly into a mainstream class with no period of enrolment in a specialist class, and consultative support was provided by Autism SA as needed. As part of each of the seven rounds of 6-monthly data collection between 2012 and 2015, parents, teachers, and principals were asked three questions during structured interviews about their perceptions of the child's inclusive placement in a mainstream classroom and more particularly about their perception of facilitators and barriers to inclusion. Other data collected, which are reported elsewhere (Carter et al., 2019), included IQ assessments, responses to the Social Skills Improvement System Rating Scales (Gresham & Elliott, 2008), School Function Assessment Cognitive Behavioral Tasks Activity Performance Scales (Coster, Deeney, Haltiwanger, & Haley, 1998), ratings of satisfaction with support provided, and success of placement. The present paper reports on the analysis of those interviews relating to students in mainstream classes and to the questions relating to the facilitators and barriers to inclusion.

Recruitment

After the research was approved by the human research ethics committees of Macquarie University (approval 5201100729), The University of Melbourne (approval 1137015), Aspect (approval 1126), Autism SA (approval PP201107), NSW Department of Education and Training (approval 201143), South Australian Department for Education and Child Development (approval CS/11/102-4.2), Catholic Schools Office Diocese of Broken Bay, Catholic Schools Office Diocese of Maitland-Newcastle, Catholic Education Diocese of Parramatta, Catholic Education Office Sydney (approval 784), and Catholic Education South Australia, Aspect in NSW and Autism SA in SA distributed letters to 303 families of children registered with them for consent to participate over two rounds of recruitment. The eligibility criteria for participation was that the child (a) was in a class from kindergarten to Year 3; (b) had a formal diagnosis of autistic disorder or Asperger's disorder using *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., *DSM-IV*; American Psychiatric Association, 1994) criteria, made by a paediatrician or psychologist and confirmed by the participating autism organisations; and (c) had intellectual functioning within the mild range of intellectual disability or above, based on a formal diagnostic assessment. Ninety families initially consented to participate, but 21 families were

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lost during the timespan of the project. Once families gave consent for information to be collected about their child, the child's teacher and the principal of the school where the child was enrolled were approached to give their consent to participate. Where the child's teacher changed during the course of the study, the new teachers were also approached for consent.

Participants

Children about whom information was collected

At the time of the first round of data collection, there were two students in NSW enrolled in mainstream classes, and over the course of the study an additional 11 students transferred to mainstream classes. Two of these subsequently transferred back to a satellite class and one moved to a special class. In SA, all students (48 were enrolled at the beginning of the study) were in mainstream classes. The mean age of students from NSW at the commencement of the study was 6 years 9 months (range: 4 year 3 months to 8 years 9 months) and the mean age of students from SA was 6 years 10 months (range: 4 years 3 months to 8 years 8 months).

Schools

In NSW, 12 schools participated, with two students attending the same school for the last four rounds of data collection. All NSW schools were in urban areas, mostly the Sydney metropolitan region. In SA, 50 schools participated, with four schools having two students. The majority of schools were in the Adelaide metropolitan area, with four schools in country towns.

The Index of Community Socio-Educational Advantage (ICSEA) is an index of educational advantage with a mean of 1,000 and a standard deviation of 100 calculated from a number of factors including parent occupation and education, the percentage of Indigenous enrolments, an accessibility/remoteness index, and the percentage of disadvantaged students with a language background other than English (Australian Curriculum, Assessment and Reporting Authority [ACARA], 2011). It is provided by ACARA to enable comparisons between schools adjusted for educational advantage. For the NSW schools, the mean ICSEA for each school as provided by ACARA was 1,043 with a range of 908 to 1,093, and the mean ICSEA for the SA schools was 1,018 with a range of 906 to 1,161.

Interviewees

There are data from interviews available for a total of 60 students. Varying datasets, depending on parent, teacher, and principal participation, were available for each round of data collection, as shown in Table 1. For 41 students, there was at least one interview with each of a parent, teacher, and principal; for 11 students, there were only parent interviews; for one student, there were only principal interviews; for two students, there were only parent and teacher interviews; and for five students, only principal and parent. One principal in SA was interviewed about two students in all rounds of data collection, one principal in SA was interviewed about two students in the first round, and one NSW principal was interviewed about two students in the last four rounds of data collection.

Procedure

Interviews were carried out by trained research assistants, either over the phone (most parents and principals) or in person (most teachers). This study addresses a subset of the questions relating to perceptions of the child's placement in a mainstream class. Research assistant training sessions covered general procedures for contacting and working with schools and participants, using the instruments and asking interview questions, and role-played interviews. There were three open-ended questions that asked the participant to comment on (a) the child's placement, (b) the perceived barriers to inclusion, and (c) the perceived facilitators of inclusion. Questions were all of the general format "Do you perceive any barriers to the inclusion of your child? If so, what are those barriers?" (example from

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Table 1. Number of Interviews for Each Round for Parents, Teachers, and Principals

	Parents (305 interviews)		Teachers (208 interviews)		Principals (227 interviews)	
Round	NSW	SA	NSW	SA	NSW	SA
R1 2012	2	37	1	23	1	24
R1 2013	3	44	1	26	1	34
R2 2013	4	40	3	30	3	25
R1 2014	7	37	6	26	6	33
R2 2014	7	36	6	26	5	27
R1 2015	10	35	9	22	5	29
R2 2015	9	34	6	23	7	27
State totals	42	263	32	176	28	199

Note. NSW = New South Wales; SA = South Australia.

parent interview). Additional probe questions were not used to elicit barriers or facilitators not mentioned, or the reasons why barriers or facilitators were nominated. As detailed responses were not elicited, the research assistants recorded the interviewee responses verbatim, and if they had to paraphrase because a response was unclear or not fully understood, they read the response back to the participant to ensure it was accurate. If the answer was unclear or not specific, interviewers used their discretion to ask clarifying questions. Interviews were not audio-recorded, and recorded responses were not reviewed by interviewees outside the interview.

Data Categorisation

The content of the responses was categorised into factors relating to facilitators and barriers using a system based on analysis of the first round of data as reported in Carter, Stephenson, Clark, Costley, Martin, et al. (2014). The initial categorisation system was further developed by the first author by reading through all the responses and noting additional common factors related to facilitators and barriers of inclusion that emerged in later rounds of data collection. Each response was thus categorised as relating to one or more of the factors identified. Interviewee comments in response to the general question about the child's placement were only categorised if the interviewee clearly stated that the issue being commented on was a facilitator or barrier of inclusion. Once the content of all interviews had been categorised into factors, the factors were reviewed to provide as much commonality across interviewees as possible by amending category definitions and collapsing some categories. The revised categorisation was discussed and reviewed with the third author, and it was agreed the categorisation reflected the range of content in the comments and common factors across participants. Some factors remained specific to the group being interviewed (e.g., only principals made comments about the paperwork involved in getting support), but most factors were relevant to the responses of all interviewees. All factors could be applied as facilitators or barriers; for example, the factor related to management of problem behaviour was a barrier if behaviour management was poor and a facilitator if behaviour was well managed (see Table 2 for definitions and examples). All mentions of all factors across interviewees and time were included.

Reliability of the categorisation was established by training the second author on a selection of interviews. She was provided with interview transcriptions, a list of the factors, and examples of the responses that were included in those factors. She then independently categorised four groups of interviews, each group relating to three or four children, and reviewed her categorisation with the first author. The first and second authors then independently categorised 20% of the parent, teacher,

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Table 2. Most Commonly Mentioned Factors

Factor	Barrier examples	Facilitator examples
Student		
Student factors – student-specific characteristics	Anxiety, poor social skills, difficulties with change, difficulties in groups, temper tantrums, lack of empathy, poor academic skills	Academically capable, wants to please, good relationship with staff
Sensory issues	Difficulties due to sensory problems	Strategies in place to manage problems related to sensory issues
Teacher		
Teacher practice – things that the teacher does	Unclear structures and routines, no experience, poor or unsuitable practices	Appropriate practices, uses visuals, makes suitable adjustments to curriculum or tasks, has routines and structure, uses rewards, uses explicit teaching, experienced with students with autism spectrum disorder (ASD)
Teacher attitude/relationship – attitudes and attributes	Lacks understanding of ASD, unsupportive, unrealistic expectations	Kind, caring, supportive, understands ASD
Teacher time/demands	Takes too much teacher time and/or excessive demands or pressure	Teacher has adequate time
Within-class grouping	No use of small groups	Teacher uses small groups, pairs
School		
School community – the whole school community including staff and students	Does not understand needs, inappropriate strategies and curriculum, lacks understanding of ASD	Understands needs, is inclusive, supportive, clear structures and routines at school level
Aides – support provided by paraprofessionals	Lack of aide support	Good support, additional helpful programs or activities provided by aide
Support staff/programs – support provided by special educators and other professionals in school, special education programs	Lack of support from specialists and special education programs	Additional helpful support from specialists and special education programs
Behaviour management	Poor or inappropriate practices, poor management of anxiety and other emotions, not proactive	Teacher/aides/school staff handle problems well
Friends	Lack of friends, “looking after” rather than friend	Support from friends, has good friends
Peers	Peers are afraid, not supportive, tease	Supportive, understanding, accepting peers

(*Continued*)

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Table 2. (*Continued*)

Factor	Barrier examples	Facilitator examples
Consistency	No consistency of staffing or peer group	Consistency of staffing or peer group
Professional learning	Suitable professional learning or information is not available	Suitable professional learning or information is available
Individual planning (IEPs)	No individual planning	Individual planning, planning specific to child
Social interaction/friendship program	No programs available to support social interaction or friendship	Programs available to support social interaction or friendship (buddy programs, playground programs)
Transition	Poor transition planning or implementation	Well-managed transition, information passed
Class/school size	Class or school too small or too large	Class or school appropriate size (mostly small)
Funding/resources	Insufficient, poorly allocated, unpredictable funding or lack of material/unspecified resources	Adequate funding and material/unspecified resources
Parent/school interaction		
Parent/school communication and support	Poor home/school communication, family not supported by school and vice versa	Good home/school communication, family well supported by school and vice versa
School response to input from parents and others	School ignores information or advice provided by parents or others	School listens to advice provided by parents and others
Support/activities out of school	NA	Student benefits from therapy, support, treatment, or activities outside school
Autism association		
Support from autism association	No or unsatisfactory support from autism association	Helpful support from autism association, either limited time or ongoing

and principal responses in each round of data collection, excluding those interviews used in the training of the second author. An agreement was scored if both agreed that a factor was present as a facilitator, as a barrier, or was not mentioned as a facilitator or barrier. Reliability was calculated by dividing agreements by agreements plus disagreements. Mean inter-categoriser reliability for the categorisation of parent responses was 89.1% (range: 81.4–97.7%); for teacher responses, it was 93.7% (range: 89.0–98.9%); and for principal responses, it was 91.7% (range: 83.7–96.7%).

The data were then rank ordered in two ways. First, the total number of mentions of each facilitator and barrier by the different interviewees across all rounds were ranked. Second, the mentions of each facilitator and barrier for each student in total and across interviewees were ranked. In addition, the most frequently mentioned facilitators and barriers were examined across time to identify any possible trends.

Results

There were seven parent interviews, five teacher interviews, and six principal interviews where no facilitators and barriers were mentioned, leaving 298 parent interviews, 203 teacher interviews, and 221 principal interviews that were categorised. In general, the responses were short, comprising only a few sentences, and often no reasons for the nominations or additional information was provided. Overall, 82 factors were identified from mentions as either facilitators or barriers. There were 64 factors identified in parent interviews, 45 in teacher interviews, and 61 in principal interviews. For all interviewees, more facilitators than barriers were mentioned. Overall, there were 81 factors identified as facilitators and 54 as barriers.

Table 2 shows the most commonly mentioned factors and examples of facilitators and barriers. There were many other factors that were mentioned in only a few interviews or in relation to only one student.

Total Mentions of Factors in Interviews

To gain some overall perspective on these data, initially, the number of mentions of each factor in an interview was totalled over all rounds of data collection. Factors identified in more than 10% of total interviews by any participant are presented in Table 3. Factors mentioned in more than 20% of interviews with any participant group are indicated by dark shading and those mentioned in 10% to 19% of interviews by light shading. Overall, teacher practice was the most mentioned facilitator being mentioned in 35.6% of all interviews. The teacher attitude/relationship facilitator was most mentioned by parents, teacher practices was most mentioned by teachers, and parent/school communication and support was most mentioned by principals. There was considerable overlap in the facilitators mentioned by 10% or more of each group, with supportive community, teacher practices, aides, support staff/programs, student factors, behaviour management, and parent/school communication and support mentioned by all. At the same time, the percentage of each group mentioning a factor varied for the first four factors and for peer support. Friends was only mentioned by 10% or more of parents, consistency only by teachers, and support from autism associations, professional learning, transition, and individual programming were only mentioned by principals.

Mentions of Factors in Relation to Students

In addition to examining the overall number of interviews in which particular facilitators and barriers were identified, data were also examined at the student level. There were 59 students for whom there was at least one parent interview, 43 for whom there was at least one teacher interview, and 47 for whom there was at least one principal interview. These data were analysed by tallying the number of students for whom at least one interviewee identified a particular factor. When the factors mentioned for each student are considered, there were 25 facilitators and 17 barriers that were mentioned by at

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Table 3. Facilitators Mentioned in at Least 10% of Interviews for Each Group of Participants

Factor	Overall (722)	Parents (298)	Teachers (203)	Principals (221)
Teacher practice	257 (35.6%)	81 (27.2%)	91 (44.8%)	85 (38.5%)
Parent/school communication and support	199 (27.6%)	36 (12.1%)	65 (32%)	98 (44.3%)
School community	178 (24.7%)	82 (27.5%)	31 (15.3%)	65 (29.4%)
Teacher attitude/relationship	152 (21.1%)	98 (32.9%)	18 (8.9%)	46 (20.8%)
Aides	132 (18.3%)	48 (16.1%)	46 (22.7%)	38 (17.2%)
Student factors	126 (17.5%)	40 (13.4%)	33 (16.3%)	53 (24.0%)
Behaviour management	106 (14.7%)	36 (12.1%)	39 (19.2%)	31 (14.0%)
Peers	102 (14.1%)	30 (10.1%)	50 (24.6%)	22 (10%)
Support staff/programs	100 (13.9%)	43 (14.4%)	23 (11.3%)	34 (15.4%)
Social interaction/friendship program	80 (11.1%)	39 (13.1%)	18 (8.9%)	23 (10.4%)
Friends	61 (8.5%)	34 (11.4%)	16 (7.9%)	11 (5.0%)
Support from autism association	61 (8.5%)	12 (4.0%)	14 (6.9%)	35 (15.8%)
Consistency	52 (7.2%)	13 (4.4%)	26 (12.8%)	13 (5.9%)
Professional learning	42 (5.8%)	4 (1.3%)	8 (3.9%)	30 (13.6%)

Note. Light shading indicates mentions in at least 10–19% of interviews; dark shading indicates mentions in at least 20% of interviews.

least one interviewee for 10 or more students. A wide range of other facilitators and barriers were mentioned less frequently, with 56 factors never mentioned for any student as facilitators and 37 factors never mentioned for any student as barriers.

Table 4 shows data at the student level regarding overall mentions, then parent, teacher, and principal mentions for facilitators. For example, in the first line of the table, teacher practices were mentioned by at least one participant for 52 of 60 (86.7%) students, by parents for 40 of 59 (67.8%) students, by teachers for 38 of 41 (92.7%) students, and by principals for 38 of 45 (84.4%) students. Shaded rows show where there were discrepant perceptions between interviewee groups, with a difference of 10% or more. Teacher practices were the most frequently mentioned facilitator overall, but more parents identified a good teacher attitude/relationship as a facilitator than good teacher practices.

A similar analysis was undertaken for mentions of barriers. Barriers identified in more than 10% of the interviews with any participant group are presented in Table 5. Factors mentioned in more than 20% of interviews are indicated by dark shading and those mentioned in 10–19% of interviews by light shading. Student factors was the barrier top ranked for all interviewees and was the only barrier mentioned in more than 10% of the teacher interviews. There are discrepancies between parent and school personnel perception of school community barriers and of teacher attitudes/relationships (indicated by shaded cells).

Table 6 shows the barriers that were identified by at least one interviewee for 10 or more students. Again, student factors were by far the most frequently mentioned barrier overall and for each group of interviewees. The second most commonly mentioned barrier for parents was lack of school community support; for principals, it was poor parent/school communication and support; and for teachers, it was lack of aide support. Shaded rows show where there were discrepant perceptions between interviewee groups, with a difference of 10% or more. Of note was the number of barriers perceived by parents that were much less frequently mentioned by teachers and principals and that there was little concern among teachers about funding/resources and sensory issues.

In addition to the factors listed in the table, bullying was mentioned for 11.9% of students in parent interviews, poor attendance was noted for 7.3% of students and family problems out of school for 4.9%

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Table 4. Facilitator Mentions per Student Overall, and by Parents, Principals, and Teachers

Factor	Overall 60 students	Parents 59 students	Teachers 41 students	Principals 45 students
Teacher practices	52 (86.7%)	40 (67.8%)	38 (92.7%)	38 (84.4%)
Teacher attitude/relationship	51 (85.0%)	47 (79.7%)	12 (29.3%)	29 (64.4)
Parent/school communication and support	49 (81.7%)	22 (37.3%)	28 (68.3%)	41 (91.1%)
School community	47 (78.3%)	39 (66.1%)	20 (48.8%)	34 (75.6%)
Support staff/programs	45 (75.0%)	26 (44.1%)	15 (36.6%)	29 (64.4%)
Aides	43 (71.7%)	27 (45.8%)	26 (63.4%)	22 (48.9%)
Student factors	43 (71.7%)	25 (42.4%)	20 (48.8%)	33 (73.3%)
Peers	39 (65.0%)	18 (30.5%)	28 (68.3%)	16 (35.6%)
Behaviour management	38 (63.3%)	24 (40.7%)	22 (53.7%)	18 (40.0%)
Social interaction/friendship program	37 (61.7%)	30 (50.8%)	11 (26.8%)	19 (42.2%)
Support from autism association	36 (60.0%)	9 (15.3%)	10 (24.4%)	27 (60.0%)
Individual planning (IEPs)	32 (53.3%)	8 (13.6%)	9 (22.0%)	23 (51.1%)
Friends	31 (51.7%)	19 (32.2%)	16 (39.0%)	14 (31.1%)
Transition	30 (50%)	7 (11.9%)	13 (29.3%)	18 (40.0%)
Consistency	26 (43.3%)	10 (17.0%)	16 (39.0%)	11 (24.4%)
Professional learning	26 (43.3%)	4 (6.8%)	10 (24.4%)	19 (42.2%)
Support/activities out of school	17 (28.3%)	14 (23.7%)	6 (14.6%)	2 (4.4%)
Extra in-school activities	17 (28.3%)	13 (22.0%)	2 (4.9%)	2 (4.4%)
Sensory issues	16 (26.7%)	8 (13.6%)	5 (12.2%)	6 (13.3%)
Support from other education bodies	14 (23.3%)	0	0	14 (31.1%)
Monitor and review progress	13 (21.7%)	0	0	13 (28.9%)
School response to input from parents and others	12 (20.0%)	12 (20.3%)	NA	NA
Class/school size	12 (20.0%)	6 (10.2%)	7 (17.1%)	6 (13.3%)
Principal/executive support	12 (20.0%)	11 (18.6%)	3 (7.3%)	NA
Within-class groups	11 (18.3%)	2 (3.4%)	8 (19.5%)	3 (6.7%)
Leadership/responsibility	10 (16.7%)	6 (10.2%)	4 (9.8%)	1 (2.2%)

Note. Grey shading shows rows where there were discrepant perceptions between interviewee groups, with a difference of 10% or more.

of students in teacher interviews and also for 15.6% of students and 13.3% of students respectively in principal interviews. Inadequate professional learning was mentioned for only 15.0% of students, and only two teachers saw this as a barrier.

Discrepancies in Mentions by Respondents

There were a number of discrepancies in the facilitators and barriers mentioned overall in interviews and also in relation to individual students. For the interviews overall, parents more often reported lack of acceptance by the school community as a barrier than did teachers or principals. For mentions of

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Table 5. Barriers Mentioned in at Least 10% of Interviews for Each Group of Participants

Factor	Total (722)	Parents (298)	Teachers (203)	Principals (221)
Student factors	263 (36.4%)	117 (39.3%)	65 (32%)	81 (36.7%)
School community	42 (5.8%)	36 (12.1%)	3 (1.5%)	3 (1.4%)
Funding/resources	40 (5.5%)	15 (5.0%)	3 (1.5%)	22 (10%)
Parent/school communication and support	39 (5.4%)	15 (5.0%)	1 (0.49%)	23 (10.4%)
Teacher attitude/relationship	36 (4.9%)	32 (10.7%)	0	4 (1.8%)

Note. Light shading indicates mentions in at least 10% of interviews; dark shading indicates mentions in at least 20% of interviews.

Table 6. Barrier Mentions per Student Overall, and by Parents, Principals, and Teachers

Factor	Overall 60 students	Parents 59 students	Teachers 41 students	Principals 45 students
Student factors	54 (90.0%)	46 (78.0%)	35 (85.4%)	38 (85.4%)
School community	26 (43.3%)	22 (37.3%)	5 (12.2%)	3 (6.7%)
Aides	26 (43.3%)	16 (27.1%)	8 (19.5%)	10 (22.2%)
Funding/resources	25 (41.7%)	12 (20.3%)	2 (4.9%)	15 (33.3%)
Parent/school communication and support	24 (40.0%)	11 (18.6%)	1 (2.4%)	16 (35.6%)
Behaviour management	22 (36.7%)	19 (32.2%)	1 (2.4%)	5 (11.1%)
Teacher attitude/relationship	21 (35.0%)	20 (33.9%)	0	4 (8.9%)
Teacher practice	21 (35.0%)	17 (28.8%)	1 (2.4%)	8 (17.8%)
Social interaction/friendship program	19 (31.7%)	16 (27.1%)	0	3 (6.7%)
Peers	15 (25.0%)	13 (22.0%)	0	5 (11.1%)
Support from autism association	15 (25.0%)	8 (13.6%)	4 (9.8%)	5 (11.1%)
Sensory issues	14 (23.3%)	9 (15.3%)	0	7 (15.6%)
Class/school size	13 (21.7%)	6 (10.2%)	4 (9.8%)	7 (15.6%)
Teacher time/demands	12 (20.0%)	5 (8.5%)	5 (12.2%)	8 (17.8%)
Principal/executive support	11 (18.3%)	11 (18.6%)	0	NA
School response to input from parents and others	11 (18.3%)	11 (18.6%)	NA	NA
Friends	10 (16.7%)	6 (10.2%)	2 (4.9%)	3 (6.7%)

Note. Shaded rows show where there were discrepant perceptions between interviewee groups, with a difference of 10% or more.

facilitators, more teachers and principals saw teacher practice as a facilitator than parents, and principals were more likely than parents and teachers to view good home/school communication/support as a facilitator. Parents and principals made more mention than teachers of a supportive school community, teacher attitude, and support staff/programs and were less likely to see support from peers as a facilitator.

Similarly, when the student data are considered (see Tables 4 and 6), parents made more mention of lack of acceptance by the school community, but they also made more mention of other factors (poor

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behaviour management, poor teacher attitudes and practices, lack of programs to support social interaction and friendship, lack of support from peers, lack of principal/executive support) than did teachers and principals. Many parents also commented that principals/executive did not listen to input from parents and others. Parents and principals were both more likely than teachers to note lack of funding/resources and sensory issues as barriers.

There were many more discrepancies in the reports around facilitators for individual students. Principals differed from parents and teachers in that they made more mentions of support staff/programs, student factors, support from autism associations, individual planning, effective transitions, professional learning, support from other educational bodies, and monitoring and reviewing programs. Teachers made more mentions than parents and principals of aide support, good behaviour management, support from peers, and consistency of staff or peer groups and less mention of an accepting school community. Parents made fewer mentions of good teacher practices and school/parent communication/support and more mentions of teacher attitude, programs for social interaction and friendship, support from out-of-school programs and activities, and extra in-school activities.

Changes Over Time

These data also allow for consideration of the changes in perceptions of facilitators and barriers over time. The eight most frequently mentioned facilitators (those mentioned by 20% or more of each participant group as per Table 3) and five most frequently mentioned barriers (those mentioned by at least 10% of one participant group as per Table 5) at the student level were examined to identify factors where there was a difference of more than 20% between any two rounds of data collection for each interviewee group. For each facilitator or barrier where there was such a difference, data were examined to ascertain whether or not there was a consistent trend over time.

Overall, there were few clear trends. There were variations in parent perception of teacher practice and school community as facilitators, with fewer mentions of school community over time. Teacher perceptions of teacher practice, parent/school communication and support, school community, and aides varied but there were no clear trends. Principal perceptions of teacher practice, teacher attitude/relationship and school community also varied but only teacher attitude/relationship showed a clear trend, decreasing over time. For barriers, the only variation was in principal perceptions of student factors with no apparent trend in these data.

Discussion

In this paper, data from parent, teacher, and principal interviews were presented. In addition, discrepancies between the reports of different groups of interviewees were identified and trends over time were explored.

The facilitators commonly mentioned often referred to good practices by schools and teachers. Teacher practices were the most frequently mentioned facilitators overall and specific practices mentioned included the use of visual supports, routines and structures, reward systems, explicit teaching, and adjustments to curriculum or tasks. This finding accords with both the Roberts and Simpson (2016) and Falkmer, Anderson, Joosten, and Falkmer (2015) reviews and also with other studies such as Brewin, Renwick, and Schormans (2008) and Sharma, Forlin, and Furlonger (2015), who also reported that parents identified a range of helpful teacher practices, such as the use of routines. Many of the practices mentioned were generic and few respondents specifically mentioned teaching practices that have a strong research base such as the use of techniques drawn from applied behaviour analysis (Wong et al., 2015), although some of these were mentioned in relation to behaviour management. This could be interpreted as consistent with the view expressed by Roberts (2015) and Keane et al. (2012) that there is limited awareness of specialised teaching techniques seen as essential for students with ASD.

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Several other factors were mentioned in at least 20% of interviews overall and most were also identified as barriers when there were deficiencies in the area. These included parent/school communication and support, a supportive school community, and good teacher attitude/relationship. In relation to individual students, facilitators other than those already identified, mentioned for over half the students, were support staff/programs, good behaviour management, social interaction/friendship programs, individual planning, and well-planned transitions. As before, most of these factors had been identified as barriers when there were problems, but for some facilitators, such as support staff/programs, support from friends, individual planning, and effective transitions, their lack or difficulties with them were not often mentioned as barriers.

Many of the factors identified in the current study have also been reported in other studies. Good communication between home and school has been identified as a supportive factor in several studies (Falkmer et al., 2015; Reupert et al., 2015; Roberts, 2015; Sharma et al., 2015; Soto-Chodiman et al., 2012; Starr & Foy, 2012; Tucker & Schwartz, 2013; Whitaker, 2007). In the current study, it has been flagged under both facilitators and barriers, although principals seem to be more concerned about it than parents and teachers. Knowledge and understanding of ASD within the school community has also been noted (Roberts, 2015; Starr & Foy, 2012; Whitaker, 2007), and in the current study it seems to be parents and principals, and to a lesser extent teachers, who frequently mentioned it. Teacher attitudes and relationships, a concern for parents in the current study, was also noted in some of the studies reviewed by Falkmer et al. (2015).

In relation to additional supports that may facilitate inclusion, teacher aide support was mentioned more often as a facilitator by teachers than parents or principals in the current study. It was also viewed by teachers in the Soto-Chodiman et al. (2012) study as essential, and as an important facilitator by teachers in the Emam and Farrell (2009) study. It should be noted that recent research has cast doubt on the efficacy of the generic use of teacher aides as effective supports (Farrell, Alborz, Howes, & Pearson, 2010). Supports from specialist personnel or programs were reported as facilitators but their absence was not seen as a barrier. These kinds of supports were also reported as beneficial by teachers in the Soto-Chodiman et al. (2012) study, and a multi-disciplinary approach to planning was recommended by Roberts (2015). These findings may be related to the apparent lack of knowledge of effective teaching strategies for students with ASD, as noted above. When specialist supports are available, they are appreciated but lack of awareness may mean schools do not necessarily seek resources when they are unaware of their potential value.

Good behaviour management was commonly mentioned as a facilitator, and both Roberts (2015) and Sharma et al. (2015) have noted the importance of a positive and appropriate approach to behaviour management. Programs directed at supporting social skills and friendship were seen as facilitators, with parents mentioning them more than teachers or principals, and very few seeing their absence as a barrier. Brewin et al. (2008) reported that parents of students with Asperger syndrome saw the quality of social interaction experienced by their children as an important indicator of quality of life. Programs of this nature were reported as essential for students with ASD by Roberts (2015), and the provision of social activities was seen as an enabler by Sharma et al. (2015).

There were many discrepancies in perceptions between the parents, teachers, and principals. Some of these are likely due to the differing roles of the participants; for example, only principals reported that support from other education bodies was a facilitator and parents and teachers may have been unaware of the source of some supports provided. Similarly, parents more frequently mentioned support/activities outside school that may have been unknown to teachers and principals. For many of these discrepancies, parents were much more likely to comment (see, e.g., school community and teacher attitude/relationships as barriers) than principals or teachers. It is somewhat concerning that teachers and principals do not share parent concerns about some potential barriers such as the lack of programs to support social interaction and friendship and poor behaviour management.

In terms of facilitators, including some regarded as essential for students with ASD (Roberts, 2015; Sharma et al., 2015), it is of concern that some strongly recommended practices are not widely mentioned as facilitators. It was mostly principals who reported benefits from individual planning,

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monitoring and reviewing progress, and well-managed transitions. It may be that these practices are widely used and were thus not seen as worthy of comment. In addition to the facilitators and barriers discussed earlier, there were many idiosyncratic factors that were mentioned in relation to only a few students (such as open plan classrooms as a barrier and a coeducational setting as a facilitator), again suggesting that individualised approaches may be required to meet the needs of students with ASD.

The major barrier perceived overall and by each group of interviewees was student-specific characteristics. In one way this is not surprising, as the core characteristics of ASD, including difficulties with social interaction and communication, do present challenges to schools, and teachers report being poorly equipped to provide appropriate adjustments (Roberts, 2015). Barriers, difficulties, or concerns related to student characteristics as perceived by parents and teachers have been reported in Australia as well as in other countries (Carter, Stephenson, Clark, Costley, Martin, et al., 2014; Azad & Mandell, 2016; Eldar, Talmor, & Wolf-Zukerman, 2010; Emam & Farrell, 2009; Hay & Winn, 2005; Humphrey & Symes, 2013; Soto-Chodiman et al., 2012). Student characteristics were reported as barriers in six of the 28 articles included in the Falkmer et al. (2015) review of parent perspectives on inclusive schools for students with ASD. Nevertheless, it is also somewhat concerning that the barriers to inclusion as perceived by interviewees are located in the student, rather than in the difficulties teachers and school communities experience in providing appropriate adjustments for students with ASD. It also contrasts with the perception that successful inclusion can often be attributed to teacher and school practices. Both teachers and principals mentioned student factors as a barrier for over 80% of students. Factors intrinsic to the child would presumably be less controllable by school staff than instruction and school adjustments.

The next most common barrier mentioned by teachers was a lack of aide support for nearly 20% of students, another factor outside their control. Teachers also perceived lack of understanding by the school community and demands on their own time as barriers. Principals reported many more barriers as affecting more than 20% of students, but these barriers were also external factors of lack of aide support and lack of funding/resources. In addition, principals nominated poor parent/school communication and support for just over a third of students, locating this barrier in the family. Principals did, however, note that poor teacher practices and teacher time/demands were each a barrier for 17.8% of students.

Parents, on the other hand, although also identifying barriers within the student, were much more likely to mention school- or teacher-related barriers. Some of these included barriers identified by teachers or principals such as lack of understanding by the school community, poor teacher practice, and poor parent/school communication and support. In addition, parents identified several barriers that were rarely mentioned by teachers and principals such as poor teacher attitude/relationship, poor behaviour management, lack of programs to support social interaction and friendship, lack of support from peers, and lack of school response to input from parents and others. Although Lindsay, Proulx, Thomson, and Scott (2013) noted concern expressed by Canadian teachers about some of these issues including behaviour management, lack of awareness and understanding in the school community, and peer understanding and acceptance, these concerns appear not to be shared to the same extent by Australian teachers and principals.

It was of interest that reports of facilitators and barriers to inclusion remained relatively constant over the course of the study, and that although there was some variability in mentions of some facilitators and barriers, there was little in the way of clear trends. The decrease in parent mentions of the school community as a facilitator may indicate that if the child is accepted, this becomes taken for granted. The decrease in principal mentions of teacher attitude/relationship as a facilitator may also indicate that as children are accepted by the school community, this factor becomes less important for individual teachers.

Generally, these findings in relation to perceived barriers are in accord with common findings in other studies (Hay & Winn, 2005; Lindsay et al., 2013; Roberts & Simpson, 2016; Soto-Chodiman et al., 2012), but there are some interesting differences. Sensory issues, often identified as a problem area for people with ASD (Roberts & Simpson, 2016; Saggers et al., 2015), were mentioned as a barrier in less

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than 10% of interviews overall, and there were no mentions of sensory issues as a barrier by teachers in relation to individual students. On the other hand, good management of sensory issues was seen as a facilitator for about a quarter of the students. This may suggest that where sensory needs are identified, teachers and schools are making appropriate adjustments but under-identification could be an issue.

Bullying is an issue frequently reported to be a problem for students with ASD and a barrier to inclusion (Able et al., 2015; Falkmer et al., 2015; Roberts & Simpson, 2016), but in this study, it was only mentioned by parents in relation to 12.3% of students and appropriate management of bullying was seen as a facilitator for 5.2% of students. Bullying was not mentioned by any teacher or principal at all, indicating that parents may be more aware of this as an issue.

The specific barriers that were reported in Saggers et al. (2015), including lack of funding/resources and demands on teacher time, were also mentioned by our respondents but not as often as student factors. Carrington et al. (2016) carried out a longitudinal study of teachers' experiences with inclusion in the early years of school, and about half the teachers in their study had a child with ASD in their class. Teachers reported time pressures and additional responsibilities as a challenge, but time demands were identified as a barrier by teachers for only 12.2% of the students in our study.

Professional learning is viewed as an important strategy to improve the inclusion of students with ASD (Carrington et al., 2016; Roberts, 2015; Sharma et al., 2015), and in other studies parents have identified it as a need (Brewin, Renwick, & Schormans, 2008; Iadarola et al., 2015). Lack of professional learning was seen as a barrier for fewer than 10 students (but only reported as such by two teachers) and was mentioned as a barrier in less than 10% of interviews. Principals were more likely to report professional learning as a facilitator, but far fewer teachers and parents saw it as a facilitator. This lack of mention by teachers is of interest, as it is frequently, and recently, reported that lack of professional learning is a barrier and that teachers want more professional learning related to ASD (Able et al., 2015; Iadarola et al., 2015; Lindsay et al., 2013).

There are limitations to this study. Only about a third of the families approached agreed to participate and 21 families were lost during the study. Although data were collected over several rounds, data were not collected from parents, teachers, and principals for each child in each round. Not all principals and teachers agreed to participate in the research, so the sample may be biased in favour of teachers and principals who believed they were managing well, although it appeared some schools were finding it difficult to cater for some students with a range of complex difficulties. There was no systematic probing to encourage interviewees to expand on their responses, and the data rely on their immediate, spontaneous response to the two questions about their perceptions of barriers and facilitators. Had interviewees been asked to respond to a checklist of commonly reported barriers and facilitators, the results may have been different. Nevertheless, the approach taken offered the advantage of minimising the risk of leading interviewees.

The findings from this first Australian longitudinal study provide a large sample of views of facilitators and barriers to inclusion as perceived by Australian parents, teachers, and principals. Although we found little evidence of change in perceptions as the students aged, further research in high school settings would be of interest as would further in-depth exploration of perceptions through qualitative interviews. It would also be of interest to interview students to explore their perceptions of facilitators and barriers and to compare their perceptions with those of other stakeholders.

Overall, many of the barriers and facilitators reported in this study have been reported in other studies both in Australia and overseas. It is of concern that barriers are frequently seen as intrinsic to the student, rather than being perceived as inadequate responses to student need. It should also be noted that parents perceived many more barriers than did teachers or principals. This finding suggests inclusion of all children with ASD may be improved when principals, teachers, and parents work together to identify and minimise barriers and to identify and fully utilise facilitators. Some factors that are commonly reported as barriers were not often reported in this study, such as difficulties with sensory issues and bullying. Many more facilitators than barriers were reported, and this suggests that, overall, many schools are making many appropriate adjustments for many students with ASD.

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