

# Removing educational barriers in Australian schools for autistic students:

Current trends, gaps, and recommendations for educational research, inclusive policy, and educational practice

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## White Paper

Beth Sagers, Sofia Mavropoulou, Suzanne Carrington, Jessica Paynter, Dawn Adams, Stephanie Malone, Marleen Westerveld, Gilly McKeown, Christos Constantine, Trudy Bartlett, Connor B, Jacqui Gately, Shelley Heath, Amanda Porter, CJ Stewart, Hannah Winspear-Schillings, Smita Nepal, Jacqueline Dunne, Abbey Sagers, Jodie Wilde, Lisa van Leent, Natalie Wright, Chelsea Marsh, Kendall O'Connor

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Reframing Autism  
Siblings Australia

## Autism CRC

Autism CRC is the independent national source of evidence for best practice in relation to autism across the lifespan and the spectrum.

We provide the national capacity to develop and deliver evidence-based outcomes through our unique collaboration with autistic people, families, professionals, services providers, researchers, and government. Together, we are addressing agreed needs and co-producing outputs with these stakeholders for the benefit of the community.

Autism CRC was established in 2013 as the world's first national, cooperative research effort focused on autism under the Australian Government's Cooperative Research Centres (CRC) Program. We receive funding from a number of sources, including the Australian Government. Autism CRC is no longer part of, or associated with, the CRC Program.

[autismcrc.com.au](http://autismcrc.com.au)

## A note on terminology

We recognise that when referring to individuals on the autism spectrum, there is no one term that suits all people. In our published material and other work, we use the terms 'autistic person', 'person on the autism spectrum' or 'person on the spectrum'. The term 'autistic person' uses identity first language, which reflects the belief that being autistic is a core part of a person's identity.

Autism Spectrum Disorder (ASD) is diagnostic terminology used by the healthcare sector and is used in the context of a person being 'diagnosed with Autism Spectrum Disorder'.

Where we are citing others, we have amended their terminology where possible, but had to keep to the original terminology when citing policy title or publication titles.

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# Executive summary

The aim of this white paper is to give readers a better understanding of what is needed for autistic learners to flourish in educational environments. The white paper reports on the findings of the Autism CRC research project titled: Removing Educational Barriers in Australian Schools (REBAS). The aim of the REBAS project was to increase awareness and understanding of educational enablers and barriers for autistic students.

The white paper reports on five key areas:

1. A summary of the educational body of research conducted by Autism CRC (2013–2022).
2. A summary of key findings from the data generated by scoping review research across seven key themes. These reviews were conducted with the aim of reviewing the literature to identify current knowledge and gaps, to provide recommendations for research, policy and practice that will support autistic learners to flourish in their education.
3. A summary of key findings from an analysis of inclusive policies across all states and territories of Australia to provide recommendations for progressing nationwide inclusive policy and practice.
4. A summary of key results from empirical research conducted nationwide with multiple stakeholders (through a survey and interviews). The focus of the research was identifying educational enablers and barriers for autistic learners and their siblings.
5. Key recommendations to ensure autistic and diverse learners flourish and have agency in their education.

## Summary of Autism CRC educational research (2013–2022)

A summary of Autism CRC educational research conducted nationally is provided. This summary helps to inform what can be learned from this body of research over the last decade regarding limitations, gaps and recommendations that will help move autism educational research forward nationally into the future.

Across the last 10 years there were **five key focus** areas for Autism CRC educational research. These are summarised in Table 1.

**Table 1: Summary of Autism CRC Educational Research (2013–2022)**

Focus areas	Key areas of investigation
<p><b>A. Enhancing, teaching, &amp; the learning experience (classrooms of excellence)</b> 12 research projects</p>	<p>These research projects <b>focused on four key areas</b> of investigation:</p> <ol style="list-style-type: none"> <li><b>Literacy</b> including emergent literacy, shared book reading, predicting literacy outcomes, story times in libraries, written expression, and literacy support tools.</li> <li><b>Transitions</b> with a focus on teachers’ models of practice and transition out of school into employment.</li> <li><b>Collaboration</b> with education partners e.g., parents, autistic learners, educators, allied health.</li> <li><b>The classroom environment</b> e.g., acoustics, structured teaching approaches, models of practice.</li> </ol>
<p><b>B. Social emotional wellbeing &amp; school connectedness/engagement</b> 8 research projects</p>	<p>These research projects <b>focused on four key areas</b> of investigation:</p> <ol style="list-style-type: none"> <li>Multiple stakeholders’ views of Australian autistic learners’ <b>educational needs</b>.</li> <li><b>Navigating the social and social communication environment</b> at school (including software programs and robotics support).</li> <li><b>Novel approaches to supporting teachers and autistic learners</b> in schools (particularly rural and remote areas) and addressing challenges experienced implementing contextually fit approaches.</li> <li>Supporting wellbeing and connectedness.</li> </ol>
<p><b>C. Linking student experiences, developmental &amp; behavioural trajectories</b> 1 research project</p>	<p>A <b>6-year</b> longitudinal project linking autistic students’ academic outcomes to their life <b>experiences, wellbeing, and cognitive profiles</b>. One of the world’s largest and longest studies following autistic children over time. Data was collected from home, school and from some of the children/teenagers themselves including outputs investigating:</p> <ul style="list-style-type: none"> <li>Associations between autism characteristics and written and spoken communication skills in young autistic children.</li> <li>Extensive research into anxiety in autistic children, including school-based anxiety.</li> <li>Participation profiles of autistic children at home, school, community.</li> <li>Self-reported positive attributes and favourite activities of autistic children.</li> </ul>
<p><b>D. Adulthood research projects linked to educational research.</b> 3 research projects</p>	<p><b>Three key longitudinal and short-term</b> research projects focused on transition from school to further education and employment.</p>
<p><b>E. Research knowledge translation</b> 3 research projects</p>	<p>A suite of <b>three additional</b> educational research projects supporting knowledge translation research and the development of knowledge translation resources housed and freely publicly accessible - nationally and internationally on the InclusionEd website (<a href="https://www.inclusioned.edu.au/">https://www.inclusioned.edu.au/</a>).</p>

Table 2 provides a summary of recommendations for future research generated by Autism CRC educational research 2013–2022.

**Table 2: Recommendations for Future Research Informed by Autism CRC Educational Research (2013–2022)**

Key Topics	Research that:
<b>Co-production</b>	Is co-produced with autistic individuals, autistic community groups and autism community partners.
<b>Generalisation and research knowledge translation</b>	<ul style="list-style-type: none"> <li>• Balances generalisability and the need for application to diverse contexts/participants.</li> <li>• Investigates support, professional learning, skills, and confidence of educators.</li> <li>• Enables educators to proactively monitor factors that put autistic children at educational risk.</li> <li>• Applies socially valid experimental research methods to classroom environments.</li> </ul>
<b>Participants and contexts</b>	<p>Research that includes:</p> <ul style="list-style-type: none"> <li>• Hard-to-reach people – most in need.</li> <li>• Marginalised in multiple ways.</li> <li>• Broader diversity in participants and contexts.</li> <li>• Perspectives of children and caregivers.</li> <li>• Broader targets for participants to increase time- and cost-effectiveness of school-based interventions.</li> </ul>
<b>Research training</b>	Provides different professional learning options to support training and to help promote research knowledge translation.
<b>Linking data sets</b>	Considers pathways for how data each year feeds into next year and may predict student outcomes.
<b>Mental health, anxiety, &amp; wellbeing</b>	<ul style="list-style-type: none"> <li>• Improves knowledge and understanding of anxiety at school.</li> <li>• Investigates profiles of school anxiety in male, female, and non-binary autistic children and how they differ from non-autistic children.</li> <li>• Focuses on characterising and unravelling the interplay of risk and resilience factors for mental health difficulties.</li> <li>• Develops and evaluates psychological treatments for common mental health, health and sleep difficulties co-occurring with autism.</li> <li>• Identifies effective early support strategies to protect against later mental health concerns.</li> <li>• Includes reliable measures: <ul style="list-style-type: none"> <li>– for school participation for autistic students</li> <li>– for valid, and autism-considerate measures of school anxiety</li> <li>– with comparable multi-informant versions to gather reliable data on similarities and differences across settings and contexts.</li> </ul> </li> </ul>
<b>Curriculum areas, teaching practice, focused interventions</b>	<ul style="list-style-type: none"> <li>• Involves longitudinal research investigating literacy performance profiles in autistic students from primary into high-school years to enable early identification of students at risk of (persistent) literacy difficulties.</li> <li>• Includes other curriculum areas beyond literacy and further extends research that considers social emotional, wellbeing and behavioural support.</li> <li>• Is holistic in focus with critical reflection of inclusive practice and placement decisions.</li> <li>• Investigates sensory subtypes to inform tailored supports.</li> </ul>
<b>Research design</b>	<ul style="list-style-type: none"> <li>• Adapts experimental research methods to ensure social validity in the school environment.</li> <li>• Involves more longitudinal studies.</li> <li>• Includes longer-term trials in classrooms with more diverse student groups and inclusion of more diverse measures of student outcome.</li> <li>• Considers utility of strategies for other groups of learners.</li> <li>• Explores optimal focus and frequency of prevention and early supports.</li> <li>• Supports different socioeconomic and geographical contexts e.g., rural, and remote schools.</li> </ul>
<b>Data collection</b>	<ul style="list-style-type: none"> <li>• Co-develops a meaningful measure of participation for autistic students including self-rating scales.</li> <li>• Use measures suitable for autistic people, with findings that can be generalised to real-world contexts.</li> </ul>

# Scoping current international trends, limitations, and gaps in autism educational research and analysing inclusive education policies

## Australia wide

To be genuinely inclusive, education systems need to implement policies and practices that reduce educational barriers to school success for diverse learners. Building on the success of the body of educational research conducted by Autism CRC, it was considered timely to scope, map, and synthesise relevant literature on topics that:

1. Inform understanding of autistic learners, including those with high and/or complex needs or who are marginalised in multiple ways
2. Identify gaps and limitations of autism educational research conducted to date
3. Identify enablers and challenges to inclusive educational practice for autistic and diverse learners
4. Analyse inclusive educational policies Australia wide.

Identifying key issues related to promoting autistic learner success and gaps in educational policy, research, and practice can inform the autism community and our education system nationally. Identification of key issues can also provide recommendations to support the development of appropriately tailored inclusive research, policies, practices, and professional learning that promote autistic and diverse learners' success in schools.

Scoping reviews are useful for examining, mapping, and identifying boundaries in the literature. The purpose of these reviews was to “scope” and synthesise the literature on these topics to help build our awareness and understanding of what factors may be influencing autistic learners' educational success. In addition, these reviews aimed to identify key gaps in research, policy and practice that can inform recommendations for what further is needed for autistic learners to flourish and have agency in educational environments.

Each scoping review had an overarching focus on a research question related to:

### **What are the enablers and barriers to autistic learners flourishing in their education?**

Further research questions around enablers and barriers to siblings flourishing were also considered in relation to themes that were relevant.

Produced in consultation with autistic consultants, autistic community groups, and other autism community end users, seven themes were identified as the focus for scoping reviews (refer to Figure 1). Each review considered key topics related to each theme. The seven themes were:

1. Academic and learning considerations
2. Built environment and learning space design considerations
3. Wellbeing considerations
4. Co-occurring considerations
5. Identity considerations
6. Family and community considerations
7. Inclusive practices.

**Overall, in total 870 articles were reviewed across the seven themes.**

To further supplement the scoping reviews an examination and analysis of inclusive education policy documents nationally was also undertaken. The review and analysis identified relevant inclusive education policy documents publicly available from every state and territory nationally. As a result, in addition to the total **870** articles reviewed for the scoping reviews, a further **22** documents were reviewed for inclusive policy analysis.

**Figure 1. Overview of REBAS scoping review themes and topics**



- **Theme 1 scoping review** identified research that looked at **academic and learning considerations** that can have a positive or negative impact on autistic students' capacity to thrive in schools. The review reported on the findings of **132** research articles published **in the last 10 years**. These were summarised in relation to **eight** topics. Several supports were identified in the research as enablers to academic success while **a lack of appropriate supports for learning, the resulting increased anxiety and negative school climate were identified as some barriers**.
- **Theme 2 scoping review** identified research looking at **built environment and learning design factors** that can have a positive or negative impact on autistic students thriving in schools. The review reported on the findings of **65** research articles published **in the last 10 years**. These were summarised in relation to **three** topics. **ASPECTSS Design Index (Acoustics, Spatial sequencing, Escape space, Compartmentalisation, Transitions, Sensory zoning, Safety) was frequently cited as key considerations to enable** success in the learning environment.
- **Theme 3 scoping review** identified research looking at **wellbeing factors** that can have a positive or negative impact on autistic students thriving in schools. The review reported on the findings of **212** research articles published **in the last 10 years**. These were summarised in relation to **11** topics. **Anxiety and bullying in educational contexts were found to be key barriers** to autistic learner success and **relationships and safe space were important enablers**.
- **Theme 4 scoping review** identified research looking at **co-occurring considerations** that can have a positive or negative impact on autistic students thriving in schools. The review reported on the findings of **174** research articles published **in the last 10 years**. These were summarised in relation to **four** topics. **Behavioural experiences with educational contexts** were identified as one of the **major barriers** to school success for autistic learners as well as **a lack of consultation and collaboration with key stakeholders including autistic learners**.
- **Theme 5 scoping review** identified research that looked at **factors related to identity** that can have a positive or negative impact on autistic students' capacity to thrive in schools. The review reported on the findings of **183** research articles published **in the last 10 years**. These were summarised in relation to **four** topics. **Cultural, autistic identity, gender and sexuality identity considerations were identified** as enablers or barriers to autistic learner success.
- **Theme 6 scoping review** identified research looking at **family and community factors** that can have an influence autistic students' capacity to thrive in schools. The review reported on the findings of **80** research articles published **in the last 10 years**. These were summarised in relation to **four** topics. Family, sibling, and extended family considerations for both **autistic learner and sibling success** were identified.
- **Theme 7 scoping review** identified research related to **inclusive practices** that can influence autistic students' success in schools. The review reported on the findings of **74** research articles published **in the last 10 years**. These were summarised in relation to **four** topics. **Enablers and barriers to inclusive practice for autistic learner success were identified**.



An **inclusive education policy review across all states and territories of Australia** was also conducted. The review and analysis of the **inclusive education policy and strategic plans** of each state and territory in Australia used a framework for policy analysis informed by the UNESCO (2017) guide for ensuring inclusion and equity in education and three additional concepts drawn from scholarly literature and international instruments including:

- **the social model of disability**
- **definition of inclusive education (CRPD/GC4)**
- **context.**

The review and analysis highlighted how each state and territory has made some progress towards achieving inclusive education policy and practice in Australia and indicated the work that still needs to be done. It highlighted challenges associated with achieving agreement between governments and education districts which can be overcome with a national inclusive education roadmap/framework/approach to policy and practice.

## **REBAS empirical research**

Informed by the previous Autism CRC Educational Needs Analysis research (Saggers et al, 2018), the mixed methods nationwide study used a convergent parallel research design (Creswell & Plano Clark, 2017) to implement a national online qualitative survey and semi-structured interviews. The aim was to provide a further richness and depth to the data collected across all phases of the REBAS project.

### **Survey data**

In total, **145 participants completed the survey** including:

- **134 participants** from the following stakeholder groups:
  - educators – teachers ( $n = 26$ ), teacher's aides ( $n = 5$ ), school leaders ( $n = 6$ ), parents/caregivers ( $n = 64$ ), and allied health professionals ( $n = 33$ )
- **10** autistic students
- **1** sibling

**Key findings** from adult stakeholders (parents, educators, or allied health professionals) and autistic learners who completed the online survey were described in relation to six key areas:

1. Strengths of autistic learners
2. Needs of autistic learners
3. Enablers for autistic learner success
4. Barriers to autistic learner success
5. Autistic learners and complex needs
6. Professional learning needs of stakeholders to support autistic learner success.

Autistic learners' strengths were identified and are summarised in Table 3.

**Table 3: Autistic learners' strengths**

Thinking and reasoning	Personality	Skills and talents	Academic	Social
<ul style="list-style-type: none"> <li>• Creativity &amp; flexible thinking</li> <li>• Passion/interest in subjects</li> <li>• Attention to detail</li> <li>• Intelligence &amp; knowledge</li> <li>• Memory</li> <li>• Visual processing</li> </ul>	<ul style="list-style-type: none"> <li>• Compassion/empathy</li> <li>• Kindness &amp; respect</li> <li>• Determination &amp; desire to achieve</li> <li>• Honesty</li> <li>• Humour</li> <li>• Resilience</li> <li>• Sense of justice/fairness</li> <li>• Courage</li> <li>• Positive/open-minded attitude</li> <li>• Hardworking</li> <li>• Curiosity</li> <li>• Independence &amp; maturity</li> <li>• Patience &amp; forgiveness</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding of self</li> <li>• Unique perspective</li> <li>• Authenticity</li> <li>• Ability to focus</li> <li>• Routine</li> <li>• Follows rules &amp; expectations</li> <li>• Physical ability</li> <li>• Organisation</li> </ul>	<ul style="list-style-type: none"> <li>• Mathematics</li> <li>• General</li> <li>• Reading &amp; literacy</li> <li>• Science</li> <li>• Physical education</li> <li>• History</li> </ul>	<ul style="list-style-type: none"> <li>• General Social</li> <li>• Accepting of others</li> <li>• Supportive of peers</li> <li>• Supportive of staff</li> <li>• Supportive of family</li> </ul>

Note: Themes are reported most to least commonly reported from left to right, and columns list most to least commonly reported from top to bottom.

Autistic learners' needs were identified and are summarised in Table 4.

**Table 4: Autistic learners' needs**

Classroom accommodations and supports	Social-emotional skills	Supportive attitudes	Adaptive behaviour skills	Mental health	Academic skills
<ul style="list-style-type: none"> <li>• Flexible curriculum and teaching styles</li> <li>• Supportive sensory environment</li> <li>• Specific accommodations (e.g., more time)</li> <li>• Clear instructions</li> <li>• Routine and consistency</li> <li>• Small classes/groups</li> </ul>	<ul style="list-style-type: none"> <li>• Coping skills and emotional regulation</li> <li>• Building friendships/relationships with peers and staff</li> <li>• Learning social skills</li> <li>• General social skills</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding and respect</li> <li>• Acceptance and belonging</li> </ul>	<ul style="list-style-type: none"> <li>• Organisation</li> <li>• Sense of safety</li> <li>• Life skills</li> <li>• Building engagement and focus</li> </ul>	<ul style="list-style-type: none"> <li>• Support for mental health and self-esteem</li> </ul>	<ul style="list-style-type: none"> <li>• Tutoring and extra support for difficult subjects</li> </ul>

Note: Themes are reported most to least commonly reported from left to right, and columns list most to least commonly reported from top to bottom.

Enablers to autistic learners' success were identified and are summarised in Table 5.

**Table 5: Enablers to autistic learners' success**

School support network	Environmental	Academic	Understanding of autism	Classroom accommodations and supports	Student attributes	Home supports
<ul style="list-style-type: none"> <li>• Attitude &amp; knowledge</li> <li>• Supportive relationships</li> <li>• Supportive staff teacher/principal</li> <li>• Acceptance &amp; inclusivity</li> <li>• Access to services</li> <li>• Empathy</li> </ul>	<ul style="list-style-type: none"> <li>• Flexible &amp; adaptable</li> <li>• Supportive resources</li> <li>• Clear communication</li> <li>• Sensory environment</li> <li>• Safe</li> <li>• Non-restrictive classroom</li> <li>• Smaller class size</li> </ul>	<ul style="list-style-type: none"> <li>• Accessible and inclusive curriculum</li> <li>• Incorporation of strengths and interests</li> <li>• Range of activities</li> <li>• Mathematics</li> </ul>	<ul style="list-style-type: none"> <li>• School level</li> <li>• Neurodiversity-affirming approach</li> <li>• Recognition &amp; acknowledgement</li> <li>• Flexibility and adaptability</li> <li>• Embedded in policies &amp; processes</li> <li>• Community level</li> </ul>	<ul style="list-style-type: none"> <li>• Routine</li> <li>• Visual cues</li> <li>• Technology</li> <li>• Self-directed learning</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to self-advocate</li> <li>• Sense of belonging</li> <li>• Student strengths</li> <li>• Resilience</li> </ul>	<ul style="list-style-type: none"> <li>• Supportive home</li> </ul>

Note: Themes are reported most to least commonly reported from left to right, and columns list most to least commonly reported from top to bottom.

Barriers to autistic learners' success were identified and are summarised in Table 6.

**Table 6: Barriers to autistic learners' success**

Attitudes and knowledge of autistic learners and inclusion	Academic	Environmental	School policies and procedures	Support network	Social	Student mental health
<ul style="list-style-type: none"> <li>• Understanding</li> <li>• Inclusivity &amp; acceptance</li> <li>• Lack of neurodiversity-affirming approach</li> </ul>	<ul style="list-style-type: none"> <li>• Fixed/inflexible teaching</li> <li>• Non-inclusive curriculum</li> <li>• Fixed expectations</li> <li>• Tests/homework</li> <li>• Lack of assistive technology</li> </ul>	<ul style="list-style-type: none"> <li>• Non-inclusive and inflexible</li> <li>• Communication</li> <li>• Classroom sizes</li> <li>• Not sensory friendly</li> <li>• Distractions</li> <li>• Unsafe</li> <li>• Resources</li> </ul>	<ul style="list-style-type: none"> <li>• Staff training/resources</li> <li>• Use of punishment</li> <li>• Funding</li> <li>• Low level of student involvement</li> <li>• Rules/regulations</li> <li>• Inconsistency</li> <li>• Lack of accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Staff</li> <li>• Processes/policies</li> <li>• Home</li> <li>• Relationships</li> <li>• Access to services</li> </ul>	<ul style="list-style-type: none"> <li>• Bullying</li> <li>• Lack of engagement with peers</li> </ul>	<ul style="list-style-type: none"> <li>• Social/wellbeing</li> <li>• Anxiety/social anxiety</li> <li>• Fear of school</li> </ul>

Note: Themes are reported most to least commonly reported from left to right, and columns list most to least commonly reported from top to bottom.

### 1.1.1.1 Educational strengths and needs of autistic learners with complex needs

Complex needs were defined in the survey as “intersectional identities (e.g., autistic and CALD, First Nations, sexual and gender diverse) and/or co-occurring conditions (e.g., intellectual disability, ADHD, dyslexia, complex learning, communication, behavioural/social emotional, twice exceptional/dual exceptionality, co-existing health or disability needs).” It was indicated that the results regarding the educational strengths and needs of autistic learners was representative of those who also had complex needs. Of note, most parents ( $n = 56$ , 86.2% of parent respondents) answered “yes” their responses related to a student with complex needs. Furthermore, most other stakeholders (teachers, school leaders, and allied health,  $n = 50$ , 75.8%) reported their answers would be similar for autistic students with complex needs.

### 1.1.1.2 Professional learning

Parents/Caregivers and professionals on average reported high interest in more professional learning in autism. Top five areas of most interest for professional learning were:

- Mental health
- Flexible curriculum and teaching modalities
- Autism awareness and understanding including neurodiversity affirming practice
- Environmental and sensory supports, and additionally for parents – broader supports and access to these in the community
- Consultation and professional development informed or led by autistic people.

## Interview data

Of the 145 participants who completed the survey, 50 (**34.5%**) of the participants consented to an **in-depth semi-structured interview** including:

- 23 parents/caregivers
- 9 educators
- 11 allied health professionals
- 6 autistic students
- 1 sibling.

The research also included a qualitative component through in depth semi-structured interviews that were designed to establish/explore from the various stakeholder perspectives what enablers and barriers influenced academic learning, wellbeing and engagement at school for autistic students who have complex needs. There were **50 participant stakeholders** (23 parents/caregivers, 11 allied health professionals, 9 educators, 6 students, 1 sibling) who were individually interviewed online or via phone.

Figure 2 provides a visual representation of the educational strengths and needs of autistic learners generated by the interview data.

**Figure 2: Educational strengths and needs of autistic learners**

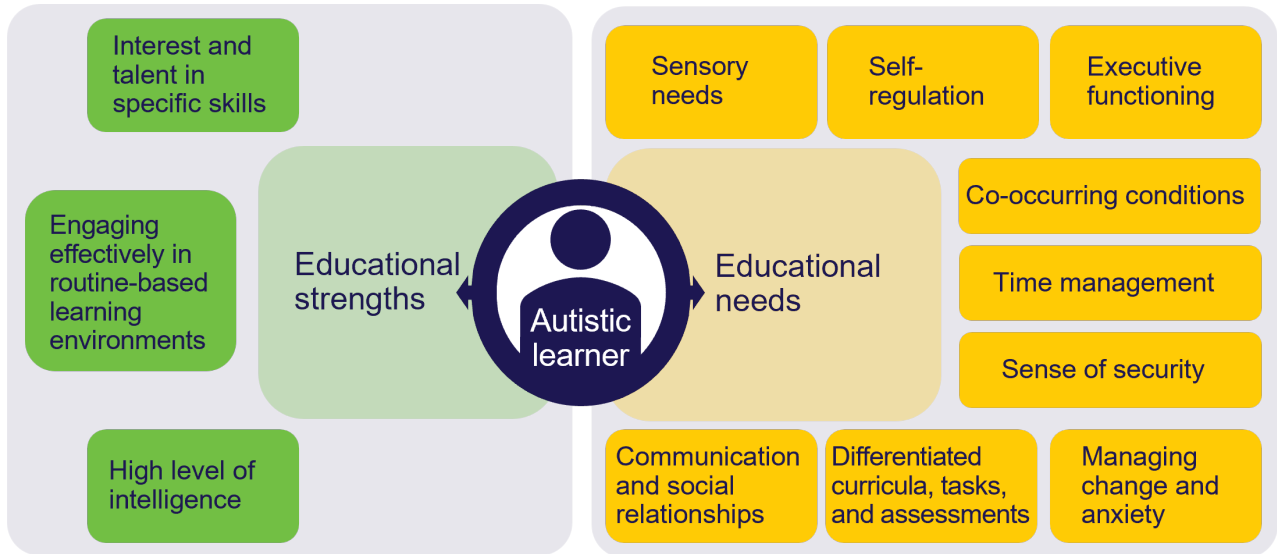
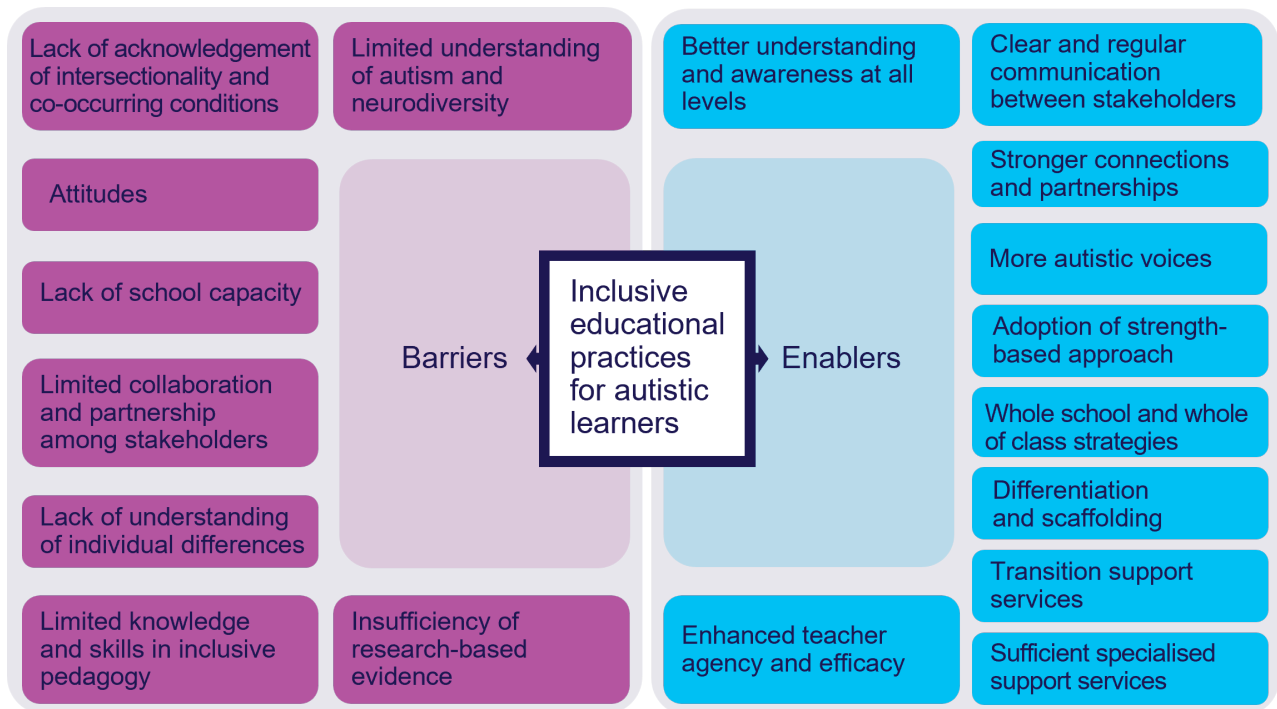


Figure 3 provides a visual representation of the barriers and enablers to education for autistic learners generated by the data.

**Figure 3: Barriers and enablers to education for autistic learners**



## Summary and recommendations

Critically evident from the research was the unique and vast diversity within the autistic community that needs increased recognition, awareness and understanding to ensure autistic learners can flourish and experience educational success in schools. Current barriers to education are often linked to a lack of knowledge or understanding of the multiple ways this group of learners can be marginalised within school environments when there is lack of neurodiversity-affirming approaches in place that acknowledge their multiple attributes and intersectional profiles. Schools are complex, multilayered, fluid social environments that can be extremely challenging for the autistic learner to navigate without appropriate enablers in place. The current body of research has drawn attention to the limited recognition of current approaches and the multiple influences in play within educational contexts, that can create enablers or barriers to autistic learners flourishing in their education. Often assumptions around complexities for autistic learners are linked to their perceived cognitive level. Instead, drawing on an alternate definition of complexity by Pfeiffer (2015) can help understand that educational success for the autistic learner is related to a set of multiple attributes such as:

- Attributes of the learner (e.g., culture, identity, academic strengths, needs and learning preferences, wellbeing)
- Attributes of the environment including attributes of the built environment, learning space, pedagogical approaches, inclusive practices, and policies that may influence learning.

The more complex the attributes, the greater the need for:

- Multiple resources
- Multidisciplinary support, professional development and learning, collaboration, and consultation
- Individualised, strength-based, and tailored approaches to promote educational success.

### Recommendations for policy, research, and practice that support autistic learners to flourish in education

Drawn on the outcomes from the scoping and inclusive education policy reviews and the findings of the empirical research involving community consultation (survey and interviews), the following recommendations are made for policy, research, and practice to enhance autistic students' opportunities to thrive in the Australian education system.

### 1.1.1.3 Policy recommendation to support autistic learners to flourish

Table 7 provides a policy recommendation based on the seven scoping reviews and REBAS empirical research.

**Table 7: Policy recommendation to support autistic learners to flourish**

Policy recommendation
Across states and territories, the provision of adequate resourcing, funding, and support to ensure autistic learners' success
Including:
<ul style="list-style-type: none"> <li>• extra physical and material resources to support success for autistic learners that includes specialist staff, multidisciplinary support, time for consultation and collaboration, resources, and equipment</li> </ul>
<ul style="list-style-type: none"> <li>• funding and support for professional development training of allied health practitioners, educators, and school leaders</li> </ul>
<ul style="list-style-type: none"> <li>• novel approaches to ongoing support in rural and remote regions to support schools, allied health practitioners, families, and school systems</li> </ul>
<ul style="list-style-type: none"> <li>• additional support, support networks, and support groups for families navigating diagnosis for their child and across the lifespan</li> </ul>
<ul style="list-style-type: none"> <li>• additional support, support networks, and support groups for siblings</li> </ul>
<ul style="list-style-type: none"> <li>• ongoing financial support for Australian-based autism research</li> </ul>
<ul style="list-style-type: none"> <li>• physical and material resources to support built environment design, including professionals with knowledge and understanding to design effective inclusive learning spaces using appropriate co-design method</li> </ul>
<ul style="list-style-type: none"> <li>• evidence-based building guidelines promoting the inclusion and accommodation of autistic individuals in learning environments</li> </ul>
<ul style="list-style-type: none"> <li>• tailored physical and material resources to support success for autistic learners that includes specialist staff, multidisciplinary support, time for consultation and collaboration, resources, and equipment</li> </ul>
<ul style="list-style-type: none"> <li>• strengthen the accountability of states and territories and school leaders to ensure that policy is being implemented in practice</li> </ul>



### 1.1.1.5 Research recommendation to support autistic learners to flourish

Table 8 provides a research recommendation generated by the seven scoping reviews and REBAS empirical research.

**Table 8: Research recommendation to support autistic learners to flourish**

Research recommendation
Ongoing commitment to research that deepens our knowledge of autistic experiences, heterogeneity and the complexity of autism and promotes research evidence to support autistic learners' success in schools
Including:
<b>A. More diverse academic and curriculum-based research exploring:</b>
<ul style="list-style-type: none"> <li>• broader academic areas and application of strategies across a range of academic/curriculum areas</li> <li>• students' acquisition of social or multimodal literacy skills through engagement with blended digital media creation</li> <li>• which adjustments of teaching materials are most appropriate for autistic learners</li> <li>• what best supports autistic learners in different subject areas</li> <li>• current teaching practices that work well for their autistic students</li> <li>• how challenges in one subject may influence another</li> <li>• the link between transitions and academic success</li> <li>• what effect academic needs have on autistic learner's next steps after school e.g., career pathways, vocational education and training, and university education</li> </ul>
<b>B. More classroom-based research that:</b>
<ul style="list-style-type: none"> <li>• develops more socially valid classroom-based research that has fidelity across whole school, year level, and individual classrooms</li> <li>• evaluates classroom-based 'intervention' trials to assess how they can be translated from 1:1 research contexts</li> <li>• captures built environment post-occupancy evaluation case studies including observation and autistic learners' perspectives</li> </ul>
<b>C. Increased diversity in research design that reduce risk of bias and monitoring of adverse effects including:</b>
<ul style="list-style-type: none"> <li>• large scale studies</li> <li>• longitudinal studies to follow student progress</li> <li>• randomised control trials for specific programs and supports</li> <li>• qualitative research to get a deeper insight into autistic learners/teachers/parents' views</li> <li>• mixed methods</li> <li>• higher ecological and social validity measures</li> <li>• evaluations of skill maintenance post research</li> <li>• innovative single case study designs that can examine the outcome of whole classroom or whole school approaches</li> </ul>

## Research recommendation

### D. Wider diversity in participants and geographical location including:

- greater focus on younger (under 8) and older children (12-17)
- autistic students with co-occurring conditions such as intellectual disabilities, specific learning disorders, communication disorders, attention deficit hyperactivity disorder, anxiety disorders, and mood disorders
- increased diversity in participants e.g., intersectionality, multiple marginalities, hard to reach participants, gender (beyond binary male/female), sexuality, identity, geographical location, race, culture, ethnicity, minimally verbal, older and younger children, intellectual disability, low socio-economic status
- multiple stakeholders' perspectives
- built environment design professionals, disability design consultants, and government stakeholders involved in educational building procurement
- student perspectives at the intersection of autism and other disabilities, cultures, identities, and complexity in needs
- research that broadens geographic and social economic diversity across contexts (e.g., internationally, nationally, regional, rural, and remote)
- more Australian produced research (reflecting our unique geographical, cultural, and socio-economic diversity)

### E. Built environment and learning space research that:

- investigates effects of built environment and learning space design on autistic learners and those who are marginalised in multiple ways
- focuses on the design and evaluation of inclusive built environments and learning spaces to support neurodiverse learners
- supports and develops methods and protocols for the collaborative co-design of learning spaces with teachers, students, and parents
- supports the development of evidence-based building and refurbishment guidelines promoting the inclusion and accommodation of neurodiversity in learning spaces and the broader built environment
- investigates effects of built environment and learning space design on autistic learners and those who are marginalised in multiple ways

### F. Wellbeing research that further investigates:

- anxiety, depression, mental health, wellbeing, and quality of life in autistic learners of different ages
- trauma and autistic learners
- approaches to support connectedness and belonging, and minimise risk of bullying
- burnout – teacher, parent, student
- masking/camouflaging and autistic learners
- positive approaches to supporting behaviours experienced by some autistic learners in school environments

### 1.1.1.6 Practice recommendation to support autistic learners to flourish: Maximising success and reach – professional learning, support, and translation to practice

Table 9 provides practice recommendation generated by the seven scoping reviews and REBAS empirical research.

**Table 9: Practice Recommendation to Support Autistic Learners to Flourish**

Practice recommendation
<p>School leaders, educators, allied health and associated paraprofessional supports operate with deep knowledge of autistic experiences, heterogeneity, attributes and the complexity of autism and its place in all areas of student engagement including <b>academic, executive function, social-emotional, behavioural, sensory, and identity considerations</b>.</p> <p>Achieved through ongoing professional learning, support and coaching for school leaders, educators, allied health, and other professionals.</p>
<p><b>Ongoing professional learning builds awareness and ensures the implementation of practices that:</b></p> <ul style="list-style-type: none"> <li>• reduce anxiety, behavioural, bullying, and social challenges for autistic learners in the school environments</li> <li>• support autistic perspective and identity within their education</li> <li>• nurture an inclusive school climate that supports connections, a sense of belonging, peer acceptance and connections</li> <li>• support students’ executive function, social networks, self-regulation, and wellbeing</li> <li>• reduce environmental challenges e.g., sensory experiences within the school environment</li> <li>• promote strong connections and communication in home school partnerships</li> <li>• increase awareness and understanding of risk of multiple marginalities for this group of learners and in turn reduce barriers to learning for autistic learners at risk of multiple marginalities</li> <li>• promote autistic students’ self-determination and agency</li> <li>• support wellbeing of educators and parents, to reduce burnout</li> <li>• build understanding of how trauma and potential trauma can be identified, reduced and responded to (e.g., teaching in trauma-informed ways)</li> <li>• develop awareness and understanding of socially valid evidenced-based practices that support learners with intellectual disability, communication, or behavioural needs and that can be implemented with fidelity in school environments and include respect for student autonomy, self-determination, and causal agency</li> <li>• draw on professional learning on culturally responsive practices</li> <li>• build awareness and understanding of gender/sexual diversity and implementing practices that are supportive and promote the success of this group of learners</li> <li>• promote recognition and understanding of the educational needs of siblings and implementation of supports to ensure their success in schools</li> <li>• recognise the importance of the sibling relationship – as important ‘agents’ in the development of autistic learners – but need support themselves</li> <li>• enhance understanding and implementation of neurodiversity-affirming approaches and multiple attributes influencing autistic learners’ success</li> <li>• increase professional development opportunities regarding inclusive and equitable practices for educators</li> <li>• adopt approaches that support connectedness and belonging and mitigate risk of bullying</li> </ul>

## Recommendations for inclusive education policy, research, and practice

The following recommendations are **drawn specifically from the inclusive education policy review and analysis of Australian states and territories inclusive education policy and strategy** and provide broader inclusive education policy, research, and practice recommendations (see Table 10).

**Table 10: Recommendations for inclusive education policy, research, and practice**

Recommendations for inclusive education policy, research, and practice	
<b>A. Inclusive education policy recommendations</b>	
i)	States and territories documents should include definitions of inclusion (as in General comment No. 4, United Nations CRPD, 2016) and equity consistently across their educational policies, strategic plans, and documents guiding school practices. This will help all professionals working with learners and their families develop shared understanding and agreement about what inclusive education is and what it is not.
ii)	States and territories should adopt the General comment No. 4 (United Nations CRPD, 2016) definition of inclusive education in their policy and plan documents to accelerate systemic reform and promote genuine inclusive practice.
<b>B. Inclusive education research recommendations</b>	
i)	Involve key educational stakeholders to work in partnership with researchers to progress a national inclusive education system.
ii)	Commitment to participate in comparative and international research across different contexts to address inclusive education policy to practice gaps.
iii)	Increase research focused on student, parent, and teacher perspectives to better understand the perceptions, challenges, and successes associated with inclusive schooling.
iv)	In-depth studies about how schools and educators understand and enact inclusive education.
<b>C. Inclusive education practice recommendations</b>	
i)	States and territories need to ensure that professionals supporting learners and their families understand and support policy goals for promoting inclusion and equity in education.
ii)	States and territories need to establish systems for monitoring the presence, participation, and success of all learners and use this evidence to make informed decisions for fostering greater inclusion and equity.
iii)	Actions need to be taken to define leadership goals and roles at different levels and enhance education leaders' capacity, commitment, and accountability.
iv)	Plans and strategies should identify, challenge, and remove potential non-inclusive, discriminatory, and inequitable practices in schools and other learning centres.
v)	Greater structure and system support for inclusive education is required: all schools should be expected and supported to be inclusive schools.
vi)	Special education services need to be included in strategy and planning to progress inclusive education.
vii)	Education sectors should work collaboratively with other government sectors to progress inclusive education.
viii)	Mechanisms to ensure transparency for, and access to, the use of resources to support equity and inclusion need to be established.
ix)	Short- and long-term planning is needed to support collaboration, sharing of expertise, resources, and funds to support a unified system of inclusive education.
x)	Actions need to be taken to ensure that schools, teachers, and school leaders use a range of pedagogical strategies to cater to learner differences. This needs to be outlined in educational policies, and implementation plans need to be included in strategic plans.

## Recommendations for inclusive education policy, research, and practice

- xi) Schools should develop and monitor effective procedures for listening to students' views regarding their learning and aspirations.
- xii) Teachers should have the knowledge and skill to assess learning progress and support students at risk of underachievement, marginalisation, or exclusion.
- xiii) School staff should be expected to work closely with parents to strengthen support for learners at risk of underachievement, marginalisation, or exclusion.
- xiv) Planning and action need to occur to strengthen initial training so that teachers and support staff can respond to diversity more effectively.
- xv) Increase professional development opportunities regarding inclusive and equitable practices.

## Conclusion

This REBAS body of research highlighted that for autistic learners to thrive in their education it is important that deeper knowledge and understanding is needed regarding the great diversity, heterogeneity, attributes and experience of autistic learners and the complexity of autism. This requires ensuring appropriate inclusive education policies are in place and are translated and actioned in practice in educational settings. The research identified key factors that need to be considered and provided recommendations for policy, research, and practice that can help deepen knowledge and understanding of autistic learners and ensure they flourish in educational environments. Barriers to autistic learners' education were identified as a lack of adequate understanding of autism and other kinds of neurodivergence, particularly in school settings. Concerns were also raised about the capacity of schools to include and support autistic learners, educators lack of understanding of how to cater to individual differences, and the limited use of appropriate inclusive pedagogy. To enable autistic learners' educational engagement and achievement, emphasis should be on increasing understanding across all stakeholder groups, including policymakers, parents/carers, educators, allied health, and peers, as well as forging stronger partnerships fostering clear and regular communication between all stakeholders. The significance of having more autistic perspectives in such collaborations and professional development programs is fundamental to their success. It is critical to support autistic learners to flourish in education settings promoting their growth, development, learning and holistic wellbeing. When autistic learners can develop their potential and live well and when teaching and learning are of a high quality and meaningful to them, their relations will prosper.

## Lay summary abstract

This research looked at things that can make it easier or harder for autistic learners to do well at school. We used this information to list the things that should change in policy, research, and practice to help autistic learners be successful. Our research found that the biggest thing that gets in the way of autistic young people's learning is that people in schools, or other places where autistic people learn, don't always understand autism very well. That means that they don't understand very much about how autism may impact school and learning. The study found schools need to include and support autistic students more, and understand the challenges they face, especially if they have other conditions. It's important for parents, teachers, and friends to understand autism too. The research said that everyone should work together, talk more, and listen to autistic people when making decisions. If we do these things, schools will be better for autistic learners, and they will do well and feel good about themselves.

## Background

Globally, autism prevalence rates have significantly increased over the past three decades (Chiarotti & Venerosi, 2020), leading to a worldwide increase in autism awareness and rapid growth in autism related research (Kan et al., 2023). However, despite huge growth in autism awareness and research, significant critical research gaps remain (Poulsen et al., 2022). This has driven a push for research that will develop a better understanding of autism and how to better serve autistic people and their priorities (Pearson et al., 2022; Poulsen et al., 2022).

Recently, in response, the Australasian Autism Research Council (which is auspiced by Autism CRC) worked with the community to understand the “research priorities of the autistic and autism communities” (Poulsen et al., 2022, p. 3). Through fine-grained analysis and consultation, the council developed 10 research priority areas with five initially examined more deeply to understand further the issues within each priority area. These priorities exclusively focused on “improving understanding of the diverse experiences, preferences and needs of autistic people, while also developing knowledge, understanding and approaches to inform policy, practices and supports” (Pearson et al., 2022, p. 4). The priorities highlight the important role of increasing awareness of the autistic community as well as the training and development needed for professionals in supporting this awareness. Importantly part of building this understanding and awareness is promoting “a broader view of the capabilities of members of the autistic community” (Pearson et al., 2022, p. 4) that replaces representations that pathologise and/or marginalise individuals and that promotes autistic agency (Pearson et al., 2022). Addressing these research priorities “will not only help build a true understanding of autistic people and the broader autism community, but also will in turn shape policy, practices and research funding in such a way as to promote autistic flourishing” (Pearson et al., 2022, p. 4). This white paper facilitates these research priorities by improving our understanding of what is needed for autistic learners to flourish in educational environments, informs areas for future professional learning and helps identify gaps in current research, policy and practice that need to be addressed.

**It does this by presenting a broad view of key information generated by current research and policy with a focus on education.**

## What is a white paper?

A white paper is a research-based report, offering a focused description and discussion of a complex topic (University of Massachusetts Lowell, 2022).

## Why has this white paper been developed?

Produced in consultation with autistic individuals, autistic community groups, and other autism community end users, this white paper reports on the results of an Autism CRC research project – Removing Educational Barriers in Australian Schools (REBAS).

**The aim of this white paper is to give readers a better understanding of what is needed for autistic learners to flourish in educational environments.**

## Who is this white paper for?

This white paper is for autistic people, autistic community groups, other autism community end users, policymakers, practitioners, government agencies, researchers, educators, allied health professionals and anyone interested in ensuring autistic learners flourish in their education.

**It aims to present a broad view of key information generated by current research and policy in the area of education.**

## What research has informed this white paper?

In August 2022, Autism CRC commissioned a research project titled Removing Educational Barriers in Australian Schools (REBAS). The REBAS project aimed to further advance knowledge of the enablers and barriers to autistic learners' success in Australian schools, including those with high or complex needs or at risk of being marginalised in multiple ways in schools.

**The aim of the REBAS project was to understand and increase our awareness and understanding of educational enablers and barriers for autistic students.**

Throughout the planning and implementation of this project every effort was made to work with our autistic consultants, autism community research partners and university partners to extend the reach of this research and connect with traditionally hard to reach participant groups. For example, students with complex support requirements, intellectual disability, and other co-occurring conditions, as well as those students who substantially use non-verbal communication, First Nations people, and those from culturally and linguistically diverse communities.



The project was produced in partnership and consultation with autistic people and the autism community. The project consisted of four phases over eight months:

### **Phase 1: Foundation phase**

Complete three tasks:

- an environmental scan, synthesising Autism CRC research projects conducted over the last decade (2013–2022)
- scoping reviews of literature across seven key themes

analysing inclusive education policies across every state and territory of Australia.

### **Phase 2: Implementation phase**

Conduct Australia wide empirical research through an online questionnaire and interviews with 5 key stakeholders groups including:

- autistic learners
- parents/caregivers
- siblings
- educators
- allied health professionals.

### **Phase 3: Analysis and synthesis phase**

- Drawing together key information from Phases 1 and 2.

### **Phase 4: Dissemination phase**

- Sharing key information through an Autism CRC white paper, publications, knowledge translation resources and presentations.

## How this white paper is set out

This white paper has four key sections:

- Section 1.** Provides a summary of an environmental scan that synthesises information from the educational body of research conducted by Autism CRC (2013–2022).
- Section 2.** Provides a summary of key findings from the data generated in the scoping research conducted in Phase 1 on seven themes across the international landscape. The aim being to help identify current gaps and provide recommendations for research, policy and practice that will help support autistic learners to flourish in their education. It also provides a review and analysis of current inclusive education policies across every state and territory in Australia.
- Section 3.** Provides a summary of overarching results from Phase 2 of the study – empirical research conducted nationwide with multiple stakeholders (through a survey and interviews) with a focus on identifying educational enablers and barriers for autistic learners and their siblings.
- Section 4.** Recommendations from this project for future policy, research, and practice are provided to support educational reform that promotes autistic learners flourishing within our school systems.

# Section 1: Autism CRC educational research 2013–2022: The school years

An environmental scan of Autism CRC research over the last 10 years is important to inform future research, policy, and practice Australia wide. This scan in conjunction with the outcomes of the scoping reviews, Australia wide inclusive education policy analysis and the REBAS empirical research helps provide a foundation for recommendations for future Australian education research.

## 1.1 Summary of Autism CRC educational research across the last 10 years – What can be learned?

A summary of Autism CRC education research conducted nationally is provided. This summary helps to inform what can be learned from this body of research over the last decade regarding limitations, gaps and recommendations that will help move autism educational research forward nationally into the future.

Across the last 10 years there were **five key focus** areas for Autism CRC **educational** research. These are summarised in Table 11.

**Table 11: Summary of Autism CRC educational research (2013–2022)**

Focus areas	Key areas of investigation
<p><b>A. Enhancing, teaching, &amp; the learning experience (classrooms of excellence)</b> 12 research projects</p>	<p>These research projects <b>focused on four key areas</b> of investigation:</p> <ol style="list-style-type: none"> <li><b>Literacy</b> including emergent literacy, shared book reading, predicting literacy outcomes, story times in libraries, written expression, and literacy support tools.</li> <li><b>Transitions</b> with a focus on teachers’ models of practice and transition out of school into employment.</li> <li><b>Collaboration</b> with education partners e.g., parents, autistic learners, educators, allied health.</li> <li><b>The classroom environment</b> e.g., acoustics, structured teaching approaches, models of practice.</li> </ol>
<p><b>B. Social emotional wellbeing &amp; school connectedness/engagement</b> 8 research projects</p>	<p>These research projects <b>focused on 4 key areas</b> of investigation:</p> <ol style="list-style-type: none"> <li>Multiple stakeholders’ views of Australian autistic learners’ <b>educational needs</b>.</li> <li><b>Navigating the social and social communication environment</b> at school (including software programs and robotics support).</li> <li><b>Novel approaches to supporting teachers and autistic learners</b> in schools (particularly rural and remote areas) and addressing challenges experienced implementing contextually fit approaches.</li> <li>Supporting wellbeing and connectedness.</li> </ol>
<p><b>C. Linking student experiences, developmental &amp; behavioural trajectories</b> 1 research project</p>	<p>A <b>6-year</b> longitudinal project linking autistic students’ academic outcomes to their <b>life experiences, wellbeing, and cognitive profiles</b>. One of the world’s largest and longest studies following autistic children over time. Data was collected from home, school and from some of the children/teenagers themselves including outputs investigating:</p> <ul style="list-style-type: none"> <li>Associations between autism characteristics and written and spoken communication skills in young autistic children.</li> <li>Extensive research into anxiety in autistic children, including school-based anxiety.</li> <li>Participation profiles of autistic children at home, school, community.</li> <li>Self-reported positive attributes and favourite activities of autistic children.</li> </ul>
<p><b>D. Adulthood research projects linked to educational research</b> 3 research projects</p>	<p><b>3 key longitudinal and short-term</b> research projects focused on transition from school to further education and employment.</p>
<p><b>E. Research knowledge translation</b> 3 research projects</p>	<p>A suite of <b>3 additional</b> educational research projects supporting knowledge translation research and the development of knowledge translation resources housed and freely publicly accessible - nationally and internationally on the InclusionEd website (<a href="https://www.inclusioned.edu.au/">https://www.inclusioned.edu.au/</a>).</p>

## 1.2 Methodological limitations

Methodological limitations identified by Autism CRC educational researchers are summarised in Table 12. These methodological limitations centred around nine key areas.

**Table 12: Methodological limitations of Autism CRC educational research (2013–2022)**

Key area	Examples
<b>Time</b>	<ul style="list-style-type: none"> <li>• <b>Time of year</b> research conducted that may limit participation in educational research.</li> <li>• <b>Time poor</b> participants and studies with lots of demands upon participants makes engagement challenging for autistic students, teachers, or family members.</li> </ul>
<b>Data collection &amp; measures</b>	<ul style="list-style-type: none"> <li>• Adoption of mixed method research that includes qualitative experiences of participants and incorporates child perspectives.</li> <li>• Difficulties consistently collecting data leading to missing data.</li> <li>• Understanding individual profiles beyond total scores on assessments results in limited descriptions of experiences.</li> <li>• Use of self-report measures (parents, teachers) without observations, meaning researchers unable to verify data provided.</li> </ul>
<b>Variable control</b>	<ul style="list-style-type: none"> <li>• Changing aspects of the classroom environment make it difficult to explore impact experimentally.</li> <li>• Limited use of control groups or other controls (e.g., book selection, task duration) limits the strengths of conclusions made.</li> </ul>
<b>Participant voice</b>	<ul style="list-style-type: none"> <li>• What teacher and student preferences for support are and how these might influence what is implemented within contextually fit, socially valid ways.</li> <li>• Limited studies reporting the perspectives of student means that critical insights into student experience are missing.</li> <li>• Exclusion criteria of studies results in samples with limited generalisability.</li> </ul>
<b>Sample size</b>	Small sample sizes make it difficult to generalise to a broader cohort and means that the results can't be explored by child factors (e.g., age, gender) or environmental factors (e.g., school type).
<b>Retention rates</b>	Dropout rates and need for contingency plans.
<b>Technology</b>	Challenges adopting different technologies in education environments or connecting remotely with schools can be problematic.
<b>Social validity</b>	It is not possible to know to what extent what happened during a study is representative of what would happen in a more typical week within the households/classrooms included.
<b>Training</b>	Training for teachers to implement research with fidelity.

## 1.3 What have we learned? Gaps in research and recommendations for future research

Table 13 provides recommendations for future research highlighted by this body of research.

**Table 13. Recommendations for future research informed by Autism CRC educational research (2013–2022)**

Key Topics	Research that:
<b>Co-production</b>	Is co-produced with autistic individuals, autistic community groups and autism community partners.
<b>Generalisation and research knowledge translation</b>	<ul style="list-style-type: none"> <li>• Balances generalisability and the need for application to diverse contexts/participants.</li> <li>• Investigates support, professional learning, skills, and confidence of educators.</li> <li>• Enables educators to proactively monitor factors that put autistic children at educational risk.</li> <li>• Applies socially valid experimental research methods to classroom environments.</li> </ul>
<b>Participants and contexts</b>	<p>Research that includes:</p> <ul style="list-style-type: none"> <li>• Hard-to-reach people – most in need.</li> <li>• Marginalised in multiple ways.</li> <li>• Broader diversity in participants and contexts.</li> <li>• Perspectives of children and caregivers.</li> <li>• Broader targets for participants to increase time- and cost-effectiveness of school-based interventions.</li> </ul>
<b>Research training</b>	Provides different professional learning options to support training and to help promote research knowledge translation.
<b>Linking data sets</b>	Considers pathways for how data each year feeds into next year and may predict student outcomes.
<b>Mental health, anxiety, &amp; wellbeing</b>	<ul style="list-style-type: none"> <li>• Improves knowledge and understanding of anxiety at school.</li> <li>• Investigates profiles of school anxiety in male, female, and non-binary autistic children and how they differ from non-autistic children.</li> <li>• Focuses on characterising and unravelling the interplay of risk and resilience factors for mental health difficulties.</li> <li>• Develops and evaluates psychological treatments for common mental health, health and sleep difficulties co-occurring with autism.</li> <li>• Identifies effective early support strategies to protect against later mental health concerns.</li> <li>• Includes reliable measures: <ul style="list-style-type: none"> <li>– for school participation for autistic students</li> <li>– for valid, and autism-considerate measures of school anxiety</li> <li>– with comparable multi-informant versions to gather reliable data on similarities and differences across settings and contexts.</li> </ul> </li> </ul>
<b>Curriculum areas, teaching practice, focused interventions</b>	<ul style="list-style-type: none"> <li>• Involves longitudinal research investigating literacy performance profiles in autistic students from primary into high-school years to enable early identification of students at risk of (persistent) literacy difficulties.</li> <li>• Includes other curriculum areas beyond literacy and further extends research that considers social emotional, wellbeing and behavioural support.</li> <li>• Is holistic in focus with critical reflection of inclusive practice and placement decisions.</li> <li>• Investigates sensory subtypes to inform tailored supports.</li> </ul>

Key Topics	Research that:
<b>Research design</b>	<ul style="list-style-type: none"> <li>• Adapts experimental research methods to ensure social validity in the school environment.</li> <li>• Involves more longitudinal studies.</li> <li>• Includes longer-term trials in classrooms with more diverse student groups and inclusion of more diverse measures of student outcome.</li> <li>• Considers utility of strategies for other groups of learners.</li> <li>• Explores optimal focus and frequency of prevention and early supports.</li> <li>• Supports different socioeconomic and geographical contexts e.g., rural, and remote schools.</li> </ul>
<b>Data Collection</b>	<ul style="list-style-type: none"> <li>• Co-develops a meaningful measure of participation for autistic students including self-rating scales.</li> <li>• Use measures suitable for autistic people, with findings that can be generalised to real-world contexts.</li> </ul>

## 1.4 Conclusion – Section 1

Section 1 has provided a summary of educational research conducted by Autism CRC over the last 10 years including limitations identified by researchers and recommendations for future educational research. The next section will consider information that is emerging from autism education research over the last decade more broadly, internationally, and nationally.

## Section 2: Scoping current international trends, limitations, and gaps in autism educational research and analysing inclusive education policies Australia wide

### 2.1 What is a scoping review?

A scoping review is a useful process that can help map existing relevant literature in a topic/s of interest (Arksey & O'Malley, 2005). This type of review aims to identify main sources and types of evidence rapidly and qualitatively, as well as summarise research findings and gaps on selected topics (Arksey & O'Malley, 2005). Scoping the literature in this way can review and synthesise multidisciplinary knowledge on relevant topics that help to inform future research, policy, and practice (Colquhoun et al., 2014). More recently scoping reviews have been defined as:

A type of evidence synthesis that aims to systematically identify and map the breadth of evidence available on a particular topic, field, concept, or issue, often irrespective of source (i.e., primary research, reviews, non-empirical evidence) within or across particular contexts. Scoping reviews can clarify key concepts/definitions in the literature and identify key characteristics or factors related to a concept, including those related to methodological research. (Munn et al., 2022, p. 950)

### 2.2 What was the focus?

To be genuinely inclusive, education systems need to implement policies and practices that reduce educational barriers to school success for diverse learners. Building on the success of the body of educational research conducted by Autism CRC, **it is therefore timely to scope, map, and synthesise relevant literature on topics that:**

1. Inform our understanding of autistic learners, including those with high and/or complex needs or who are marginalised in multiple ways
2. Identify gaps and limitations of autism educational research conducted to date
3. Identify enablers and challenges to inclusive educational practice for autistic and diverse learners
4. Analyse inclusive educational policies Australia wide.

Identifying key issues related to promoting autistic learner success and gaps in educational policy, research, and practice can inform the autism community and our education system nationally about recommendations to support the development of appropriately tailored inclusive research, policies, practices, and professional learning that promote autistic and diverse learners' success in schools.



## 2.3 Scoping review themes

Produced in consultation with autistic consultants, autistic community groups and other autism community end users, seven themes were identified as the focus for scoping reviews.

Each scoping review had an overarching focus on research questions related to:

### What are the enablers and barriers to autistic learners flourishing in their education?

Further research questions around enablers and barriers to siblings flourishing were also considered. Seven overarching themes were identified for the scoping reviews (refer to Figure 1) with each of the reviews considering topics related to each theme. The themes were:

1. Academic and learning considerations
2. Built environment and learning space design considerations
3. Student wellbeing considerations
4. Co-occurring considerations
5. Identity considerations
6. Family and community considerations
7. Inclusive practices.

Investigated across the seven themes (with specific relevant research questions developed for each theme), the overarching focus of the scoping reviews discussed in this white paper was to identify enablers and barriers to autistic learners' success in schools.

**Overall, in total 870 articles were reviewed across the seven themes.** It is important to note when articles had content with substantial relevance and overlap to more than one theme in the scoping reviews, the article was reviewed in relation to all relevant identified themes and counted towards the total number of articles mapped in the tables for that theme. Other articles with content that was more solely focused on one theme were only counted as relevant to that theme with links to other themes noted as part of the mapping process.

A supplementary file providing further information about the scoping review procedures and references is available upon request to the Autism CRC.

### 2.3.1 Inclusive education policy analysis – Australia wide

In addition to the scoping reviews, it was considered important to examine inclusive policy documents across the nation. This analysis identified relevant inclusive education policy documents publicly available across every state and territory. Additionally, it involved conducting a review and analysis of these inclusive education policy documents according to the UNESCO Guide (2017) and three other key considerations including:

- the social model of disability
- definition of inclusive education (CRPD/GC4)
- context

In addition to the 870 articles reviewed for the scoping reviews, a further 22 documents were reviewed for the inclusive policy analysis.

## 2.4 Theme 1: Academic and learning considerations

Learning is an important **universally** understood concept highlighting the critical role of education and educational success for children and families internationally. Despite the potential of autistic learning, they are a cohort of students who may experience challenges to educational success, with these challenges reflected in the most recent Australian Bureau of Statistics (ABS) data (2018) on Autism and Education. This national data reported **92.3%** of young autistic people attending school had experienced some form of restriction to their access to education because of the difficulties they had experienced in that context. In addition, **77.7%** reported difficulties they experienced at their place of learning (e.g., difficulty sitting, fitting in socially, learning, communication, and intellectual difficulties), while almost half (**45.9%**) indicated they needed more support or assistance at school than they were currently receiving. Furthermore, ABS data indicates this cohort of learners have poorer post school outcomes than other school leavers.

Taken together, these statistics highlight the critical nature of understanding how we can best support the academic success of autistic children through the identification of associated facilitators and barriers. To date, little research has considered the academic skill development and outcomes of autistic learners, with research instead focusing on areas such as social and communication development (Mire et al., 2023). The research that has been conducted has provided evidence of much higher rates of academic underachievement in autistic learners (Ashburner, et al., 2010; Keen et al., 2016). Although the number of studies investigating academic achievement, performance, and outcomes for this group of learners is growing, clear identification and clarification of the factors that influence academic success for autistic students remain harder to identify. This is particularly important given the long-term impact of academic achievement. That is, academic skills, outcomes and success are an important predictor of long-term outcomes for autistic students. As such, it is important to identify approaches to enhance academic support and promote achievement levels for this group of learners and help them flourish (Mire et al., 2023). It is timely therefore to “**scope**” the literature to help map what is known about the academic strengths and needs for this heterogeneous student population and what facilitates or creates barriers to success in their learning, academic achievement, and wellbeing.

**In total 132 articles were reviewed.** These articles addressed a range of topics linked to autistic learners and academic learning (see Figure 4).

The key research questions which helped focus the scoping review searches for this theme were:

**What academic and learning factors have been identified as enabling autistic learners’ educational success?**

**What academic and learning factors have been identified as creating barriers for autistic learners’ educational success?**

**Figure 4: Visual representation of topics captured by review of literature for Theme 1: Academic and learning considerations**

### Theme 1: Academic and learning considerations

- Literacy Focus – Reading, Writing
- STEM Focus – STEM, Science, Maths
- Languages
- Music
- General academic needs
- Giftedness/Twice exceptional
- Transitions
- Technology

This review identified research looked at academic and learning considerations that can have a positive or negative impact on autistic students thriving in schools.

- The review reports on the findings of **132** research articles published **in the last 10 years**. These are summarised into **eight** topics
- Several supports have been identified in research as **enablers to academic success** while a lack of appropriate supports for learning, the resulting increased anxiety and negative school climate were some **examples of barriers** that were identified
- Based on the findings of the **132** articles, recommendations for policy, research, and practice are made in Section 4.

## **2.4.1 Key findings Theme 1: Academic and learning considerations – What do we know?**

### **2.1.4.1 Enablers to autistic learners thriving – academic and learning considerations**

There were **132** papers identified that provided information on academic and learning considerations. The literature linked to this theme has mapped a range of strategies that have been successfully used to support the academic learning and curriculum content for autistic students. These are summarised in Table 14. It is noteworthy, however, that the number of research articles supporting the use of these practices varies depending on (a) strategy type, and (b) outcome. As such, additional research is required in some cases before these practices can be considered “evidence supported”. Commonly, for a strategy to be considered evidence supported the finding needs to be replicated by a minimum of two research teams, with the practice being found effective for multiple autistic people.

**Table 14: Strategies Identified as Enablers to Academic Learning for Autistic Students**

Strategies	Explanation
<p><b>Visual supports and concrete representations</b></p>	<ul style="list-style-type: none"> <li>• Picture-to-text matching</li> <li>• Text- picture modes</li> <li>• Sentence starters</li> <li>• Concept maps</li> <li>• Graphic organisers</li> <li>• Mnemonics</li> </ul>
<p><b>Technology-based instruction</b></p>	<ul style="list-style-type: none"> <li>• Use of technology using video modelling procedures, capitalises on visual processing strengths of autistic learners; are increasingly popular; used to complement teacher-led instruction in classrooms; often incorporate peer support.</li> <li>• Effectiveness of video-based interventions (VBI) now evident in research to teach academic areas of math, science, and English Language Arts (ELA) aligned with general education curriculum.</li> <li>• Technology-based self-modelling approaches can allow the student to select an appropriate prompt based on their current environment and subjective needs.</li> <li>• Value in autistic students participating in the planning and construction of their own blended digital media.</li> <li>• Online multiplayer games identified as useful inclusive resources within the classroom setting that enable opportunities for students to initiate and sustain social interactions.</li> <li>• Positive responses towards the use of technology. Different devices are widely used to support education, the more variety there is the greater the opportunities for students to explore their individual learning preferences.</li> <li>• Capacity of robots to provide unlimited repetition together with the students’ ability to manage the robots’ pace (via touch or speech) as key elements in reducing the students’ stress and anxiety, creating opportunities to achieve learning outcomes.</li> <li>• Technology is a useful tool to access multidisciplinary support regardless of geographical location and to help gain input into meeting the needs of autistic learners and support contextually fit professional learning.</li> <li>• Value for autistic learners of computer-assisted instruction and video-modelling support strategies.</li> <li>• Using computer-assisted instruction (CAI) can benefit autistic learners with intellectual disabilities in reading by supporting:             <ul style="list-style-type: none"> <li>– decoding and word identification</li> <li>– sentence construction</li> <li>– basic reading skills.</li> </ul> </li> <li>• Video-based instruction (VBI), specifically, point-of-view video modelling (POVM) useful in teaching maths and science. Helps autistic learners navigate the lessons and steps at their own pace, either replaying past steps, or advancing to new material allowing opportunities for individualised intensive supports while remaining in an inclusive classroom.</li> <li>• Supported eText (a type of computer assisted instruction) is useful. eText is text that has been changed to promote access to content areas by:             <ul style="list-style-type: none"> <li>– increasing font face, size, and contrast</li> <li>– reading text aloud via text to speech</li> <li>– clarifying concepts through hyperlinks to other digital pages</li> <li>– providing graphics and vocabulary definitions.</li> </ul> <p>Students:</p> <ul style="list-style-type: none"> <li>– enjoy access to support using eText</li> <li>– indicate a preference for books in a supported electronic format over traditional print-based books.</li> <li>– felt having the hyperlinks and coaches were most beneficial resources.</li> </ul> </li> </ul>

Strategies	Explanation
<b>Direct and explicit instruction</b>	<ul style="list-style-type: none"> <li>• Establishing explicit instruction and support for classroom demands and expectations.</li> <li>• Being able to anticipate and understand activities, schedules, and expectations improves students' ability to appropriately participate and respond to classroom demands.</li> <li>• Establishing routines and creating written schedules supports executive functioning challenges that may impede students' ability to plan and organise their schedules.</li> <li>• Specifically planning instruction to facilitate skill generalisation e.g., ample opportunities to practice skills across settings by integrating instruction throughout the school day, across contexts, and participants.</li> <li>• Direct teacher instruction, reciprocal questioning strategy, reading comprehension strategies, self-regulated strategy development (SRSD), priming, and modelling.</li> </ul>
<b>Behavioural support</b>  Note overlap with attention deficit hyperactivity disorder (ADHD) and visual focused strategies in the literature	<ul style="list-style-type: none"> <li>• Delayed-cue training</li> <li>• Fading</li> <li>• Simultaneous prompting</li> <li>• Match-to-sample procedures</li> <li>• If/then contingencies</li> <li>• Breaks</li> <li>• Reinforcements, use of reward</li> <li>• Homework routines</li> <li>• Verbal contracts</li> <li>• Use of calendars, planners, and reminders</li> </ul>
<b>Environmental adjustments</b>	Sensory and motor breaks, and reduction of external stimuli.
<b>Peer support</b>	Peer-mediated support and tutoring, educating peers.
<b>Interest based</b>	<ul style="list-style-type: none"> <li>• Advantages of enabling autistic learners to access their interests clearly evident when incorporated to support:               <ul style="list-style-type: none"> <li>– access to the curriculum and assessments</li> <li>– communication</li> <li>– motor skills</li> <li>– attention to detail</li> <li>– socialisation</li> <li>– independence</li> <li>– wellbeing.</li> </ul> </li> <li>• Most advantage evident in curriculum access and learning including:               <ul style="list-style-type: none"> <li>– their participation in classroom activities</li> <li>– independence and ability to gain intrinsic enjoyment from activities.</li> </ul> </li> </ul>
<b>Twice exceptional/giftedness</b>	Important to provide: <ul style="list-style-type: none"> <li>• curriculum flexibility</li> <li>• strength-based approaches</li> <li>• safe environment.</li> </ul>
<b>Collaboration</b>	Collaboration across a range of stakeholders.
<b>Additional resourcing</b>	Additional staff.

## 2.1.4.2 Barriers to autistic learners thriving – academic and learning considerations

Barriers/challenges influencing academic success were identified in the literature and are summarised in Table 15.

**Table 15. Barriers to Autistic Learners' Academic Success**

Barriers	Explanation
<b>Anxiety, social and other challenges</b>	Anxiety and social challenges were identified as particular challenges impacting learning. However, people were less likely to acknowledge some of the less familiar challenges (e.g., fine and gross motor) that can impact learning.
<b>Peer acceptance</b>	Peer acceptance of autistic learners and sense of belonging is a barrier to academic success.
<b>Behaviours of concern</b>	Behaviours of concern (previously known as challenging behaviours) experienced by students in the school environment were often due to needs not adequately being met. Some examples include leaving the school grounds, and aggressive outbursts.
<b>Lack of additional support</b>	Lack of additional staffing support in the classroom.
<b>Executive function challenges</b>	Executive function demands in the classroom and learning environment. Moreover, abstract thinking and social inferences made the middle years environments particularly challenging for autistic youth.
<b>School climate and resourcing</b>	<ul style="list-style-type: none"> <li>• School staff understanding of the autism spectrum, and how this knowledge was used or translated throughout the school environment. It was often reported that more professional development and training for all staff was needed to build awareness and support.</li> <li>• Recognition and support for the unique and diverse educational needs of students on the spectrum.</li> <li>• Building school capacity.</li> <li>• The need for appropriate levels of funding to properly resource support at a material, physical and human level.</li> </ul>
<b>Noise/sensory elements</b>	The impact of noise on the learning and wellbeing of autistic children is influenced by child-specific preferences, and the type or noise present. Moreover, negative perceptions of vocal stimming can be held by people within a school setting. This can negatively impact the wellbeing of autistic children.
<b>Strengths and special or focused interests</b>	In some instances, strengths can create a barrier to accessing the curriculum and learning. Limited research on successful strengths-based approaches.
<b>Educator uptake knowledge and understanding</b>	<ul style="list-style-type: none"> <li>• Educators often feel ill equipped to meet the needs of some students (e.g., twice exceptional/giftedness, behavioural or emotional challenges in the school environment).</li> <li>• Factors Influencing educator uptake of strategies included: <ul style="list-style-type: none"> <li>– academic support for autistic learners was often not based on the quality or quantity of research support of the strategy, or ensuring the selected strategy matched the children's needs.</li> <li>– spontaneous decisions made about what the child, or the class, needed on that day, at that time. This can be viewed as an adoption of a 'trial and error' approach for selecting and implementing strategies.</li> </ul> </li> <li>• Highlighted educators' response to needing to be flexible in their approach to supporting autistic learners and emphasises the implementation challenges in schools to being flexible and individualised.</li> </ul>

Research has previously highlighted the importance of parent-teacher communication in supporting an effective school placement. The research reviewed here highlighted five key barriers to parent-teacher communication and partnerships that influenced autistic learners' success at school (see Table 16).

**Table 16: Barriers to Parent-Teacher Partnerships**

What parents want	What teachers want	Shared parent/teacher perspectives	Home-school partnerships
More information about their child's education	Parents to respond to their written communication	Want genuine communication	School staff involved in parent-teacher interactions should provide well-defined roles for parents and teachers, with clear expectations for involvement delineated early in the relationship
To be aware of who their child is interacting with during the day	More face-to-face time with parents	Concerned about asking the other for more involvement	Sharing of strategies on how to explicitly share expectations, needs, and desires surrounding communication and partnerships on an ongoing basis. Might be provided through workshops.
To know about daily, weekly, and general progress	Parents to voice their concerns and provide feedback	Shared frustration that the other person does not implement their ideas. They attribute this resistance to a lack of confidence in their expertise.	Help to recognise, validate, and work with each other's strengths and challenges from a culturally responsive perspective
To hear about their child's strengths	Parental participation in conversations and mutual support	Value parental presence in the classroom, but teachers want parents to take on a more active role	Parents are concerned about communication content, but teachers are concerned about communication mechanisms. Both are concerned about the quality of communication.
To observe in the classroom	Educators felt there were more educational and allied health professionals supports available at their schools compared with parents	Parents to volunteer in the classroom	

## 2.5 Theme 2: Built environment and learning space design considerations

Within education, there is a growing interest in the relationship between learner success, the physical characteristics of the built environment as well as classroom and learning space design (Barrett et al., 2015). Recently, there has been increasing awareness of the impact spatial features have on learning success, wellbeing, and quality of life. However, how students access not only the physical learning environment but how the spatial characteristics and the design of the learning space influence their learning, wellbeing and success in those spaces remain under explored considerations.

The design of the physical space and learning environment are important considerations for autistic learners. For example, this group of learners have identified a range of factors that can negatively impact on their ability to function within the learning space and influence their success accessing and engaging with the learning (Mallory et al., 2021). Despite this, historically, the needs of autistic learners have not been considered when designing and refurbishing buildings, classrooms, and school spaces (both indoor and outdoor). However, a growing awareness of the importance of the built environment and learning spaces for autistic learners' success has generated increasing interest in the concept of "autism friendly" learning environments that promote inclusion, access, engagement participation and success. It is timely therefore to "scope" the literature to map what is known about elements of the learning environment (including the built environment and learning space design) that facilitate or create barriers to learning success and wellbeing for autistic learners. This may inform inclusive policy, research, and practice considerations for all learners and educators who use the spaces, and the built environment design professionals who procure them, moving forward.

**A total of 65 articles were included for review.** These articles addressed a range of topics linked to the built environment, learning space design, or considered both built environment and learning space design (see Figure 5).

**Figure 5: Visual representation of topics captured by Review of Literature for Theme 2: Built environment and learning space design considerations**

### Theme 2: Built environment and learning space design considerations

- Built environment
- Learning space design
- Built environment and learning space design and refurbishment



The key research questions which helped focus the scoping review searches for this theme were:

**What built environment and learning space design factors have been identified as enabling autistic learners' educational success?**

**What built environment and learning space design factors have been identified as creating barriers for autistic learners' educational success?**

This review identified research looking at built environment and learning design factors that can have a positive or negative impact on autistic students thriving in schools.

- The review reports on the findings of **65** research articles published **in the last 10 years**. These are summarised in relation to **three** topics.
- **ASPECTSS Design Index** (acoustics, spatial sequencing, escape space, compartmentalisation, transitions, sensory zoning, safety) was frequently cited as key considerations to enable the learning environment.
- Based on the findings of the **65** articles, recommendations are made for policy, research, and practice in Section 4.

## 2.5.1 Key findings Theme 2: Built environment and learning space design – What do we know?

### 2.1.5.1 Enablers to autistic learners thriving – built environment and learning space design considerations

Enablers linked to the built environment and learning space design are summarised in Table 17. A key finding generated across all the literature was the **importance of learning space design being fluid and flexible, inclusive to all while providing individualised measures of support.**

**Table 17: Built environment and learning space design enablers that promote autistic success**

Enabler	Explanation
<b>Variety</b>	Any school environment should be one with variety where there are a range of different learning environments that provide a range of choice and affordances to nurture as wide a range of students as possible.
<b>Structure</b>	<ul style="list-style-type: none"> <li>• The learning environment should be structured with clearly defined curriculum areas on display in designated areas and adequate storage to reduce visual clutter. Personal belonging storage is also advised.</li> <li>• Classroom space should be well defined, with distinct areas for independent work, group work, and leisure activities, and a separate area that autistic students can go to when they become overstimulated. Open plan multi-function spaces are not ideal.</li> <li>• Importance of visual timetables and clear labelling of materials.</li> <li>• Easily legible circulation routes and simple organisational layouts that support wayfinding and reflect sequential daily routines are suggested.</li> <li>• Social spaces require ample space to reduce feelings of crowdedness.</li> <li>• Respite areas for support staff should be provided.</li> </ul>
<b>Opportunity</b>	<ul style="list-style-type: none"> <li>• Provide more opportunities for greater student choice from among a range of different learning environments in a school setting.</li> <li>• There should be multiple opportunities for children to remain physically separate from, but visually connected to activities. This allows children to observe others and offers opportunities for passive social engagement without forcing social interaction.</li> </ul>
<b>Minimise distraction/stimuli</b>	<ul style="list-style-type: none"> <li>• Autistic students should be seated in an area where they have minimal distractions (which will vary from student to student and from classroom to classroom).</li> <li>• Visual distraction and noise are particularly important considerations for autistic learners.</li> <li>• Use of nonfluorescent lighting with hidden light sources and window treatments can improve attention and engagement of students with visual hyper-sensitivity.</li> <li>• Building materials should be easy to maintain, free of toxic substances and should not emit chemicals or gases.</li> </ul>
<b>Retreat/withdrawal</b>	<ul style="list-style-type: none"> <li>• Some spaces should allow for retreat from multiple stimuli providing physical, acoustic, and visual separation and promote feelings of safety and security.</li> <li>• A separate area that autistic students can go to if they become overstimulated is necessary.</li> </ul>
<b>Consideration to ASPECTSS Design Index</b>	ASPECTSS Design Index (Acoustics, Spatial sequencing, Escape space, Compartmentalisation, Transitions, Sensory zoning, Safety) was frequently cited as key considerations to enable appropriate environments.

## 2.1.5.2 Barriers to autistic learners thriving – built environment and learning space design considerations

Barriers identified in the literature are summarised in Table 18.

**Table 18: built environment and learning space design barriers influencing autistic success**

Barriers	Explanation
<b>Implementation challenge</b>	<p>Going from built environment and learning space design theory to implementation in practice to support autistic learners is a challenge. This is due to the following:</p> <ul style="list-style-type: none"> <li>• Australian building design standards need to consider a broader range of user abilities including neurodiversity, as this has significant implications for expenditure and ultimately design decisions during new building procurement and refurbishment.</li> <li>• Architects and designers are largely unfamiliar with autism inclusive design requirements due to lack of clear guidance and Australian standards.</li> </ul>
<b>Generalisable and flexible</b>	<ul style="list-style-type: none"> <li>• Developing built environment and learning space design models that are generalisable yet flexible enough to: <ul style="list-style-type: none"> <li>– support the heterogeneity of autistic learners</li> <li>– ensure stability and predictability of learning environments for the autistic learner to avoid unexpected changes and abrupt transitions.</li> </ul> </li> <li>• Educators often report on the difficulty of balancing and maintaining stability and flexibility as often conflicting needs that arise.</li> </ul>
<b>Underrepresentation</b>	<ul style="list-style-type: none"> <li>• More significant innovations in built environment and learning space design needed for autistic learners with complex needs (including personalised technologies enabling individuals to control and tailor aspects of their environment and new building materials) but underrepresented in research.</li> <li>• Tools and resources to facilitate new co-design methods or participation/observation of autistic students in the design process, need to be developed.</li> </ul>
<b>Competing attitudes</b>	<p>Two widely and competing disparate attitudes to designing for autism currently evident in the literature, neither adequately addressing the challenges experienced by the autistic learner:</p> <ul style="list-style-type: none"> <li>• <b>Sensory sensitive approach:</b> controlling the sensory environment to comfort and relax autistic people and thus facilitating skill acquisition.</li> <li>• <b>Neurotypical approach:</b> immersion of the autistic user in a typical environment with its conventional stimulations to encourage adaptation to the overstimulation found in the real world.</li> </ul>

### 2.1.5.3 Gaps identified

Gaps in the literature on the built environment and learning space have been identified:

- Most work within the field of design for autism is centred around schools that are purpose built for autistic students rather than inclusive or mainstream settings
- Considerations that do exist for project planning and research in schools only include functional aspects/organisational principles and not learning design to maximise the learning experience of autistic students and their wellbeing
- Limited literature exists that examines the developing role of the senses in relation to informing interior design and the architecture context of learning environments for autism
- There are no Australian documents for architects of learning environments that inform them on principles of design and evaluation for 21st century autism learning environments or how to include autistic students, parents or teachers in participatory design brief development or post-occupancy evaluation
- Literature that connects educational pedagogies and learning environments for autistic students is limited
- Very few case studies invite student perspectives more generally in learning environment design and minimal that included the voice of autistic students
- Majority of research concerning autistic students and their schooling environments, relies on data gathered from sources other than the students
- No advisory documents or professional development support to guide teachers, leaders, or school administrators in processes for consultation/participation with architects/designers when designing inclusive learning environments for neurodiversity or in post-occupancy evaluation
- Very few published known local examples of evidence-based best practice design of learning environments for autism
- In Australia indoor/outdoor learning spaces are becoming more popular. While evidence suggests that proximity to nature is beneficial for autistic individuals, to date no known study has yet examined the value of access to nature in built environments or more specifically in learning environments

## 2.6 Theme 3: Wellbeing considerations

In 1948, the World Health Organisation drew attention to the concept of wellbeing as an important element of a person's health, when they defined health as "a state of mental, physical and social wellbeing" (p. 100). While most people generally understand wellbeing as "a comfortable, happy, and healthy state of being, which depends on one's subjective experiences as well as living conditions" (Danker et al., 2016, p. 59), there is surprisingly not a uniform and widely accepted definition on how to conceptualise and define wellbeing (Vella et al., 2019). This makes measuring wellbeing problematic. Further complicating matters is the fact that terms such as flourishing, quality of life, wellbeing and mental health are often used interchangeably despite reflecting different concepts and informed by different philosophical traditions (Danker et al., 2016; Vella et al., 2019). This can create contradictions in research on the topic of wellbeing, however, despite this, it is now well accepted that wellbeing is a multidimensional concept linked to concepts such as:

- life satisfaction and positive affect
- developing one's potential
- quality of life and wellness (Cooke et al., 2016).

School can be a protective factor that supports students' wellbeing, particularly during adolescents. Supportive school environments can nurture important positive links between wellbeing, academic success, post school outcomes and quality of life indicators. Yet significant gaps in student wellbeing research remain, especially in relation to some student cohorts such as autistic learners. Increased risk to the wellbeing of autistic learners can result from the challenges they can experience in successfully accessing and navigating the school environment and their increased risk of mental health concerns such as anxiety and depression (Danker et al., 2016). It is therefore critical that we identify what more can be done in the school environment to nurture wellbeing for this group of learners. It is timely therefore to "scope" the literature to help map what is known about autistic learners and wellbeing and what may facilitate or create barriers to their learning success and wellbeing. This mapping process can also identify gaps in the literature that may inform recommendations for inclusive policy, educational research, and practice.

**A total of 212 articles were included for review.** These articles addressed a range of topics linked to wellbeing (see Figure 6).

**Figure 6: Visual representation of topics captured by review of literature for Theme 3: Wellbeing considerations**

### Theme 3: Wellbeing considerations

- General wellbeing (including mental health, anxiety, depression, psychiatric conditions)
- Social relationships/ social emotional competence
- School belonging/ connectedness
- Masking, camouflaging
- Bullying/ cyberbullying/ victimisation
- Self-regulation
- Interoception
- Trauma
- Sleep
- Burnout – parent, teacher
- Thriving/self-determination

The key research questions which helped focus the scoping review searches for this theme were:

**What aspects of wellbeing have been identified as enabling autistic learners' educational success?**

**What aspects of wellbeing have been identified as creating barriers for autistic learners' educational success?**

This review identified research looking at wellbeing factors that can have a positive or negative impact on autistic students thriving in schools.

- The review reports on the findings of **212** research articles published **in the last 10 years**. These are summarised into **11** topics
- **Anxiety and bullying experienced within educational contexts** were found to be **key barriers** to autistic learner success and **relationships and safe space were important enablers**
- Based on the findings of the **212** articles, recommendations for policy, research, and practice are made in Section 4.

## **2.6.1 Key findings Theme 3: Wellbeing – What do we know?**

### **2.1.6.1 Enablers to autistic learners thriving – wellbeing considerations**

A range of enablers to promoting autistic learners' wellbeing in education environments have been identified in the literature and are summarised in Table 19.

**Table 19: Enablers to autistic students' wellbeing in education**

Enabler	Explanation
<b>Mindfulness</b>	Mindfulness has had some positive results in supporting autistic students' wellbeing but still needs more evidence.
<b>Relationships/connections/belonging</b>	<ul style="list-style-type: none"> <li>Relationships with teachers important for student and parent wellbeing.</li> <li>Parent-teacher relationship very important to maintain and promote sense of connection and support student wellbeing.</li> <li>Parents and students should be involved in goal setting, Individual Education Program (IEP) meetings and, transition planning to increase success of implementing supportive wellbeing strategies.</li> <li>In order to effectively support wellbeing and effectively implement wellbeing strategies, teachers should respect parent concerns about their child and parents need to understand teacher constraints.</li> <li>Increased school connectedness and feelings of belonging are important protective factors for wellbeing.</li> <li>Schools need to provide security and support students to connect with, and be successful, in their relationship with autistic learners and in turn promote their wellbeing.</li> </ul>
<b>Safe spaces</b>	Creating a safe space for students in the school where they can go to decompress is an important enabler of wellbeing.
<b>Tailored adjustments</b>	<ul style="list-style-type: none"> <li>Tailored adjustments are necessary and beneficial for promoting autistic students' wellbeing and reducing anxiety.</li> <li>Supporting regulation is critical as the better regulated a student is, the more supportive of their wellbeing and the better they will perform in school.</li> </ul>
<b>In-school therapy programs</b>	Some in-school therapy programs have been utilised and show positive effects but need more evidence.
<b>Peer support/acceptance</b>	<ul style="list-style-type: none"> <li>Peer support is valuable for student wellbeing.</li> <li>Fostering a culture of acceptance for all, particularly peer acceptance, are crucial target areas for programs and supports aimed at improving the experiences, self-appraisal, and wellbeing of autistic learners in mainstream settings.</li> </ul>
<b>Masking/camouflaging</b>	<ul style="list-style-type: none"> <li>Learner authenticity (e.g., not having to mask or camouflage) is a wellbeing protective factor.</li> <li>While not supporting wellbeing in the long-term, being able to mask for specific occasions or events has been identified by learners as potentially helpful e.g., being able to get through school, get into university.</li> </ul>
<b>Self-determination/thriving</b>	<ul style="list-style-type: none"> <li>Environmental factors such as student directed transition planning instruction, time spent with peers and more time in general education were identified as predictors of higher self-determination.</li> <li>Self-concept supports shown to be effective in promoting self-determination for different populations of students that demonstrate overly negative self-concepts, such as students with learning disabilities.</li> <li>Provision of clear definitions, real-world examples, opportunities to choose whom students engage in a task with and utilising visual supports when teaching autistic learners promotes self-determination skills.</li> <li>Teaching skills such as problem solving, goal setting, choice making, and decision making come into play to contribute to both greater autonomy and enhanced self-determination.</li> <li>Promoting autonomy and psychological empowerment by purposefully identifying opportunities for choice-making and independent action, self-advocacy by teaching the student how to request help from peers when needed, and social valorisation by highlighting the student's strengths and fostering conditions in which peer relationships can grow and flourish.</li> </ul>
<b>Parent resilience</b>	Parent wellbeing is important for student wellbeing. Resilience has a mediating effect for parent burnout, which in turn supports student wellbeing.
<b>Social support for teachers</b>	Teacher wellbeing is an important factor to support student wellbeing. Social support was a helpful factor to reduce burnout and increase self-efficacy amongst teachers.

## 2.1.6.2 Barriers to autistic learners thriving – wellbeing considerations

A range of barriers influencing autistic students' wellbeing in education environments have been identified in the literature and are summarised in Table 20.

**Table 20: Barriers to autistic students' wellbeing in education**

Barrier	Explanation
<b>Anxiety</b>	<ul style="list-style-type: none"> <li>Autistic children experience high levels of anxiety in school settings, this is a result of a range of factors. Higher anxiety is associated with lower school attendance.</li> <li>Higher anxiety is linked to higher depression and poorer self-concept.</li> </ul>
<b>Lack of self-regulation support</b>	Difficulty with self-regulation can be linked to increased anxiety/depression and needs additional support in school.
<b>Limited support</b>	<ul style="list-style-type: none"> <li>Little support is given for mental health/wellbeing for students in school, autistic or not. More is needed for autistic students.</li> <li>Important to match students to suitable wellbeing strategies when possible.</li> </ul>
<b>Bullying/cyberbullying</b>	<ul style="list-style-type: none"> <li>Autistic learners report high levels of loneliness and bullying in school and through cyberbullying.</li> <li>Parents have many concerns about the damage bullying does to their child's mental health. Schools have not responded well to bullying in many cases.</li> <li>Attendance greatly affected by bullying.</li> <li>Bullying policies have not shown great success in many cases, with policies lacking the clarity and follow through required to be successful.</li> </ul>
<b>Environment/sensory</b>	<ul style="list-style-type: none"> <li>Some evidence mainstream schools may decrease autistic learners wellbeing in comparison to more specialised environments.</li> <li>School can be an inhospitable environment for many autistic learners in terms of the sensory experiences e.g., chaos and noise, which negatively influences wellbeing.</li> <li>A lack of adjustments in schools to sensory elements of the environment that can support wellbeing (such as changing the tone of the bell, staggering break times, light covers) have been identified.</li> </ul>
<b>Transitions</b>	<ul style="list-style-type: none"> <li>Transitions can be a difficult time for autistic learners and affect their wellbeing negatively, particularly moving between primary and high school where things change quite drastically. Lack of suitable support for transitions is a barrier.</li> </ul>
<b>Masking/camouflaging</b>	<ul style="list-style-type: none"> <li>Autistic girls or internalising autistic students can be overlooked. This means they are more likely to suppress their difficulties and camouflage.</li> <li>Delays in diagnosis because of masking and hiding autistic traits can mean wellbeing needs are not identified or addressed.</li> <li>Lack of recognition that masking can develop in response to trauma/feeling unsafe/unwanted that in turn impacts on wellbeing and adequately supporting wellbeing for autistic students at school.</li> <li>Lack of appropriate adjustments and increasing demands in high school significantly linked with higher need to mask and reduced wellbeing.</li> <li>There is a lack of awareness of the link between masking and negative mental health consequences/heightened wellbeing needs.</li> </ul>
<b>Mental health</b>	<ul style="list-style-type: none"> <li>Increased mental health concerns particularly in adolescents are not being adequately addressed.</li> </ul>
<b>School connectedness/belonging</b>	<ul style="list-style-type: none"> <li>Autistic children often experience lower levels of belonging and connectedness that impact on wellbeing and success in school.</li> </ul>
<b>Self-harm/suicidal ideation</b>	<ul style="list-style-type: none"> <li>Self-harm and suicidal ideation commonly begin in late primary school and high school and is much greater in autistic population than for non-autistic students, if adequate support for wellbeing not in place and monitored.</li> </ul>



Barrier	Explanation
<b>Sleep</b>	<ul style="list-style-type: none"> <li>• Sleep problems have a large impact on school and wellbeing.</li> </ul>
<b>Intellectual disability</b>	<ul style="list-style-type: none"> <li>• If not adequately supported, intellectual disability can have an even greater negative effect on wellbeing.</li> </ul>
<b>Trauma</b>	<ul style="list-style-type: none"> <li>• Trauma in an autistic population can be caused by different things than in the non-autistic population. Examples include haircuts, sensory or social aspects of the school environment. Trauma experienced both inside and outside of school can impact autistic students when at school.</li> <li>• Definitions and assessment tools for trauma are not tailored to autistic learners.</li> <li>• Trauma is highly significant in the autistic population.</li> <li>• Knowledge of trauma and autism is not comprehensive, and trauma is often viewed from a neurotypical lens.</li> <li>• Assessments need to be developed that can capture specific features of autistic trauma.</li> <li>• Trauma is a major barrier to wellbeing, so trauma prevention is important but often overlooked consideration due to autistic students experiencing trauma from different things to non-autistic students. Bullying can be a major source of trauma that impacts wellbeing and there is a lack of successful bullying prevention in schools.</li> </ul>
<b>Burnout</b>	<ul style="list-style-type: none"> <li>• Key stakeholder (educator, parent, autistic student) burnout is an issue that impacts student wellbeing.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Parent burnout can be a barrier to autistic child's wellbeing.</li> <li>• There is some confusion/debate about the definition of burnout, and this may affect study findings in this area.</li> <li>• Parent burnout is also linked to depression, and this can then be a barrier to parents supporting their child's wellbeing.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Teacher burnout can be a barrier to autistic student wellbeing.</li> <li>• Many teachers do not feel efficacious in their role with autistic learners, and this impacts their own wellbeing but also then their ability to implement strategies to support autistic student wellbeing.</li> <li>• Teacher burnout can influence teacher's ability to support autistic student wellbeing with mixed evidence to suggest greater experience with autism decreases teacher burnout or that specialist teachers have lower levels of burnout than mainstream classroom teachers.</li> <li>• Autistic learners 'seen as a threat' by some teachers that influences how they support the autistic learner and can be a barrier to the autistic learners' wellbeing in school.</li> </ul>
<b>Self-determination/thriving</b>	<ul style="list-style-type: none"> <li>• Parents who described their children as having severe/profound disabilities placed less importance on learning self-determination skills than did parents who described their children as having mild/moderate disabilities.</li> <li>• Children identified as having mild/moderate disabilities, fewer behaviours of concern, and spending more time in general education classes were considered to have greater self-determination capacity.</li> <li>• Need to develop homebased or family-delivered supports to enhance self-determination—beginning at an early age and continuing throughout children's schooling.</li> </ul>
<b>Relationships/social networks</b>	<ul style="list-style-type: none"> <li>• Autistic learners may overestimate their friendship circle which can impact wellbeing.</li> <li>• Autistic learners' experiences of the challenges navigating the social environment at school are linked to wellbeing.</li> <li>• Teachers may misinterpret behaviour of autistic learners, and this negatively impacts their relationship.</li> </ul>
<b>Professional development and learning/policy</b>	<ul style="list-style-type: none"> <li>• School psychologists do not feel they understand autism very well and would like more training so they can support their autistic students' wellbeing.</li> <li>• Teachers often feel ill equipped to support wellbeing of students.</li> <li>• Schools do not really understand how to implement the inclusion policies they are directed to follow, and inclusive policy has links to wellbeing.</li> </ul>

## 2.7 Theme 4: Co-occurring considerations

Autistic learners have diverse and heterogeneous learning needs. If these needs are not adequately addressed, this group of learners can experience significant challenges within the educational context that can result in poorer academic, social, and behavioural educational outcomes. Increased prevalence rates and better diagnoses have improved our awareness of many of the additional co-occurring characteristics or conditions (e.g., underlying medical issues, neurodevelopmental differences, language and communication concerns and mental health issues) autistic learners can experience (Lai et al., 2019). Research indicates that the prevalence of co-occurring conditions in autism is much higher than the incidence of these conditions in the general population (Rubenstein et al., 2018).

It is important that we have a good understanding of co-occurring conditions or characteristics that may impact on their learning and engagement and increase the complexity of their educational needs (Rubenstein et al., 2018). Considering the fact that co-occurring conditions can significantly influence the heterogeneity in autistic learners, a better understanding of these conditions may offer greater insight into how we can effectively support autistic learners in the educational context to ensure optimal outcomes. (Vargason et al., 2019). A better understanding and consideration of these co-occurring conditions may, for instance help inform educational adjustments, supports, and programming to ensure it can be tailored meet the more individual or unique needs of the autistic learners and maximise their learning success (Rubenstein et al., 2018). It is timely therefore to “scope” the literature to help map what is known about co-occurring conditions for autistic learners and how these co-occurring considerations may facilitate or create barriers to their learning and wellbeing. It is also important for us to identify gaps in the literature that may inform recommendations for inclusive policy, research, and educational practice.

**There were 174 articles included for review.** This scoping review considered literature in 4 key areas:

- (a) co-existing conditions
- (b) intellectual disability
- (c) communication
- (d) behavioural considerations.

These articles addressed a range of topics linked to co-occurring considerations (see Figure 7).

The key research questions which helped focus the scoping review searches related to this theme were:

**What co-occurring considerations have been identified as enabling autistic learners’ educational success?**

**Figure 7: Visual representation of topics captured by review of literature for Theme 4: Co-occurring considerations**

### Theme 4: Co-occurring considerations

- Co-existing conditions
- Intellectual disability
- Communication
- Behavioural considerations

## **What co-occurring considerations have been identified as creating barriers for autistic learners' educational success?**

This review identified research looking at co-occurring considerations that can have a positive or negative impact on autistic students thriving in schools.

- The review reports on the findings of 174 research articles published in the last 10 years. These will be summarised in relation to four topics
- Behavioural experiences within the school environment were identified as major barrier to school success for autistic learners as well as a lack of consultation and collaboration amongst all stakeholders including the student
- Based on the findings of the 174 articles, recommendations for policy, research, and practice are made in Section 4.

### **2.7.1 Key findings Theme 4: Co-occurring considerations – What do we know?**

There are co-occurring considerations that may influence an autistic learners' educational needs, the adjustments that are put in place to support them in their education and the collaborations that may need to occur to ensure their success in learning. It is also important to consider the complexity of co-occurring considerations that go far beyond what is listed here. It is important to highlight the intersection between this theme and other themes covered in the scoping reviews e.g., wellbeing including anxiety and depression. It is important to note that co-occurring considerations listed here do not necessarily relate to medically diagnosed conditions but fall into three main categories: (a) intellectual disability, (b) behaviours that are challenging in the school environment, and (c) communication needs.

#### **2.1.7.1 Enablers to autistic learners thriving – co-occurring considerations**

Enablers related to co-occurring considerations of autistic learners that were identified that could influence their success in school are summarised in Table 21.

**Table 21: Enablers identified relating to co-occurring considerations of autistic learners influencing their success in school**

Co-occurring consideration	Explanation
<p><b>When autistic learner also has an intellectual disability</b></p>	<ul style="list-style-type: none"> <li>• Engagement in lessons and experiencing learning subjects as fun and useful leads to better success in school.</li> <li>• Support and collaboration between parent, student, and teachers for transition to high school promotes success.</li> <li>• Parent-teacher connection critical to school success.</li> <li>• Meeting the autistic learners' sensory needs is very important to increase learning success.</li> </ul>
<p><b>Communication</b></p>	<ul style="list-style-type: none"> <li>• With extra support (e.g., exposure to language games and book reading), children with expressive vocabulary delay (especially those with family risk for dyslexia and receptive vocabulary delay risk factors) can achieve better literacy outcomes.</li> <li>• To support autistic learners school success, teachers need to be able to identify children's current language levels relative to expected levels.</li> <li>• Regular routine assessment for children identified at risk, may support school success.</li> <li>• Direct 1:1 'intervention' with a speech and language therapist (SLT) can improve all areas of language for older children with developmental language delays, regardless of gender, receptive language, autism status, or age.</li> <li>• Availability of direct speech language services for school-age children with developmental language delays, including older children and adolescents with pervasive language difficulties, leads to increased academic success.</li> <li>• Individualised shared reading materials that are responsive to diverse cultures and communities (e.g., ATSI) support academic engagement and participation.</li> <li>• More time on "real-life" activities and engagement in integrative projects (e.g., construction of theme-based wall stories, presentations to peers, etc.) at school leads to greater adaptive functioning.</li> <li>• Educators can create adapted reading materials to teach students about the unique aspects of their communities and expectations for full participation.</li> <li>• Increased language use including metaphor comprehension, literacy comprehension and expression, and targeting reading others' intentions and reciprocity can help reduce communication difficulties and facilitate participation at school.</li> <li>• Autistic children who have no spoken language or are minimally verbal benefit from parent education programs that provide them with more opportunities for communication and give parents the understanding to support their child's communication needs.</li> <li>• Structured and well-defined communication 'interventions' appeared to have a positive impact on school outcomes for autistic learners especially those with intellectual disability.</li> <li>• Learners' attempts to communicate are influenced by educator responsiveness highlighting the importance of training for personnel involved with the autistic learner.</li> </ul>
<p><b>Behaviour including those of concern, "can't do school", attendance, exclusion, and suspension</b></p>	<ul style="list-style-type: none"> <li>• Positive teacher attitudes are associated with school success.</li> <li>• Behavioural support 'interventions' can potentially be implemented in schools to enable autistic learner success.</li> <li>• Antecedent behaviour 'interventions' are the most common approach in schools and teachers believe they are best suited to the classroom environments.</li> <li>• 'Interventions' using natural agents (e.g., teachers or staff) that did not teach replacement behaviour, and that included student preferences all had significantly better effects than those that do not take student preferences into account.</li> <li>• Re-engagement with school occurred due to strategies such as creating autism-friendly environments, good quality relationships and an individualised teaching approach.</li> <li>• By promoting effective problem-solving skills and management of social interactions with others, schools also may be reducing students' risk of involvement with the juvenile justice system.</li> </ul>

## 2.1.7.2 Barriers to autistic learners thriving – co-occurring considerations

Barriers that were identified that could influence autistic learners' success in school that were related to the theme of co-occurring considerations of autistic learners are summarised in Table 22.

**Table 22: Barriers identified relating to co-occurring considerations of autistic learners influencing their success in school**

Co-occurring consideration	Explanation
<p><b>When autistic learner also has an intellectual disability</b></p>	<ul style="list-style-type: none"> <li>• Subject content can be challenging, hampering academic success.</li> <li>• Cognitive flexibility is a challenge for autistic learners with intellectual disability, influencing their academic success, generalisation of academic skills and movement from one activity to another.</li> <li>• Lack of support for autistic learners real-life skills is a barrier to post school success.</li> <li>• 'Interventions' generally assessed specific IQ levels, so may not be applicable to all cognitive levels.</li> <li>• Co-existing needs not always considered, with 'interventions' generally only targeting one condition, neglecting to address issues associated with another condition.</li> <li>• One size fits all solution often implemented - needs to be tailored to the individual.</li> <li>• Parents and children not being consulted on what they believe are the greatest challenges and problems being faced.</li> <li>• Teacher perceptions/preconceived perceptions appeared to have an impact on what they believed the child could achieve and the effort the teacher applied.</li> <li>• Lack of understanding of the link between motor difficulties associated with intellectual disability can be a barrier to academic success.</li> <li>• Strong link between social inclusion, wellbeing and school success that is often not adequately addressed.</li> <li>• A lack of Interdisciplinary/stakeholder communication that focuses on teachers and parents. There is a need more multidisciplinary communication to generalise skills and success.</li> <li>• Lack of understanding of intellectual disability by educators leads to barriers to support in school.</li> </ul>
<p><b>Communication</b></p>	<ul style="list-style-type: none"> <li>• Poor language skills put children at risk of academic failure, social emotional difficulties, unemployment, and poorer mental health in adulthood.</li> <li>• Teachers are less sensitive to language problems in late elementary school and co-occurrence of speech language challenges with other needs is commonplace.</li> <li>• Language problems at five can be predictive of language, literacy, and learning problems in late elementary school.</li> <li>• Shared reading materials are not individualised to be responsive to diverse cultures and communities e.g., ATSI.</li> <li>• Essential for teachers to identify only the most critical and feasible communication adjustments for supporting autistic students and complex communication needs in postsecondary settings.</li> <li>• Better understanding of the specific types and levels of supports to improve literacy outcomes of autistic students is needed through targeted assessment and multidisciplinary teams of speech-language pathologists, educators, and other professionals.</li> <li>• Lack of understanding of communication needs of autistic learner by personnel working with them.</li> </ul>
<p><b>Behavioural considerations</b></p>	<p>Presented in separate table below.</p>

**Table 23: Barriers identified relating to behavioural experiences and considerations of autistic learners influencing their success in school**

Behavioural experiences and considerations	Explanation
<b>Gender considerations</b>	<ul style="list-style-type: none"> <li>• Significant difference in the behaviours of children based on gender norms yet ‘interventions’ failing to address differences related to gendered social expectations.</li> <li>• Failure to identify the behaviours/needs of some children based on patterns that align with gender norms such as girls where it is noted that behaviour is often internalised.</li> </ul>
<b>School culture/consultation/communication</b>	<ul style="list-style-type: none"> <li>• School culture appears to be a significant motive/reason for behaviour- particularly internalising behaviours with a strong link to students feeling a lack of belonging/acceptance.</li> <li>• Not enough:               <ul style="list-style-type: none"> <li>– consultation with parents- behaviour maybe ‘okay’ at school but not home which has influence on schoolwork</li> <li>– communication with parents to understand what is going on outside of school that could be motivating the in-school behaviours.</li> </ul> </li> </ul>
<b>“Can’t do school”/attendance/exclusion and suspension</b>	<ul style="list-style-type: none"> <li>• Education stakeholders refer to ‘school refusal’ – however there is a realisation that this is anxiety/trauma based and is not the student refusing to go to school. Rather, they physically/mentally cannot attend school. Why the child is finding it challenging to physically attend school is not necessarily transferring to the research or translating to better understanding in schools.</li> <li>• Schools have attendance targets and, in some countries, will fine parents or send them to jail if their children do not attend. This creates massive pressure on parents to force their children back into school, even if they know this is not the right thing to do or could negatively affect their child’s mental health.</li> <li>• Autistic learners with co-occurring conditions more likely to miss school, resulting in poorer academic outcomes, increased anxiety, increased risk of experiencing “can’t do school”, poorer connection with peers.</li> <li>• Half days missed likely due to medical or therapy appointments.</li> <li>• Unmet needs, not providing accommodations and lack of collaboration are key reasons for breakdown in relationships between students, parents, and schools.</li> <li>• Bullying is a key factor in school avoidance.</li> <li>• More preventative and proactive approaches needed rather than waiting until crisis occurs.</li> <li>• Black students more likely to be excluded than white (America).</li> <li>• Students at high risk of exclusion if displaying aggressive behaviours at school.</li> <li>• Consideration to how school exclusion impacts behaviour and vice versa.</li> </ul>

Behavioural experiences and considerations	Explanation
Behavioural experiences in school settings	<ul style="list-style-type: none"> <li>• ‘Interventions’ are not first identifying the motivations behind the behaviour- if they do it is tokenistic and not targeting the motivation or what it is communicating. Communication needs or lack of communication is a common behavioural motive but not recognised in how behaviours are responded to.</li> <li>• Lack of understanding of what behaviour is communicating and how environment may be creating behavioural responses (both internalising e.g., anger and externalising aggression).</li> <li>• Lack of appropriate support for behavioural needs.</li> <li>• Lack of recognition of internalising behaviours in school settings.</li> <li>• Superficial/reactive responses to behavioural needs e.g., suspension rather than proactive supports.</li> <li>• No standardised criteria to define behaviours of concern.</li> <li>• Self-harm behaviours are common for autistic children who have difficulties in school.</li> <li>• Autistic children spend a lot of time in solitary activities in the playground.</li> <li>• Girls are more social (due to compensation from masking which allows them access to social groups) but more likely to internalise anger and self-harm rather than boys who will display behaviour that is more external such as harming a peer or throwing things, for example.</li> <li>• Overstimulation is a big reason for more behaviours of concern, as is withdrawing access to preferred items/activities.</li> <li>• If not adequately supported, behaviours experienced in the school environment can increase in intensity and frequency and become more challenging over time.</li> <li>• Lack of understanding of the variable nature of behaviour (e.g., sometimes more behaviour problems are seen at home than at school, usually around a safe person, or more seen at school where external demands are more challenging). Can lead to lack of success implementing appropriate supports.</li> <li>• Teachers do not feel they have time to create individualised visual supports.</li> <li>• Lack of culturally responsive strategies employed in schools, leading to poorer engagement, connections and increased behavioural needs.</li> <li>• Teachers see behaviour as the reason inclusion for autistic children breaks down. They say this is the biggest barrier to students’ engagement in education.</li> <li>• Behaviour of concern is seen more in learners in specialised school placements, who have less verbal language and intellectual disabilities.</li> <li>• Behaviour is more common when combined with psychiatric conditions.</li> <li>• Parents express needing more help from teachers to support the behavioural needs of their children because it is not affordable for them to access external support, but schools are under resourced and often lack capacity, understanding and training to provide this additional support.</li> <li>• Identifying reasons for behaviour is the most effective starting point and can change the strategies teachers use to ‘solve the problem’.</li> <li>• Specific ‘interventions’ such as functional communication training can be effective in promoting positive approaches to supporting students’ behaviour and school success, but staff need more knowledge and understanding of these approaches.</li> <li>• Children with increased demand avoidance type behaviours display more behaviours that challenge. Teachers do not have a good understanding of these behaviours and differing approaches that may be required.</li> <li>• Parents commented on how school experience has damaged a child’s mental health and had a detrimental effect on their behaviour.</li> <li>• Decreased quality sleep in children leads to a higher chance of behaviours of concern. Teachers need better understanding of the link between sleep and behaviour and how what can be done in the school environment to help manage sleep issues impacting on learning.</li> <li>• The evidence base for behavioural interventions is currently quite weak with many studies rated as poor quality and lacking effective translation to school contexts.</li> <li>• Inappropriate sexual behaviour in autistic children is usually due to a lack of understanding and a lack of appropriate sexual education.</li> </ul>

Behavioural experiences and considerations	Explanation
<b>General findings</b>	<ul style="list-style-type: none"> <li>• Interventions are generally conducted by interventionist/researcher or sometimes clinical health; infrequently conducted by teachers or parents.</li> <li>• ‘Treatments’ generally applied to boys.</li> <li>• Even when assessing efficacy/fidelity of interventions (e.g., teacher perspectives) children were rarely consulted.</li> <li>• Teachers commonly reported lack of knowledge, feeling underprepared, under resourced and over worked, therefore, could not effectively implement the ‘intervention’.</li> <li>• Intensive, individualised behaviour support programs mostly conducted in exclusionary/solitary settings- rarely conducted in inclusive setting in mainstream schools.</li> <li>• Very few studies conducted follow up measures.</li> <li>• Autistic children likely to have a higher number of co-occurring conditions such as ADHD, psychiatric conditions and physical health conditions that need to be catered for in school.</li> <li>• Psychiatric conditions co-occurring with autism related to worse school engagement.</li> <li>• Parents of autistic learners who had co-occurring conditions were significantly impacted.</li> <li>• Teachers felt concerned they did not have the knowledge to effectively teach students with behaviours of concern.</li> <li>• Tasks can be too overwhelming in school environment when dealing with additional conditions.</li> <li>• Students were often fearful of school environment.</li> </ul>



## 2.8 Theme 5: Identity considerations

The question of identity and factors influencing identity and identity formation have long been debated through the lens of political, scientific, and philosophical approaches (Côté & Levine, 2015). Different people use the term identity in different ways. “Ultimately, when discussing identity, we are referring to who we are and how the world sees us. Our identities are the multiple characteristics, both visible and invisible, that identify us as individuals and members of a group” (Osman, 2019, p. 8). Our identities shape our experiences and our views of the world and are important for shaping our relationships (Osman, 2019). There are also different factors that influence our identity – gender, sexuality, culture are just some examples. The ways in which these different identities are interconnected is referred to as intersectionality. Intersectionality often refers to the idea that “social categorizations like race, class, and gender create interconnected systems of oppression and discrimination” (Osman, 2019, p. 14). It is important therefore for us to develop a better understanding of the many and often intersecting factors influencing autistic learners’ identity.

The purpose of this theme is not to focus on a debate of different conceptualisations of identity. Instead, the focus of this theme is to “scope” the literature to map the many important considerations that may inform or influence identity formation and the intersectionality or multiple marginalities that many autistic learners can experience. It is essential for us to:

- Develop a better understanding of influences on autistic learners’ identity in schools
- Develop awareness of how intersectionality/multiple marginalities can occur and identify ways marginalisation can be avoided
- Identify what further is needed to recognise and nurture autistic learners’ identity and success in schools.

**A total of 183 articles were included for review.** These articles addressed some key topics linked to the theme of identity outlined in Figure 8.

**Figure 8: Visual representation of topics captured by review of literature for Theme 5: Identity considerations**

### Theme 5: Identity considerations

- Aboriginal and Torres Strait Islander
- Cultural/CALD influences
- Autistic identity
- Gender and sexual identity

The key research question which helped focus the scoping review searches for this theme was:

### **What factors related to identity need to be considered to promote autistic learners' educational success?**

This review identified research looking at identity factors that can have a positive or negative impact on autistic students thriving in schools.

- The review reports on the findings of **183** research articles published **in the last 10 years**. These are summarised in relation to **four** topics
- **Cultural, autistic identity, gender and sexuality identity considerations** for autistic learner success were identified
- Based on the findings of the **183** articles, recommendations for policy, research, and practice are made in Section 4.

#### **2.8.1 Key findings Theme 5: Identity – What do we know?**

There were four key topics linked to identity including:

- (a) Aboriginal and Torres Strait Islander identity
- (b) Cultural identity and Cultural and Linguistic Diversity (CALD)
- (c) Autistic identity
- (d) Gender/sexuality identity.

Considerations that relate to identity can inform enabling educational approaches to ensure autistic learners can flourish in school and are summarised in Table 24.

**Table 24: Identity considerations informing approaches which enable autistic learners to flourish in school**

Identity consideration	Explanation
<p><b>Aboriginal and Torres Strait Islander (ATSI) considerations</b></p>	<p>Understand and incorporate core values of inclusion and cultural sensitivity into education and care services; complete staff training on cultural sensitivity and apply it when interacting with First Nations peoples by understanding that:</p> <ul style="list-style-type: none"> <li>• Indigenous persons view disability as holistic, relational, spiritual, environmental, and collective in nature.</li> <li>• “Disability’ is a non-Indigenous concept, does not readily translate in Aboriginal languages and cultures; native language words describe various impairments, these words are not used in deficit/pejorative tense but instead used to facilitate their inclusion within their community.</li> <li>• Fundamentally inclusive attitudes towards autistic people are based on cultural values of acceptance and support of all community members.</li> <li>• Greater significance should be placed on connection to their community; community plays critical role in supporting Indigenous Australian families with autistic children; but there are gaps in the awareness and understanding of autism in communities.</li> <li>• Indigenous persons may have a different understanding of health and wellbeing.</li> <li>• Multiple caregivers from different generations may contribute to children’s wellbeing.</li> <li>• Respect families’ knowledge about their children.</li> <li>• There needs to be awareness of traumatic historical events (e.g., colonisation, dispossession, social injustices) and appropriate spiritual experiences (to avoid misinterpretation of these experiences as psychotic symptom i.e., anger, sadness, distrust).</li> <li>• Contemporary realities are shaped in myriad ways including the continuing legacy of the Stolen Generations of Aboriginal children removed by the state to institutional or foster care.</li> <li>• Presence, perspective, and lived experience are valid, meaningful, and necessary for shaping individual and collective cultural identity.</li> <li>• Allowing time is critical: “Our Aboriginal way has taught us to be still and wait. We do not try to hurry things up.” (NWC, 2021, p.7).</li> </ul> <p>“Intersectional inequality” was devised by Avery (2018) drawing on Culture is Inclusion Research and describes systemic inequality that ATSI people with disability experience – a group intersecting two marginalised populations – compared to other groups in the Australian population. This term is based on the concept of ‘double disadvantage’ referring to Aboriginal people with lived experience of disability.</p> <p>When thinking about education in relation to this term the following need to be considered:</p> <ul style="list-style-type: none"> <li>• Education does not necessarily respond to the unique circumstances of ATSI people with disability, rather activities/strategies are for broader ATSI populations by which people with disability may incidentally benefit.</li> <li>• Closing the Gap Framework targets do not acknowledge the impact of disability in attaining equality e.g., education policy area may focus on cultural inclusion, school attendance, literacy/numeracy, retention to year 12, but ignores inclusion for ATSI children with disability and the particular barriers they face in accessing education.</li> <li>• Unidimensional approaches targeting either disability or Indigenous disadvantage, but not both, are not working effectively.</li> <li>• Compartmentalised approach to education where programs for ATSI children run independently of programs for children with disability; as opposed to flexible, coordinated programs which are both culturally and disability inclusive.</li> </ul>

Identity consideration	Explanation
<b>Cultural and CALD considerations</b>	<ul style="list-style-type: none"> <li>• Limited spoken and written English of parent/s and issues accessing interpreters limits their capacity to be able to successfully access and participate in research and understand/engage in education systems. This may be misinterpreted as parent being intentionally passive.</li> <li>• CALD families may have unique cultural, structural, religious, family beliefs which impact accessing services and in their interactions with schools. Poorer awareness and use of disability services available to them.</li> <li>• Linguistic differences in how terms e.g., autism, delay, self-determination, are understood in different cultural contexts.</li> <li>• Experience of discrimination (racial and disability), stigmatisation, marginalisation, prejudice within extended family, community, and school.</li> <li>• Parents have love/pride in their autistic children and high expectations for them; are often grateful for opportunities offered to their children and benefitted when community-specific supports were available to them.</li> <li>• Parents sometimes felt that they should not ask for anything more from teachers/schools or felt they had no choice but to advocate for their children and their cultural community.</li> <li>• Autism diagnosis: less likely to be obtained for cultural reasons; logistics accessing services in remote location; must first listen to the needs of the communities and try not to impose any knowledge or information without their welcome or consent.</li> </ul>
<b>Autistic identity considerations</b>	<ul style="list-style-type: none"> <li>• Autism is integral to identity for many autistic people.</li> <li>• Having a strong positive autistic identity is beneficial for self-esteem and wellbeing.</li> <li>• Autistic people have advocated for an autistic culture, empowering the step of changing the narrative from stigma and deficit to a strong collective identity.</li> <li>• Informing a child of their diagnosis in a neurodiversity-affirming way can be very beneficial to developing a positive identity.</li> <li>• Autistic community is a very important factor in developing a positive autistic identity.</li> <li>• Being comfortable with an autistic identity increases personal wellbeing.</li> <li>• Autistic identity enables the development of self-compassion.</li> <li>• Autistic identity can be negatively impacted upon by: negative interpersonal relationships and interactions particularly with peers; challenges experienced accessing the school environment; unusual sensory reactions to the physical environment.</li> </ul>

Identity consideration	Explanation
<p><b>Gender, sexuality, identity considerations</b></p>	<ul style="list-style-type: none"> <li>• General awareness is needed to be sensitive and try to understand a particular person’s individual understanding of how they identify, rather than based on our own assumptions.</li> <li>• Autistic children may see gender and how it fits into their identity as different to the general population.</li> <li>• Important to develop better understanding of how we define gender and sexuality in school and how different people understand these words.</li> <li>• Teachers need to respect a person’s pronouns, name, and any changes of these.</li> <li>• New terms for sexuality/identity are increasingly being generated – education institutions have difficulty keeping up with changes.</li> <li>• Some overlap and confusion in multifaceted definitions e.g., between transgender and non-binary.</li> <li>• Many assessment measures regarding Gender Dysphoria have only been validated with non-autistic people.</li> <li>• Autistic people are much more likely to be gender and or sexuality diverse than non-autistic people, and experience greater levels of Gender Dysphoria.</li> <li>• Internalising and mental health challenges are higher in the autistic community.</li> <li>• Greater number of barriers for the autistic population e.g., at greater risk of bullying.</li> <li>• Affirming and connecting with peers is helpful.</li> <li>• Autistic teens receive poor quality sex education.</li> <li>• Autistic people are less likely to be experienced in relationships.</li> <li>• Need to understand how gender identity and or sexuality identity combined with autistic identity can affect school experiences.</li> <li>• Research suggests autistic learners assigned female at birth are more likely to be gender diverse than autistic learners assigned male at birth.</li> </ul>

## 2.9 Theme 6: Family and community considerations

Family and the autism community play a crucial role in advocating for, supporting and guiding autistic learners' success at school. Families are the primary social nucleus for their children, and it is the strong relationships nurtured with parents, siblings, extended family, and friends that help children develop a sense of belonging within their community (Losada-Puente et al., 2022). There are a range of factors that may impact on an autistic learner's family and their quality of life, lifestyle, wellbeing, and resilience, with the autism community playing an important role in supporting family resilience (Hayes et al., 2023). Investigating factors that influence positive relationships, family resilience, and quality of life that may influence the educational experiences of autistic learners and their siblings is therefore important. It is timely to "scope" the literature to map the many important family and autism community considerations that may inform or influence educational success for autistic learners and their siblings and promote resilience within autism community.

**Figure 9: Visual representation of topics captured by review of literature for Theme 6: Family and community considerations**

### Theme 6: Family and community considerations

- Family considerations
- Extended family considerations
- Siblings
- Geographic/ socio-economic considerations

A total of **80** articles were included for review. These articles addressed a range of topics linked to family and community (see Figure 9).

The key research question which helped focus the scoping review searches for this theme was:

### What family and community factors need to be considered to support autistic learners' educational success?

This review identified research looking at family and community factors that can have a positive or negative impact on autistic students thriving in schools

- The review reports on the findings of **80** research articles published **in the last 10 years**. These are summarised in relation to **four** topics
- **Family, sibling and extended family consideration for autistic learner and sibling success** were identified
- Based on the findings of the **80** articles, recommendations for policy, research, and practice are made in Section 4.

### 2.9.1 Key findings Theme 6: Family and community considerations – What do we know?

There were four key topics linked to family and community that were investigated: (a) family, (b) extended family, (c) siblings, and (d) geographic/socioeconomic influences. These considerations can inform development of enabling approaches in schools to allow autistic learners to flourish and are summarised in Table 25.

**Table 25: Family and community considerations that can inform enabling approaches in school that allow autistic learners to flourish**

Family/community considerations	Explanation
<p><b>Family and family wellbeing</b></p>	<ul style="list-style-type: none"> <li>• <b>Challenges with diagnosis</b> and experiences of denial versus acceptance of diagnosis.</li> <li>• <b>Juggling schooling and therapy</b>, and experiences of rejection and mistreatment.</li> <li>• <b>Importance of key relationships</b> including spousal support and other family members.</li> <li>• <b>Experiences with wider community</b> including rejection and isolation.</li> <li>• Important role of support groups.</li> <li>• Consideration to parental stress and quality of life including the influence of:             <ul style="list-style-type: none"> <li>– financial burden</li> <li>– behavioural and medical concerns</li> <li>– concerns about the future</li> <li>– depression</li> <li>– denial of the diagnosis</li> <li>– acceptance and religion</li> <li>– social interaction and challenges accessing/seeking support</li> <li>– information seeking</li> <li>– financial stress exacerbated as the COVID situation becomes long term.</li> <li>– <b>self-care needs</b> – parents and carers need to continue looking after themselves as well as all their children.</li> </ul> </li> <li>• <b>Caregiver strain</b> with highest rated items being worried about the child’s future and feeling tired or strained, followed by feelings of embarrassment, resentment, anger, and an inability to relate to the child.</li> <li>• Challenges with family and social relationships.</li> <li>• <b>Higher parental stress</b> when there are: poor quality interactions within the extended family; higher levels of expressed emotion; absence of child’s access to appropriate schooling; limited resources available in the parents’ environment.</li> <li>• <b>Parent resilience</b> influenced by struggles to cope with daily stressors, wellbeing (anxiety, worries), 24/7 parenting, sleep deprivation, exhaustion, prioritising child’s needs over own.</li> <li>• <b>Autism knowledge</b> including understanding autism prior to child’s diagnosis, and differences in their child and stereotypes of autism in media.</li> <li>• <b>Navigating information</b> including complexity and disconnect, difficulties accessing and preference for information sources tailored to the child’s and family’s specific needs.</li> <li>• <b>Discrimination and stigma</b> from extended family members and the larger community intensified parents’ feelings of shame and experiences of social isolation.</li> <li>• <b>Recognition that their families were unique</b>; did not consider them unusual; mothers accepted their families because others cannot be forced to understand or accept autistic children.</li> <li>• <b>Sense of urgency</b>, importance of early ‘intervention’ and the role of caregivers in influencing their child’s development.</li> <li>• <b>Unmet service needs</b> were quite high across all ages; high unmet needs for adolescents suggests a sensitive developmental period; in ‘early intervention’ unmet needs included advocacy, knowledge of rights, and access to support networks and the community.</li> <li>• <b>Link between socio-economic status and unmet service needs.</b> Family income significantly explained family access to services and the perceived helpfulness of early ‘intervention’ with higher SES predicting higher access and perceived helpfulness.</li> <li>• Families frequently highlight lack of resources/services.</li> <li>• <b>Positive Behaviour Support strategies developed collaboratively with parents</b> were more likely to be remembered and more likely to be implemented when fit with the family resources, priorities, and goals.</li> <li>• <b>Consider the family context and keep things simple when providing support.</b> There is a clear link between parent engagement when support focused on addressing family’s emotional wellbeing (e.g., feeling more confident and in control; becoming more relaxed; better understanding of behaviour).</li> <li>• <b>Willingness to try strategies:</b> parents were not always confident that strategies would work yet were willing to try them and this may act as a protective factor.</li> </ul>

Family/community considerations	Explanation
Siblings	<ul style="list-style-type: none"> <li>• Roles and responsibilities, different to what may be expected typically– caregiving and parenting; protective role; future concerns.</li> <li>• <b>Process of adjustment</b>, including learning and developing empathy and acceptance; learning strategies and how to support their sibling.</li> <li>• <b>Difficulties understanding</b>. Siblings, especially at a young age, not always able to understand the needs of their siblings with developmental disabilities, or the potential impact on parent’s health.</li> <li>• <b>Interpersonal experiences with others and between siblings</b> – negotiating ‘outside’ relationships; fitting in the family and being seen; sibling connections.</li> <li>• <b>Cultural differences in families</b>, caregiving expectations, and autism conceptualisations may influence roles, responsibilities and perceptions of siblings.</li> <li>• <b>Sibling care/love for autistic child; multiple and lifelong roles</b> – playmate, caregiver (at home and school), protector, advocate.</li> <li>• Experience both positive and negative feelings towards autistic sibling or about increased responsibilities.</li> <li>• Despite challenges (e.g., additional responsibilities, difficulties communicating and connecting with their siblings; different from other families), they <b>generally embraced their siblings</b> and adapted as a family.</li> <li>• <b>Accepted their autistic sibling</b> and could not imagine their family without their brother or sister the way they were. Describe positive personal characteristics (happy, fun, nice); take pride in their siblings’ accomplishments.</li> <li>• <b>Siblings emphasized general sensitivity</b>, empathy, compassion toward others because of their life experiences.</li> <li>• <b>Siblings are likely to benefit from ‘interventions’ not necessarily aimed directly and solely at them</b> i.e., improving sibling behaviours that challenge, treating parental mental health problems such as anxiety or depression, and promoting positive parent–child interactions, might all have benefits for sibling wellbeing and positive sibling relationships.</li> <li>• <b>Variability in sibling outcomes</b>: profile of the autistic child is associated with sibling outcomes, but an assumption that the more complex needs the child with autism, the poorer the outcomes for the siblings, may not hold true.</li> <li>• <b>Emotional tone of family important</b>. Beliefs, behaviours, and emotions within the family unit, may contribute to conflict in sibling relationships, as opposed to having a family member with an autism diagnosis per se.</li> <li>• Negative impacts on siblings: <ul style="list-style-type: none"> <li>– <b>Social relationships</b> – must sacrifice activities or plans; avoid interacting with people in the community and inviting peers to their homes.</li> <li>– <b>Burnout</b> related to greater responsibilities across multiple environments (e.g., school and home), limited appreciation from their autistic siblings, and occasional punishment (e.g., criticism) for attempting to help.</li> <li>– <b>Ongoing mental health</b>, anxiety, emotional difficulties.</li> <li>– Siblings of autistic individuals with more behaviours of concern had more behaviour problems themselves and more sibling relationship conflict.</li> <li>– Behaviour alone may not be a risk indicator for increased conflict in the sibling relationship.</li> <li>– <b>Impact of sibling gender</b>: female siblings socially expected to shoulder responsibility for caring for autistic child e.g., miss school, failing grades, help with housework, babysit when parents attend family functions.</li> <li>– <b>Female siblings perceived they undertook unfair household responsibilities</b>, received reduced parental attention, and tension between desired distance from and engagement with their families.</li> <li>– Responsibilities may occur more frequently when parents are tired, or during a ‘behavioural crisis’.</li> <li>– <b>Siblings often experienced shame from their peers</b>; more adverse social reactions or feelings of embarrassment; but as siblings age, embarrassment may wane and they become more worried about their autistic siblings’ future, potential bullying, employment, living and care arrangements.</li> <li>– <b>Impact of behaviours of siblings</b> – behaviours that impact non-autistic sibling include: aggression, idiosyncratic behaviours, and unpredictability; embarrassment and being ‘different’.</li> </ul> </li> <li>• <b>Sibling Needs</b>. Need opportunities to connect with others who have similar experiences i.e., peer-to-peer formal or informal social support.</li> </ul>



Family/community considerations	Explanation
<b>Extended family</b>	<ul style="list-style-type: none"> <li>• Highlighted importance of cultural influences and community/Country: <ul style="list-style-type: none"> <li>– <b>Cultures perceive disability differently</b> and what they believe are causes of a child’s ‘differences’</li> <li>– <b>Family connections important in parental decision-making</b> (e.g., child sent to school staffed with ATSI relatives/cousins)</li> <li>– <b>Multiple autistic family members across extended kin networks</b>; gain sense of connection; learn from other families; not feeling alone.</li> </ul> </li> <li>• Role of extended kin: <ul style="list-style-type: none"> <li>– Rejection or supportive extended family has an impact.</li> <li>– Maybe living with extended family.</li> <li>– Extended family can feel guilty not giving their own children enough attention.</li> <li>– Mothers did not want to rely on families all the time, they also want professional support and services.</li> <li>– Multiple caregivers in extended families; work with and connect everyone in the young person’s support system.</li> <li>– Grandparents, especially grandmother, may play a major role or even become primary carers.</li> <li>– Inconsistent support from grandparents and in-laws due to lack of awareness and understanding.</li> <li>– Poor quality interactions within the extended family heightened parental stress.</li> </ul> </li> <li>• Support groups made participants feel that they were not alone and provided a platform to share ideas and experienced-based knowledge.</li> <li>• Mothers more proactive about independently finding and supporting each other, whereas fathers do not tend to form support groups on their own.</li> </ul>
<b>Links to school</b>	<ul style="list-style-type: none"> <li>• Effective family-school relationships are strengthened when family diversity is both respected and valued and efforts are made to engage with and support all family members.</li> <li>• Independence, social functioning, school functioning, and participating in leisure activities are some quality-of-life indicators that parents and teachers must agree upon to ensure effective communication and goal setting.</li> <li>• Critical for the child’s success is the need for collaboration and communication between the parents and teachers.</li> <li>• School attendance is of high importance for both teachers and parents.</li> </ul>

## 2.10 Theme 7: Inclusive practices

Inclusive education is complex, multidimensional, and influenced by a range of different factors. To ensure autistic learners can thrive in their learning it is important to consider how inclusive policy translates to practice. Understanding how inclusive policies are translated into practice and the enablers and barriers to implementing inclusive practice from a range of different participants perspectives are critical to progressing inclusion in schools. It is timely therefore to “scope” the literature to map the many important enablers and barriers to inclusive practices to support autistic learners as well as identify links to other scoping themes discussed in this paper. This is important to identifying gaps in the current literature that may inform recommendations for inclusive policy, research, and educational practice now and in the future.

A total of **74** articles were included for review. These articles addressed a range of topics linked to inclusive practices across three key stakeholder groups e.g., **parents, educators, and students** (see Figure 10).

The key research questions which helped focus the scoping review searches for this theme were:

1. **What educational strengths of autistic learners are important for their learning in inclusive schools?**
2. **What educational needs do autistic learners identify as important in their learning in inclusive schools?**
3. **What barriers do autistic learners identify for their social and academic inclusion?**
4. **What enablers do autistic learners identify for their social and academic inclusion?**
5. **What educational strengths do teachers identify as important for their students learning in inclusive schools?**
6. **What educational needs do teachers identify as important in their students learning in inclusive schools?**
7. **What barriers do teachers identify for their students’ social and academic inclusion?**
8. **What enablers do teachers identify for their students’ social and academic inclusion?**
9. **What educational strengths do parents identify as important for their child’s learning in inclusive schools?**

**Figure 10: Visual representation of topics captured by review of literature for Theme 7: Inclusive practices**

### Theme 7: Inclusive practices

- Student perspectives
- Educator perspectives
- Parent perspectives
- Multiple stakeholder perspectives
- Reviews

10. What educational needs do parents identify as important in their child's learning in inclusive schools?
11. What barriers do parents identify for their child's social and academic inclusion?
12. What enablers do parents identify for their child's social and academic inclusion?

This review identified research looking at inclusive practices that can have a positive impact on autistic students thriving in schools.

- The review reports on the findings of **74** research articles published **in the last 10 years**. These are summarised in relation to **four** topics
- Ten key enablers to inclusive practice for autistic learner success were identified
- Based on the findings of the **74** articles, recommendations for research, policy and practice are made in Section 4.

## 2.10.1 Key findings Theme 7: Inclusive practices – What do we know?

### 2.1.10.1 Enablers to inclusive practice

Ten facilitators, supports, adjustments that enabled inclusive practice were identified and are summarised in Table 26.

**Table 26: Facilitators, supports, and adjustments enabling inclusive practice**

Facilitators, supports, adjustments	Explanation
<b>Positive teacher characteristics</b>	<ul style="list-style-type: none"> <li>• Relatedness, active listener, firm, fair, flexible.</li> <li>• Ability to provide a structured, calm classroom.</li> <li>• Helpful, engaging and possessing good classroom management skills.</li> <li>• Use of approaches that model and create a culture of respect around interactions with students with complex communication needs.</li> <li>• Deep understanding of autism and individual student needs.</li> <li>• Flexible pedagogical approach and implementing strategies carefully, not assuming that a strategy can be used ubiquitously with every autistic learner.</li> <li>• Know, consider, and valorise students' interests, passions and strengths in practice and learning to increase self-confidence and personal engagement.</li> </ul>
<b>Peer support and grouping peers for learning</b>	<ul style="list-style-type: none"> <li>• The type of groupings offered (e.g., small, 1-1, peer support, whole class) need to be flexible and reflective of the varied needs of the student cohort in a specific school at any given time.</li> <li>• Due to the heterogeneous nature of neurodivergence, there may be conflicting support needs within a neurodivergent peer support space which may cause difficulty within a peer group.</li> </ul>
<b>Adjustments</b>	<ul style="list-style-type: none"> <li>• Additional time to complete work.</li> <li>• Adjustments targeting instructional strategies and learning accommodations.</li> </ul>
<b>Preference for quiet classes and environments</b>	Environment considerations - adequate quiet times/spaces for individual students.
<b>Technology supports</b>	<ul style="list-style-type: none"> <li>• Access to a range of technology supports so there is minimal requirement for handwriting.</li> <li>• Assistive technology, such as computers with voice recognition software for students with various communication needs.</li> </ul>
<b>Smaller classes</b>	<ul style="list-style-type: none"> <li>• Smaller class sizes, in that this affords the teacher time to build relationships and be able to help each student.</li> </ul>
<b>Future goals and ambitions</b>	Focus on future ambitions of students.
<b>Whole school approach</b>	<ul style="list-style-type: none"> <li>• Whole school approach to target bullying.</li> <li>• School-based interventions could focus on the whole-school system to increase understanding of autism and acceptance of diversity, to promote a better person-environment fit for autistic learners, building on strengths and valuing differences rather than simply reacting to problems as they arise.</li> </ul>

Facilitators, supports, adjustments	Explanation
<b>Collaboration</b>	<ul style="list-style-type: none"> <li>• Need for collaborative approach between families, therapists, and teachers. Need for ongoing training and to support education assistants and teachers to use strategies that support success. Community attitudes are also important.</li> <li>• School staff need to listen to and value parents.</li> <li>• Need for a rural parent information service to provide opportunities for parents to collaborate with multi-disciplinary support and information.</li> <li>• Neutral and respectful spaces for parents and allied health professionals to meet with teachers for collaborative planning.</li> </ul>
<b>Effective education supports at school</b>	<ul style="list-style-type: none"> <li>• Utilise school resources and support, implement suitable adjustments.</li> <li>• Provide support for individual learning needs, structure, and routine at school.</li> <li>• Support confidence and coping, and provide quiet, relaxed, and safe school environments.</li> <li>• Recognises the unique, diverse, and heterogeneous needs of students.</li> <li>• Ensures social-emotional needs are a priority.</li> <li>• Builds school capacity to translate research and knowledge into practice.</li> <li>• Implements whole of school approach, multi-tiered approach, fostering a collaborative stakeholder voice approach.</li> <li>• Provides visual supports, modelling, reinforcement, prompting, and response interruption and redirection and visual tools such as reminders, schedules, and timers.</li> <li>• Implements social support services and programs to facilitate inclusion.</li> <li>• Ensure there is a balance between teaching social skills formally and letting them develop naturally through exposure.</li> <li>• Take an interest in student interests, having one-on-one time, providing safety, being patient, positive feedback, and compliments.</li> <li>• Assigning autistic students' jobs or responsibilities was the most salient strategy mentioned for promoting inclusion.</li> <li>• Creates an environment with predictable patterns and consistency, for example establishing routines, having clear expectations, and using consistent language.</li> <li>• Considers the physical classroom environment, such as space for movement, purposeful seating arrangements, and considered proximity to the teacher.</li> <li>• Identifies environmental factors that may represent triggers for anxiety which can impact on aspects of students' school experience.</li> </ul>
<b>Reinforcing strengths</b>	<ul style="list-style-type: none"> <li>• Reinforcing strengths at school.</li> <li>• Praise, encouragement and rewards, interests focus, and strength-based learning.</li> <li>• Teachers recognising strengths and abilities.</li> <li>• Choice and flexibility in activities.</li> </ul>

## 2.1.10.2 Barriers to inclusive practice

Seven key barriers to inclusive practice were identified and are summarised in Table 27.

**Table 27: Barriers to inclusive practice**

Barrier	Explanation
<b>Teacher approach</b>	<ul style="list-style-type: none"> <li>• Teachers too strict, inflexible, raising voices.</li> </ul>
<b>Isolation/loneliness</b>	<ul style="list-style-type: none"> <li>• Autistic learners experience isolation by peers but are also isolated physically and academically by some of the teaching practices and approaches used for curriculum delivery.</li> <li>• Bullying and teasing.</li> <li>• Self-imposed social isolation.</li> <li>• Lack of programs to support social interaction and friendship.</li> <li>• Data indicate pervasive stigmatisation of children and their mothers and systematic failure of all sectors of NSW education system to meet policy promises of inclusion.</li> <li>• Social, emotional, and behavioural challenges were the greatest barrier to utilising strengths at school.</li> </ul>
<b>Adjustments</b>	<ul style="list-style-type: none"> <li>• Inconsistency in personal adjustments and accommodations.</li> <li>• Intense workloads and too much homework.</li> <li>• Lack of modifications and adjustments at school.</li> <li>• Lack of support, resources, and funding at school.</li> <li>• Interests, needs and learning styles not accommodated.</li> <li>• Lack of awareness of and opportunity to develop strengths.</li> </ul>
<b>Environment</b>	<ul style="list-style-type: none"> <li>• Noisy environments, auditory sensory overload.</li> <li>• Disorganisation of learning environment.</li> <li>• Social anxiety and social pressure arising from the unpredictability and intensely social nature of the mainstream environment.</li> <li>• Barriers related to the school environment and culture: lack of awareness, acceptance and understanding of autism at school, noise, distractions and overstimulation, lack of structure.</li> <li>• Crowding, limited opportunities for movement, curriculum demands and changes in routine.</li> </ul>
<b>Identity</b>	<ul style="list-style-type: none"> <li>• Autistic high school girls may be more likely to view the impact of autism on their high school experience as negative compared with autistic high school boys. May be intertwined with girls being more likely to camouflage their autistic traits due to social pressures that are specific to women and girls.</li> <li>• LGBTIQ+ autistic youth may be more likely to view their peers as negatively contributing to their high school experience than autistic youth who do not identify as LGBTIA+.</li> <li>• A lack of acceptance of intersectional identities can be a barrier to effective, inclusive peer groups.</li> </ul>
<b>Collaboration</b>	<ul style="list-style-type: none"> <li>• Home- school relationships/ partnerships/collaboration.</li> <li>• Lack of trust when there is inadequate, reactive, and inconsistent communication from schools and other professionals.</li> <li>• Inconsistencies between school and home expectations.</li> </ul>
<b>Funding/resourcing</b>	<ul style="list-style-type: none"> <li>• Lack of funding for education assistants.</li> <li>• Lack of appropriate resources and equipment particularly for autistic students.</li> <li>• Lack of time to provide additional help to autistic children, particularly in older grades.</li> <li>• Lack of continuity of services, inconsistencies in the use of strategies across the school day influenced by lack of funding and resourcing to support fidelity.</li> </ul>

## 2.11 Scoping review literature: methodological limitations and recommendations for research summary

### 2.11.1 Methodological limitations

Common research methodological limitations across all scoping reviews are described in Table 28.

**Table 28: Summary of research methodological limitations from scoping reviews**

Topic	Description
<b>Geographical location</b>	US-centric research articles and reviews.
<b>Research design</b>	<ul style="list-style-type: none"> <li>• Mostly qualitative.</li> <li>• Limited mixed methods.</li> <li>• No in-depth research designs (such as narrative, ethnographic).</li> <li>• Limited or lack of post-intervention data.</li> </ul>
<b>Participants</b>	<ul style="list-style-type: none"> <li>• Lack of diversity within participants e.g., intersectionality, multiple marginalities, hard to reach participants, gender, sexuality, identity, geographical location, race, culture, ethnicity, minimally verbal, older and younger children, intellectual disability, low socio-economic status.</li> <li>• Small sample sizes.</li> <li>• Most autistic learners involved in studies were males with average/above average academic performance.</li> <li>• Lack of diversity in stakeholders.</li> <li>• Intersectionality/multiple information not often provided or identified.</li> <li>• More student perspectives needed.</li> <li>• More sibling perspectives needed.</li> <li>• Built environment professionals and representatives from government infrastructure procurement missing.</li> </ul>
<b>Measures</b>	<ul style="list-style-type: none"> <li>• Measures not standardised for autistic populations.</li> <li>• Lack of assessment and evaluation that responds to diversity.</li> <li>• Low ecological validity.</li> </ul>

### 2.11.3 Recommendations for future research

Recommendations for research drawn from the scoping reviews are described in Table 29.

**Table 29: Summary of recommendations for research from scoping reviews**

Topic	Explanation
<b>Academic/ curriculum areas</b>	<ul style="list-style-type: none"> <li>• Research across broader academic areas and application of strategies across a range of academic/curriculum areas.</li> <li>• Investigate how challenges in one subject may influence another.</li> <li>• Link between transitions and academic success.</li> <li>• What effect academic needs has on autistic learner's next steps after school – e.g., careers/university.</li> <li>• Students' acquisition of social or multimodal literacy skills through engagement with blended digital media creation.</li> <li>• Understanding of which modifications of teaching materials are most appropriate for autistic learners.</li> <li>• Investigation of what best supports autistic learners in different subject areas.</li> </ul>
<b>Classroom based research</b>	<ul style="list-style-type: none"> <li>• Test practices in a classroom setting to see if they translate from 1:1 study setting.</li> <li>• Post-occupancy evaluations of classrooms and school buildings that include observations and stakeholder perspectives including autistic students.</li> </ul>
<b>Research design</b>	<ul style="list-style-type: none"> <li>• Larger scale studies with bigger samples.</li> <li>• Longitudinal studies to follow student progress.</li> <li>• Randomised control trials (RCTs) for specific 'interventions'.</li> <li>• Qualitative research to get a deeper insight into autistic learners/teachers/parents' views.</li> <li>• More mixed methods research.</li> <li>• Higher ecological and social validity research.</li> <li>• Follow-up post 'intervention' data.</li> <li>• Design-based research to explore local problems with key stakeholders.</li> <li>• Social justice approaches that examine individuals and systems.</li> </ul>
<b>Participants</b>	<ul style="list-style-type: none"> <li>• Greater focus on younger and older children.</li> <li>• Data collection that accounts for gender/sexuality diversity beyond male/female binaries.</li> <li>• Increased diversity in participants e.g., intersectionality, multiple marginalities, hard to reach participants, gender, sexuality, identity, geographical location, race, culture, ethnicity, minimally verbal, older and younger children, intellectual disability, low socio-economic status. Multiple stakeholders voice.</li> <li>• Student voice at the intersection of autism and other disabilities, cultures, identities, and complexity in needs.</li> </ul>
<b>Geographical location</b>	<ul style="list-style-type: none"> <li>• More geographically diverse research e.g., internationally, nationally, regional, rural, and remote.</li> </ul>
<b>Built environment &amp; learning space</b>	<ul style="list-style-type: none"> <li>• Effects of built environment and learning space design on autistic learners with complex needs.</li> <li>• Development of effective co-design practices with students and their teachers for built environment design.</li> </ul>
<b>Teacher practice</b>	More emphasis on teacher's current practices that work well for their autistic students.
<b>Student views</b>	How autistic children feel about learning particular skills/subjects.



Topic	Explanation
<b>Navigating social contexts</b>	While most educators understand the importance of social interactions in the learning process, studies needed regarding the association between social interaction behaviour patterns and the development of embodied social presence, that eventually lead to effective learning.
<b>Wellbeing</b>	<ul style="list-style-type: none"> <li>• Anxiety/wellbeing studies.</li> <li>• Trauma and autism.</li> <li>• Burnout – teacher, parent/carer, student.</li> <li>• Masking/camouflaging studies.</li> <li>• Bullying, harassment, and discrimination based on gender and sexuality.</li> </ul>
<b>Measurements</b>	<ul style="list-style-type: none"> <li>• Assessments and measures with autistic validity.</li> <li>• Retention/academic/wellbeing data on autistic students who also identify as gender/sexuality diverse.</li> </ul>
<b>Additional supports needed for educational success</b>	<ul style="list-style-type: none"> <li>• Behaviour support research.</li> <li>• Communication support research including in relation to student communication needs, as well as communication between stakeholders, and teacher-parent communication.</li> <li>• Built environment design and evaluation support research.</li> </ul>

## 2.12 Analysis of inclusive education policies across every state and territory of Australia

(Analysis conducted by and reported on by authors Carrington, Mavropoulou, and Nepal)

Inclusive educational policies are pivotal in informing the successful development of inclusive education environments and practices that allow all learners to flourish and be successful in their education. While overarching international policies for inclusion have been developed by organisations such as UNESCO, how these are translated into inclusive educational policies in different countries differs substantially and the extent to which inclusion is identifiable in these policies is highly variable internationally (Hardy & Woodcock, 2015). There is evidence of a range of differing, contrasting and inconsistent approaches to inclusion within and across different inclusive policies worldwide (Hardy & Woodcock, 2015). At a national level, it is timely therefore to complete a review and analysis of inclusive education policies and documents across the different states and territories of Australia to help focus our attention on the need for more “overt and systematic policy support for inclusion in school settings” (Hardy & Woodcock, 2015, p. 142) and the gaps evident in current policies across the nation.

**Therefore, in addition to the seven themes identified as the focus of the scoping reviews it was important to also conduct a review and analysis of inclusive education policies across every state and territory of Australia (Figure 11).**

### 2.12.1 Background

Since the development and widespread ratification of the United Nations Convention on the Rights of Persons with Disabilities (CRPD) (United Nations, 2006), education systems around the world are reconsidering the ways in which students with disabilities have been traditionally served. The focus on inclusive education in the CRPD has led many countries to review their education policies and systemic efforts to make schooling more inclusive for students with disability and other marginalised students. Australia’s national legislation (Disability Discrimination Act 1992, Disability Standards for Education 2005) has affirmed the right of learners with a disability to access inclusive education, however state policy reviews and research have raised concerns about the misalignment between inclusive education policy and practice (Mavropoulou et al., 2021). Nationally, the Australian Disability Standards for Education (Australian Government, 2005) states that students with disability are entitled to enrol in their local school and access education on the same basis as their peers without disability. In Australia’s Disability Strategy (2021-2031), Policy Priority 2 is to build capability in the delivery of inclusive education to improve educational outcomes for school students with disability (Australian Government, 2021, p. 8).

In this analysis, the definition of policy used is that of Cranston and Kimber, being: “a deliberate strategy, determined at a government or system level, to guide decisions and actions, to commit resources in support of a preferred set of values and ideologies in order to achieve particular outcomes” (2010, p. 16). Of importance, however, are Considine’s words that “(p)olicy is a

Figure 11: Visual Representation of Review and Analysis of Inclusive Education Policies

#### Inclusive education policy analysis – Australia wide

- Australian Capital Territory
- New South Wales
- Northern Territory
- Queensland
- South Australia
- Tasmania
- Victoria
- Western Australia

deceptively simple term which conceals some very complex activities” (1994, p. 2). To assist in addressing the complexity of this policy analysis, the thinking of Kozleski et al. (2014) has been adopted, widening focus from the identification of students with disability and other marginalised groups to the “local context, history, and cultures” (p. 235), and the broader structural inequalities that advantage “some children” and disadvantage others. This analysis has broad focus from particular groups of students who are “in need of intervention” (p. 242) to considering “power and privilege” (p. 239) and the dominant culture of the education system as a whole.

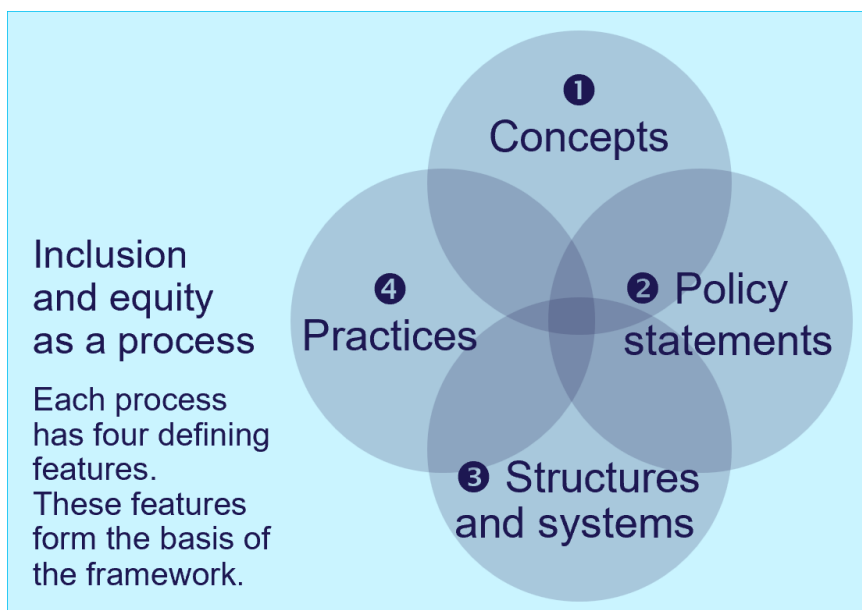
This focus aligns with UNESCO (2017, p. 13) which calls on governments to see individual differences “not as problems to be fixed, but as opportunities for democratising and enriching learning”. UNESCO (2013) establishes a national education policy as the articulation of “the main goals and priorities pursued by the government in matters of education, at the sector and sub-sector levels, with regard to the specific aspects such as access, quality and teachers, or to a given issue or need.” (p. 6). UNESCO (2013) differentiates between a policy and a strategy as the latter specifying the ways to achieve policy goals while defining a plan as another layer of policy document which determines the targets, activities, timeline, responsibilities, and resources to translate the policy and strategy into practice. For the purpose of this review, any documents that articulate the state government’s vision and/or actions for achieving inclusion and equity in education were considered as policy documents.

### **2.12.2 The UNESCO policy review framework**

This review of the inclusive education policy and strategy for each state and territory in Australia utilised the UNESCO Guide (2017). In recognition of inclusive quality education as a goal in itself (Sustainable Development Goal 4) and as a means for attaining all other Sustainable Development Goals, this guide was developed to support countries to embed inclusion and equity in educational policy to attain system-wide reform by removing barriers to access, participation and achievement for all learners. To assist a policy review process, the UNESCO assessment framework has been utilised to consider how well equity and inclusion are represented in the inclusive education policy and strategy state documents, and what actions are needed to improve policies and their enactment towards inclusive and equitable education systems. The UNESCO Guide (2017) was developed to assist government education policymakers to ensure that equity and inclusion are incorporated in educational policy and therefore it is an appropriate framework to guide this work.

International research identified four overlapping dimensions as key to establishing inclusive and equitable education systems. Refining the UNESCO Guide (2017), we report our findings for each dimension of the framework under the headings: strengths, concerns, level of progress and recommendations. Each dimension has four defining features, and these features form the basis of the framework (Figure 12).

Figure 12: Dimensions of the UNESCO Policy Review Framework (UNESCO, 2017, p.16)



### 2.12.3 Additional considerations for review and analysis process

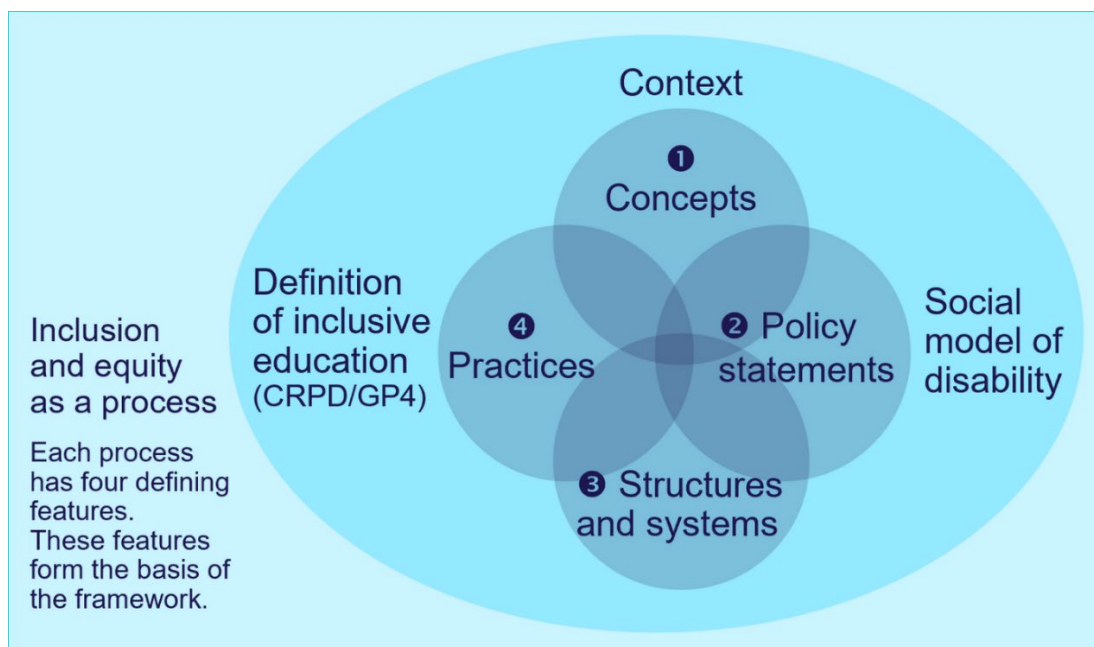
For decades, the medical model of disability has dominated the identification and educational support of students with disabilities worldwide. The key assumption in this model is that students with a disability represent a deviation from the norm and require treatment from medical and education professionals to fit into society and in schools (Carrington & MacArthur, 2012). This model considers that disability is caused by an impairment (Thomas, 2004) which means that it is placed within the person, who experiences a tragedy as a consequence of their disability (Cologon, 2014). A significant implication of this view of disability is that the role of the learning environment and social relationships is undermined and therefore teachers' work is viewed as least influential on students' learning. Education in segregated and special settings has been the most important consequence of the medical model dominance. Supporting students with a disability in special schools or classrooms has been a long-standing paradigm in education, underpinned by the beliefs and assumptions of the medical model of disability (Hansen et al., 2020).

In contrast, the social model of disability (Oliver, 1983) places emphasis on the social context and the impact of society on individuals. This perspective considers the ways that the environment (physical and social) is constructed and responds to individuals with an impairment. This model represents a shift in our understanding of and response to difference, as it asks us to reconsider how our societal norms, beliefs, values, and behaviours can create a disability within individuals. In essence, a disability is viewed as a social construct rather than as a personal tragedy that needs to be fixed or cured (Cologon, 2014). The social model has underpinned inclusive practice and guided the development of inclusive school communities, where difference is regarded as a natural part of human diversity and as such, it is respected and celebrated. A critical implication of this model is that all students, irrespective of their level of (dis)ability, belong and will be educated in the same inclusive educational context and it is the responsibility of educators to ensure that all students will have access to the same learning opportunities by removing any barriers encountered by students with disabilities.

The definition of inclusive education in the General comment No. 4 (2016) by the United Nations Convention on the Rights of Persons with Disabilities (CRPD) is clearly underpinned by the social model of disability: inclusive education is to be understood as “the result of a process of continuing and pro-active commitment to eliminate barriers impeding the right to education, together with changes to culture, policy and practice of regular schools to accommodate and effectively include all students” (United Nations, 2016, p. 3). Access to an inclusive education system at all levels has been recognised as a right for students with disability in CRPD (United Nations, 2006) and has become an obligation for signatory countries (k = 186, de Bruin, 2019), under Article 24. General Comment No. 4 (GC4; United Nations, 2016) on Article 24 of the CRPD indicates that States parties have the obligation “to move as expeditiously and effectively as possible” towards the realisation of the inclusive education rights of students with disability. This is a progressive system reform, which “is not compatible with sustaining two systems of education: a mainstream education system and a special/segregated education system” (United Nations, 2016, p. 11). GC4 (2016) provides an internationally recognised definition of what is inclusive and what is not. These key international affirmed instruments ensure governments around the world have an obligation to “respect, protect and fulfil the right of all learners to education” (UNESCO, 2017, p. 12).

It is acknowledged that context is important in shaping inclusive education policies and strategic plans. When context is considered, geography, history (colonisation, aid, domestic, etc.), policies (local, national, regional, international), culture, and religion need to be acknowledged. It can mean a country, a region, a locality, or an organisation (Beutel et al., 2019). Figure 13 provides a visual representation of these additional considerations as part of the framework for policy review and analysis.

**Figure 13: Visual representation of additional considerations included in the review and analysis process**



The search for inclusive education policy and strategy documents spanned years 2018–2023 using five selection criteria. After exclusions, 22 documents were reviewed nationally across the six states and two territories of Australia in accordance with the dimensions of the UNESCO Policy Review Framework.

## 2.12.5 Key findings: Inclusive policies across the nation – What do we know?

The review and analysis of the inclusive education policies and associated strategic documents were conducted using the UNESCO Guide (2017) to ensure that inclusion and equity are foregrounded in education. The findings on each dimension with additional considerations of the social model of disability, definition of inclusive education (CRPD/GC4), and context were combined. A summary of key findings across each dimension and level of progress towards inclusive education across different states and territories of Australia are provided below.

### 2.5.12.1 Dimension 1: Concepts

Level of progress of each Australian state and territory towards inclusive education concept as per the UNESCO framework (2017) are summarised in Table 30.

**Table 30: Level of progress of inclusive education concepts in each Australian state and territory as per the UNESCO Framework (2017)**

Concepts	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
1.1 Inclusion and equity are overarching principles that guide all educational policies, plans, and practices	P	A	P	A	P	P	P	P
1.2 The national curriculum and its associated assessment systems are designed to respond effectively to all learners	N	N	N	N	N	N	N	N
1.3 All partners who work with learners and their families understand and support the national policy goals for promoting inclusion and equity in education	P	P	P	A	D	P	D	P
1.4 Systems are in place to monitor the presence, participation, and achievement of all learners within the education system	A	P	P	A	D	P	P	P

Legend: **N** = No evidence of progress found, **D** = Discussions in progress, **P** = Planning, **A** = Actions

## Strengths and progress

All states and territories in Australia have clearly outlined their planning actions to strengthen the role of inclusion and equity across their educational policies, strategic plans, and practices in public schools. It is noted that two states (NSW, QLD) have made greater progress by embedding inclusion and equity as important features of their educational policies, plans and policies. However, the definitions of inclusion in the NSW and the QLD inclusive education policies differ: the NSW policy endorses the CRPD definition of inclusion whereas the QLD policy follows the GC4 definition. There is variability in the progress observed to strengthen professionals' commitment to the promotion of inclusion and equity. Most states and territories have planned activities to ensure that partners working with learners and families have a shared commitment to promote inclusion and equity and understand the implications of these principles for their roles. In two states (VIC and SA) initial discussions have begun to address this issue while in one state (QLD) actions have been taken to ensure that all partners understand and support educational policy aspirations for promoting inclusion and equity in education. Similarly, states and territories are at different stages in the establishment of systems for monitoring the presence, participation, and success of all learners. In most states and territories, planning has begun in developing systems/mechanisms for collecting data regarding the presence, participation, and achievement of all learners. In two states (ACT and SA), initial discussions have begun to address the limited use of monitoring systems to determine the impact of practices and strengthen inclusive practices and create more equitable settings for all learners. One state (QLD) has taken actions to establish monitoring systems that will provide evidence for impact to guide school system reform.

### 2.5.12.3 Dimension 2: Policy statements

Level of progress of each Australian state and territory towards inclusive education policy statement as per the UNESCO framework (2017) are summarised in Table 31.

**Table 31: Level of progress of inclusive education policy statement in each Australian state and territory as per the UNESCO Framework (2017)**

Policy statements	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
<b>2.1</b> The important national educational policy documents strongly emphasise inclusion and equity	P	A	P	A	D	D	P	P
<b>2.2</b> Senior staff at the national, district, and school levels provide leadership on inclusion and equity in education	P	A	P	P	P	D	P	P
<b>2.3</b> Leaders at all levels articulate consistent policy goals to develop inclusive and equitable educational practices	D	A	D	P	D	D	P	D
<b>2.4</b> Leaders at all levels challenge non-inclusive, discriminatory, and inequitable educational practices	N	P	D	P	D	N	D	P

Legend: **N** = No evidence of progress found, **D** = Discussions in progress, **P** = Planning, **A** = Actions

#### Strengths and progress

Education policies of all states and territories reflect the principles of inclusion and equity. While QLD and NSW strongly align with the core principles articulated by the United Nations CRPD GC4, other states are working towards developing a better inclusive education system. NSW has clearly defined policy goals and roles of leadership at different levels, while other states and territories are planning or discussing fostering committed leadership for inclusion and equity in education.



### 2.5.12.5 Dimension 3: Structures and systems

Level of progress of each Australian state and territory towards inclusive education structures and systems as per the UNESCO framework (2017) are summarised in Table 32.

**Table 32: Level of progress of inclusive education structures and systems in each Australian state and territory as per the UNESCO Framework (2017)**

Policy statements	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
<b>3.1</b> There is high quality support for vulnerable learners	P	A	P	A	D	D	P	P
<b>3.2</b> All services and institutions involved with learners and their families work together in coordinating inclusive and equitable educational policies and practices	P	A	P	P	P	D	P	P
<b>3.3</b> Resources, both human and financial, are distributed in ways that benefit potentially vulnerable learners	D	A	D	P	D	D	P	D
<b>3.4</b> There is a clear role for special provision, such as special schools and units, in promoting inclusion and equity in education	N	P	D	P	D	N	D	P

Legend: **N** = No evidence of progress found, **D** = Discussions in progress, **P** = Planning, **A** = Actions

#### Strengths and progress

The ACT, NT, TAS, VIC and WA indicate a commitment to providing quality support for vulnerable students in policy and strategy documents and NSW, QLD and SA have clear plans in place to provide quality support. While NSW, QLD, and SA have evidence of clear planning and QLD has evidence of actions to involve learners and their families in various ways to support policy and practice. Furthermore ACT, NT, SA, TAS and VIC have discussed how to mobilise human and financial resources to support greater equity and inclusion in schools; NSW and WA have evidence of planning and QLD has actioned plans for resourcing models that benefit vulnerable learners. While TAS and VIC are the only states/territories that have evidence of planning for clear roles for special educators from special schools and units in promoting equity and inclusion.

## 2.5.12.7 Dimension 4: Practices

Level of progress of each Australian state and territory towards inclusive education practices as per the UNESCO framework (2017) are summarised in Table 33.

**Table 33: Level of progress of inclusive education practices in each Australian state and territory as per the UNESCO Framework (2017)**

Policy statements	ACT	NSW	NT	QLD	SA	TAS	VIC	WA
4.1. Schools and other learning centres have strategies for encouraging the presence, participation, and achievement of all learners from their local community	P	P	P	A	P	P	P	D
4.2. Schools and other learning centres provide support for learners who are at risk of underachievement, marginalisation, or exclusion	P	P	D	A	P	P	P	P
4.3. Teachers and support staff are prepared to respond to learner diversity during their initial training	D	A	D	N	D	D	N	N
4.4. Teachers and support staff have opportunities to take part in continuing professional development regarding inclusive and equitable practices	D	A	D	A	D	P	A	A

Legend: **N** = No evidence of progress found, **D** = Discussions in progress, **P** = Planning, **A** = Actions

### Strengths and progress

There is evidence of planning to strengthen the quality of the strategies used to encourage the presence, participation, and achievement of all learners in the policies and strategic plans in the majority of states and territories. One state (QLD) has taken actions to ensure that effective strategies are being implemented to address these goals. Most states and territories have described their plans for strengthening the support for learners at risk of underachievement, marginalisation, and exclusion. In one state (QLD) actions have been taken to ensure that effective support is provided to learners facing the risk of marginalisation, underachievement, or exclusion. In regard to the role of Initial Teacher Education (ITE) in preparing teachers to be ready to respond to learner diversity, the evidence is quite inconsistent. For example, four states and territories have begun discussions aimed to improve ITE, whereas in one state actions have been taken to ensure that teachers and support staff have effective training in responsive pedagogies. Education policies and strategic plans examined in three states do not contain evidence of progress in this area. However, education policies and strategic plans in ACT, NT and SA contain evidence of discussions that have taken place to address this concern. There is evidence that half of the states and territories (NSW, QLD, VIC, WA) have provided information in their policies and strategic plans about actions taken to ensure that there are sufficient professional developmental opportunities focused on inclusive and equitable practices.

## 2.12.6 Conclusion – Inclusive education policy and strategic plans

An **inclusive education policy review across all states and territories of Australia** was conducted. The review and analysis of the **inclusive education policy and strategic plans** of each state and territory in Australia used a framework for policy analysis informed by the UNESCO (2017) ***A guide for ensuring inclusion and equity in education*** (the UNESCO Guide) and three additional concepts drawn from scholarly literature and international instruments including:

- **the social model of disability**
- **definition of inclusive education (CRPD/GC4)**
- **context.**

All three concepts are important in shaping inclusive education policies and strategic plans. The review and analysis highlighted how each state and territory has made some progress towards achieving inclusive education policy and practice in Australia and indicated the work that still needs to be done. Clearly there are challenges associated with achieving agreement between governments and education districts which can be overcome with a national inclusive education roadmap/framework/approach to policy and practice. Drawing on the analysis, recommendations for improvements in policy, research, and practice that will progress understanding and realisation of inclusive education in Australia are generated (Section 4).

## Section 3: REBAS 2023 Australian empirical research: Findings from Phase 2

Section 3 of this white paper will discuss findings from Phase 2 of the Autism CRC Removing Educational Barriers in Australian Schools (REBAS) project before discussing key recommendations and conclusions in Section 4 which draws on all aspects of the white paper.

### 3.1 Background

To be genuinely inclusive, education systems and practices need to effectively support the strengths and meet the needs of diverse learners. Building on Autism CRC's school years research, it is timely to (a) further our understanding of current educational strengths and needs of all autistic learners, including those with high and complex needs or those who are marginalised in multiple ways, and (b) identify what is working and not working well in inclusive education practice for autistic learners. The project aimed to identify gaps in educational practice and provide policy, research, and practice recommendations to progress our education system nationally by ensuring that appropriately tailored inclusive practices catering to autistic learners' strengths and needs will be applied.

In Phase 2 of the Autism CRC REBAS project a mixed methods convergent parallel design (Creswell & Plano Clark, 2017) was used to implement a nationwide study. Using surveys and interviews, this study captured multiple stakeholder perspectives (parent/carers, siblings, autistic learners, teachers, school leaders, allied health professionals) on the educational strengths and needs of autistic learners as well as the practice gaps in meeting the needs of autistic learners and their siblings.

**This participatory research extends national and international research and will help to:**

- **Produce robust evidence on the current educational priorities of autistic learners**
- **Identify implications for siblings**
- **Generate real-world benefits leading to increased engagement and participation for autistic learners**
- **Provide recommendations that will inform future research, policy, practice, and professional learning resources for implementing genuine inclusive practice.**

### 3.2 Research methodology

Informed by the previous Autism CRC Educational Needs Analysis research (Saggers et al, 2018), the current mixed methods nationwide study used a convergent parallel research design (Creswell & Plano Clark, 2017) to implement a national online qualitative survey, and for participants who consented, semi-structured interviews to provide a further richness and depth to the data. The survey design and interviews were co-constructed in alignment with the Autism CRC guidelines for inclusive research (e.g., language, access, and practices). The project received ethics approval from Griffith University (Ethics Approval Number: 2022/806) and administrative approval from Queensland University of Technology (Ethics Approval Number: 6480) prior to proceeding.

Prior to the survey and interviews being constructed, the autism community research partners and autistic consultants were given the opportunity to identify what their priorities were for these data collection tools. Each survey and semi-structured interview framework were tailored to the

participant group completing them (e.g., educators, allied health, parent, sibling, autistic learner). The online survey provided participants with a series of open-ended qualitative questions to respond to. Once drafts of the instruments were constructed, the autistic consultants and autism research partners were consulted and given the opportunity to provide further feedback on the content before the data collection tools were finalised. Once drafts of the instrument were finalised, they were piloted with a small number of participants reflective of the participant group they were intended to cater to, to ensure valid and rigorous processes were used, and final changes were made taking on feedback from pilot-testing (e.g., refining wording of items).

The large-scale social media recruitment approach used successfully in the previous Educational Needs Analysis research was adopted for the study. Using purposive sampling (Palinkas et al., 2015), participants were recruited through the research partners' established professional and social networks nationally. The surveys were housed on the online survey platform REDcap with the link shared through social media platforms and word of mouth. The survey was opened from mid-February until the end of April 2023 and took approximately 20–30 minutes to complete. Participants could also consent to completing an interview.

Those who consented to interview were then contacted by the team and interviewed via the online platform Microsoft Teams. A small number of participants were interviewed by phone. Interviews took place between March and April, 2023 with most interviews taking approximately 30 minutes. The interviews were conducted by three researchers in the project who have experience interviewing the range of stakeholders.

In total, 145 participants completed the survey including:

- **134** adult stakeholders including
  - educators/teachers ( $n = 26$ )
  - teacher's aides ( $n = 5$ )
  - school leaders ( $n = 6$ )
  - parents/caregivers ( $n = 64$ )
  - allied health professionals ( $n = 33$ )
- **10** autistic students
- **1** sibling.

Furthermore **50 (34.5%) of the participants consented to an in-depth semi-structured interview** to provide more qualitative depth to survey responses. Participants who participated in interviews included:

- **23** parents/caregivers
- **9** educators
- **11** allied health professionals
- **6** autistic students
- **1** sibling.

Qualitative data analysis and synthesis were conducted simultaneously. All interviews were audio recorded, transcribed, and checked for accuracy by members of the research team. In addition, interview transcripts were sent to participants for their check of accuracy and approval for inclusion in the analysis. All personal information was removed from the transcripts and the de-identified transcripts were imported into NVivo to conduct data analysis. A deductive and inductive and deeply reflective method (Braun & Clark, 2020), informed by the social model of disability, was adopted to analyse this qualitative dataset using NVIVO software. The social model of disability

(Oliver, 1983) places emphasis on the social context and the impact of society on individuals. This perspective takes into account the ways that the environment (physical and social) is constructed and responds to the individuals with an impairment. A critical implication of this model is that all students, irrespective of their level of (dis)ability, belong and will be educated in the same inclusive educational context. Further, it is the responsibility of educators to ensure that all students will have access to the same learning opportunities by removing any barriers encountered by students with disabilities.

Survey data was extracted from REDcap and screened for missing data. The data were then analysed using conventional content analysis (Hsieh & Shannon, 2005). Content analysis was conducted by first reading and rereading all transcriptions by two research assistants (RA) and team leader with initial codes developed. Transcripts were separated according to the question being asked, with two of the four questions independently coded by one RA and the other two questions independently coded by another RA, and each individual response assigned a code within Excel. Twenty percent was recoded independently by the second RA with any discrepancies resolved via discussion with the team leader and consensus amongst the team. Codes were then arranged into categories through consensus with initial code labels revised. Child and adult data were analysed separately as each group answered differed questions and were not directly comparable.

**Findings from Phase 2** are shared below.

## 3.3 Key findings

### 3.3.1 Key findings from the survey data

The first section summarises some key findings from adult stakeholders (parents/caregivers, educators, or allied health professionals) and autistic learners who completed the online survey. These findings are described in relation to six key areas:

1. Strengths of autistic learners
2. Needs of autistic learners
3. Enablers for autistic learner success
4. Barriers to autistic learner success
5. Autistic learners and complex needs.
6. Professional learning needs of stakeholders to support autistic learner success.

#### 3.1.3.1 Autistic learners' strengths

Adult stakeholders identified strengths (see Table 34) that were categorised into six broad themes:

- thinking and reasoning (43.16%) (6 codes identified)
- personality traits (35.26%) (13 codes identified)
- broader skills and talents (11.05%) (8 codes identified)
- academic skills (6.23%) (6 codes identified)
- social strengths (4.21%) (5 codes identified)

**Table 34: Autistic learners' strengths**

Thinking and reasoning	Personality	Skills and talents	Academic	Social
<ul style="list-style-type: none"> <li>• Creativity &amp; flexible thinking</li> <li>• Passion/ interest in subjects</li> <li>• Attention to detail</li> <li>• Intelligence &amp; knowledge</li> <li>• Memory</li> <li>• Visual processing</li> </ul>	<ul style="list-style-type: none"> <li>• Compassion/ empathy</li> <li>• Kindness &amp; respect</li> <li>• Determination &amp; desire to achieve</li> <li>• Honesty</li> <li>• Humour</li> <li>• Resilience</li> <li>• Sense of justice/ fairness</li> <li>• Courage</li> <li>• Positive/ open-minded attitude</li> <li>• Hardworking</li> <li>• Curiosity</li> <li>• Independence &amp; maturity</li> <li>• Patience &amp; forgiveness</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding of self</li> <li>• Unique perspective</li> <li>• Authenticity</li> <li>• Ability to focus</li> <li>• Routine</li> <li>• Follows rules &amp; expectations</li> <li>• Physical ability</li> <li>• Organisation</li> </ul>	<ul style="list-style-type: none"> <li>• Mathematics</li> <li>• General</li> <li>• Reading &amp; literacy</li> <li>• Science</li> <li>• Physical education</li> <li>• History</li> </ul>	<ul style="list-style-type: none"> <li>• General Social</li> <li>• Accepting of others</li> <li>• Supportive of peers</li> <li>• Supportive of staff</li> <li>• Supportive of family</li> </ul>

Note: Themes are reported most to least commonly reported from left to right, and columns list most to least commonly reported from top to bottom.

**Consistent with academic skills being a strength identified by adults, autistic students also identified their own strengths to include being “clever and good at learning,” “maths and art and science.” Further they noted social strengths such as “I really enjoy talking to my friends who are in other classes” and “good relationships with staff.”**



### 3.1.3.2 Autistic learners' needs

Adult stakeholders identified several areas of educational need for autistic learners. These needs were classified into six broad themes (see Table 35) including:

- classroom accommodations and supports (36.82%) (6 codes identified)
- social-emotional skills for the learner to develop to facilitate their participation (26.37%) (3 codes identified)
- supportive attitudes of key stakeholders around the learner (14.62%) (2 codes identified)
- adaptive/behavioural skills of learners (8.62%) (4 codes identified)
- mental health needs to be addressed in learners (7.83%) (1 code identified)
- academic skills in need of support for learners (5.74%) (1 code identified)

It should be noted that at times, participants raised conflicting needs and perspectives in this area. For example, while some participants raised the need for development of the learner's social-emotional skills, others raised concerns that teaching students to mask autism could negatively impact on a learner's mental health. This conflict was further illustrated in the differences in perspective relating to social skills-based supports, with some emphasising the need for the focus to be on the learners' own wellbeing and identity rather than learning neurotypical social skills:

... their own wellbeing and emotional sense of self. I think there is a lot of focus on developing 'social skills' as a way of 'fitting in with everyone else' rather than helping autistic students embrace who they are and how they view the world. (Allied health professional)

**Table 35: Autistic learners' needs**

Classroom accommodations and supports	Social-emotional skills	Supportive attitudes	Adaptive behaviour skills	Mental health	Academic skills
<ul style="list-style-type: none"> <li>• Flexible curriculum and teaching styles</li> <li>• Supportive sensory environment</li> <li>• Specific accommodations (e.g., more time)</li> <li>• Clear instructions</li> <li>• Routine and consistency</li> <li>• Small classes/groups</li> </ul>	<ul style="list-style-type: none"> <li>• Coping skills and emotional regulation</li> <li>• Building friendships/relationships with peers and staff</li> <li>• Learning social skills</li> <li>• General social</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding and respect</li> <li>• Acceptance and belonging</li> </ul>	<ul style="list-style-type: none"> <li>• Organisation</li> <li>• Sense of safety</li> <li>• Life skills</li> <li>• Building engagement and focus</li> </ul>	<ul style="list-style-type: none"> <li>• Support for mental health and self-esteem</li> </ul>	<ul style="list-style-type: none"> <li>• Tutoring and extra support for difficult subjects</li> </ul>

Note: Themes are reported most to least commonly reported from left to right, and columns list most to least commonly reported from top to bottom.

Students also raised the need for knowledge and understanding of autism and neurodiversity affirming supports, noting:

Make it a rule to teach teachers about autism and neurodiversity when they are at university. Have neurodiversity affirming support ... Teaching the other kids to understand neurodiversity. Teach them not to bully people with disability.

From a student perspective, of note, **students highlighted an additional issue of schools not implementing supports as being an important need, including “School actually following my ILP [Individual Learning Plan] and giving me accommodations. Getting extra help from a LSA [learning support assistant] like I'm supposed to be.”** The need to understand each autistic student as an individual was also highlighted:

Students with autism are all different and just because you've taught a student with autism before, doesn't mean that you know exactly how to help them and that you understand them. Check in with the student and ask for their opinion on how to help them in the classroom.

### 3.1.3.3 Enablers to autistic learners' success in schools

Enablers were classified into seven broader themes as outlined in Table 36. These included:

- school support network (39.07%) (6 codes identified)
- elements of the environment (18.31%) (7 codes identified)
- academic/curriculum elements (13.11%) (4 codes identified)
- understanding of others, individuals, and systems (12.84%) (6 codes identified)
- classroom accommodations and supports (7.38%) (5 codes identified)
- attributes of the student/learner themselves (4.37%) (3 codes identified)
- home supports (3.01%) (1 code identified)

**Table 36: Enablers to autistic learners' success**

School support network	Environmental	Academic	Understanding of autism	Classroom accommodations and supports	Student attributes	Home supports
<ul style="list-style-type: none"> <li>• Attitude &amp; knowledge</li> <li>• Supportive relationships</li> <li>• Supportive staff teacher/ principal</li> <li>• Acceptance &amp; inclusivity</li> <li>• Access to services</li> <li>• Empathy</li> </ul>	<ul style="list-style-type: none"> <li>• Flexible &amp; adaptable</li> <li>• Supportive resources</li> <li>• Clear communication</li> <li>• Sensory environment</li> <li>• Safe</li> <li>• Non-restrictive classroom</li> <li>• Smaller class size</li> </ul>	<ul style="list-style-type: none"> <li>• Accessible and inclusive curriculum</li> <li>• Incorporation of strengths and interests</li> <li>• Range of activities</li> <li>• Mathematics</li> </ul>	<ul style="list-style-type: none"> <li>• School level</li> <li>• Neurodiversity-affirming approach</li> <li>• Recognition &amp; acknowledgement</li> <li>• Flexibility and adaptability</li> <li>• Embedded in policies &amp; processes</li> <li>• Community level</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Routine</li> <li>• Visual cues</li> <li>• Technology</li> <li>• Self-directed learning</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to self-advocate</li> <li>• Sense of belonging</li> <li>• Student strengths</li> <li>• Resilience</li> </ul>	<ul style="list-style-type: none"> <li>• Supportive home</li> </ul>

Note: Themes are reported most to least commonly reported from left to right, and columns list most to least commonly reported from top to bottom.

Consistent with other stakeholders, students themselves similarly highlighted environmental enablers including the sensory environment, including “**I would make school more sensory friendly.**” and class sizes “**and class sizes (much smaller class sizes)**”. Students also raised understanding, “**...for teachers to understand me**” and “**teachers to understand autism.**” Further, students raised incorporating their strengths and interests, for example noting “**more interest-based learning.**”

### 3.1.3.4 Barriers to autistic learners’ success in schools

Barriers were classified into seven broad themes (see Table 37). These included:

- attitudes and knowledge of others (25.96%) (3 codes identified)
- academic (19.40%) (5 codes identified)
- environmental (16.12%) (7 codes identified)
- school policies and procedures (13.11%) (7 codes identified)
- support network (9.29%) (5 codes identified)
- social (8.50%) (2 codes identified)
- students’ own mental health concerns (7.38%) (3 codes identified)

**Table 37: Barriers to autistic learners’ success**

Attitudes and knowledge	Academic	Environmental	School policies and procedures	Support network	Social	Student mental health
<ul style="list-style-type: none"> <li>• Understanding</li> <li>• Inclusivity &amp; acceptance</li> <li>• Lack of neurodiversity-affirming approach</li> </ul>	<ul style="list-style-type: none"> <li>• Fixed/ inflexible teaching</li> <li>• Non-inclusive curriculum</li> <li>• Fixed expectations</li> <li>• Tests/ homework</li> <li>• Lack of assistive technology</li> </ul>	<ul style="list-style-type: none"> <li>• Non-inclusive and inflexible</li> <li>• Communication</li> <li>• Classroom sizes</li> <li>• Not sensory friendly</li> <li>• Distractions</li> <li>• Unsafe</li> <li>• Resources</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Staff training/ resources</li> <li>• Use of punishment</li> <li>• Funding</li> <li>• Low level of student involvement</li> <li>• Rules/ regulations</li> <li>• Inconsistency</li> <li>• Lack of accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Staff</li> <li>• Processes/ policies</li> <li>• Home</li> <li>• Relationships</li> <li>• Access to Services</li> </ul>	<ul style="list-style-type: none"> <li>• Bullying</li> <li>• Lack of engagement with peers</li> </ul>	<ul style="list-style-type: none"> <li>• Social/ wellbeing</li> <li>• Anxiety/ social anxiety</li> <li>• Fear of school</li> </ul>

Note: Themes are reported most to least commonly reported from left to right, and columns list most to least commonly reported from top to bottom.

Consistent with other stakeholder perspectives, in addition, students raised sensory barriers at school noting, **“I do what I can with headphones but sometimes it's difficult when doing group work to feel safer in the sensory environment,”** **“NO POLYESTER UNIFORM,”** and **“School is hard because of sensory overload.”**

### **3.1.3.5 Educational strengths and needs of autistic learners with complex needs**

The research question posed asked if results represented autistic learners with complex needs. In the survey and throughout this document, complex needs are defined as “intersectional identities (e.g., autistic and CALD, First Nations, sexual and gender diverse) and/or co-occurring conditions (e.g., intellectual disability, ADHD, dyslexia, complex learning, communication, behavioural/social emotional, twice exceptional/dual exceptionality, co-existing health or disability needs).”

Most parents ( $n = 56$ , 86.2% of parent respondents) and most other stakeholders (teachers, school leaders, and allied health,  $n = 50$ , 75.8%) reported that their description of the educational needs and strengths, and the barrier/enablers listed, would relate to, or similar for, autistic students with complex needs. While individual participants who then completed additional questions of strengths and needs for learners with complex needs provided differing responses to their initial answers, however at a group level the same codes and themes were observed as overviewed above.

### **3.1.3.6 Professional learning**

Most parents/caregivers agreed (22.2%) or strongly agreed (52.4%) that they would like to learn more about autism. Similarly, most professionals (allied health and educators) agreed (36.4%) or strongly agreed (50%) that they would want more professional learning about autism. Areas of interest for professional learning included:

- mental health
- flexible curriculum and teaching modalities
- autism awareness and understanding including neurodiversity affirming practice.
- environmental and sensory supports, and broader supports and access to these in the community (indicated by parents/caregivers)
- consultation and professional development informed or led by autistic people.

### 3.3.2 Key findings from the interview data

Phase 2 included a qualitative component designed to address the research questions for the project. **There were 50 participant stakeholders (23 parents, 11 allied health professionals, 9 educators, 6 students, 1 sibling).** The focus of the interviews was to establish/explore from the various stakeholder perspectives of what enablers and barriers influenced the success, academic learning, wellbeing, engagement and learning of autistic students at school including those with complex needs.

The adult stakeholders (parents, educators, and allied health professionals) were asked a range of interviews questions under the topics of:

- Sharing of experience.
- What worked well/didn't work well?
- Supports and outcomes.
- Teacher-parent collaboration.
- Professional development.
- Experience with siblings – what more is needed?
- In an ideal world, what would improve success for students?

Students and siblings were asked a range of interviews questions under the topics of:

- What does the best/worst school and best/worst teacher look like?
- Sibling support.
- In an ideal world, how would you like things to be different?

#### 3.2.3.1 Analysis of the interview findings

Analysis of the interview data revealed a wide range of themes that have been categorised into four topics: i) educational strengths of autistic learners; ii) educational needs of autistic learners; iii) barriers to education for autistic learners; and, iv) enablers to education for autistic learners. The topics, themes and description of themes are shown in Table 38.

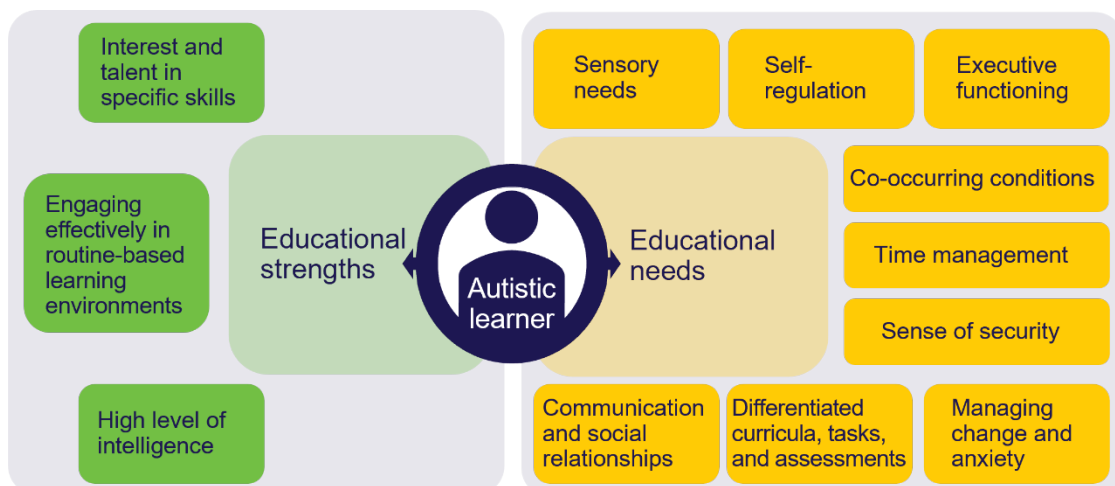
**Table 38: Themes generated by interview data and definitions for themes**

Topics	Themes	Description
<b>Educational strengths</b>	Interests and talents	Specific interests and talents such as mathematical skills, writing, gaming or Lego
	High level of intelligence	Demonstrated as a high IQ score or giftedness in specific areas
	Engaging effectively in routine-based learning environments	For example, visual schedules or labels Respond well to: <ul style="list-style-type: none"> <li>• Simple and clear instructions in steps or order</li> <li>• Structured work or activities with timetables</li> <li>• visuals and signposts,</li> <li>• stepwise instructions, and</li> <li>• routines</li> </ul>
<b>Educational needs</b>	Sensory needs	Needs related to sensory processing, such as hearing or seeing (e.g. noise sensitivities)
	Self-regulation	Ability and process to control own emotions, behaviours and responses in different situations
	Executive functioning	Cognitive processes involving planning, executing and monitoring behaviours or actions (e.g., getting started, organising tasks)
	Co-occurring conditions	Co-existing health or disability conditions such as ADHD, intellectual disability, or dyslexia
	Managing change and anxiety	Self-management in response to changes and managing stress caused by such changes
	Time management	Ability to keep track of time and organise tasks
	Differentiated curricula, tasks and assessment	Reasonable adaptation or modification in curricula and associated activities and assessment based on learners' strengths and needs
	Communication and social relationships	Ability to share feelings and opinions and make connections or interact with people
	Sense of security	Feeling safe in the school environment or in new environments
<b>Barriers</b>	Limited understanding of autism and neurodiversity	Lack of understanding among stakeholders, particularly educators, about what it means to be an autistic person and how to support their inclusion and engagement
	Lack of acknowledgement of intersectionality and co-occurring conditions	Lack of awareness of how intersectional identities (e.g., autism plus gender diversity) or co-existing health conditions or disability impact an autistic person and showing inadequate responses in this regard
	Attitudes	Negative or biased attitude towards the autistic person and their inclusion in schools or society
	Lack of school capacity	Inadequate school capacity to include and support autistic learners
	Limited collaboration and partnership among stakeholders	For example, insufficient involvement of and/or communication with parents, allied health workers or students themselves regarding supporting autistic learners
	Lack of understanding of individual differences	Considering all autistic learners to have similar profiles or needs and expecting them to behave or progress the same way (particularly by educators)
	Limited knowledge and skills in inclusive pedagogy	Educators' lack of pedagogical knowledge and skills to respond to diverse autistic learners
	Insufficiency of research-based resources	Limited availability or access to research-based resources to support or find ways to support autistic learners

Topics	Themes	Description
Enablers	Better understanding and awareness at all levels	Better understanding among all stakeholders, including parents, educators, allied health and peers, about what it means to be an autistic person and how to support their inclusion and engagement
	Clear and regular communication between stakeholders	Two-way communication between all stakeholders, particularly parents, educators and allied health, about supporting autistic learners (e.g., frequent meetings, using apps to connect and share information)
	Stronger connections and partnerships	Better and regular collaboration among stakeholders
	More autistic voices	Having more autistic voices in collaborations, meetings or in professional development programs for stakeholders
	Adoption of a strength-based approach	Focusing more on what autistic learners can do than on what they can not
	Whole school and whole of class strategies	Implementing strategies considering the whole class/school rather than targeting strategies to particular students
	Differentiation and scaffolding	Reasonable adaptation in curricula and associated activities with necessary scaffolding to support all learners to progress
	Sufficient specialised support services	Availability of enough support services, such as counselling or therapies, to all learners who need them
	Enhanced teacher agency and efficacy	Developing teachers' capacity to make appropriate decisions and support autistic learners
	Transition support strategies	Preparation and execution of support strategies to help autistic learners in effective transitions (e.g., from primary to secondary, one school to another etc)

The subsequent section discusses the themes in two sections: (a) educational strengths and needs of autistic learners (see Figure 14), and (b) barriers and enablers to education for autistic learners (see Figure 15).

**Figure 14: Educational strengths and needs of autistic learners**



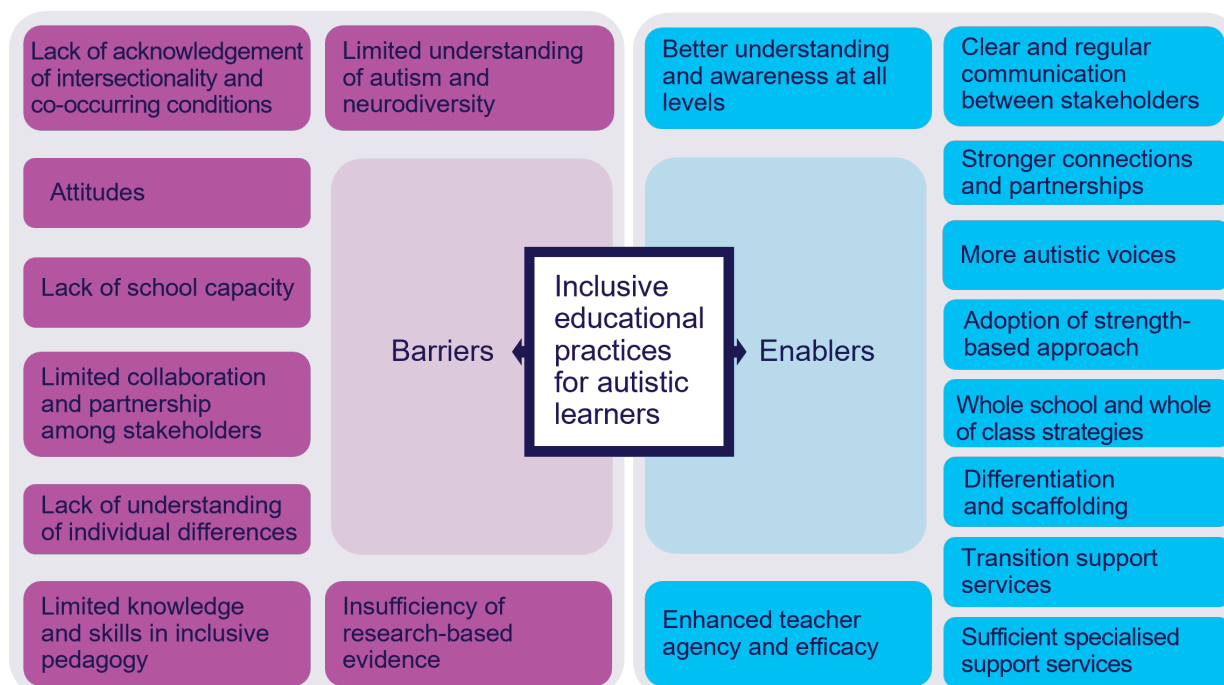
Participants expressed a general concern that the **strengths** of learners with autism were not adequately understood and acknowledged; nevertheless, four key educational strengths, as illustrated in Figure 13 were evident in the data. Stakeholders reported that many autistic learners have specific interests and talents in areas such as in writing, maths, technology or games, whereas some of them demonstrate high level of intelligence and superior academic skills. Moreover, the



majority of respondents highlighted that autistic learners has strengths in engaging effectively in a routine-based learning environment with clear and step-wise instructions, visual schedules and signposts.

Stakeholders described nine common autistic learner **needs**. Wellbeing related needs were identified in areas such as self-regulation, sensory needs, and managing anxiety. However, the majority of respondents placed emphasis on engagement-related needs, including time management, executive functioning (such as getting started, planning and organising, managing behaviours), accommodating change, communicating, managing social relationships and developing a sense of security. In addition, while challenges for some autistic learners was considered to be compounded due to co-occurring conditions such as ADHD or dyslexia, intersectional identities, such as LGBTQIA+ in addition to autism, were reported to confound their needs further. Regarding the academic needs of autistic learners, the need to access differentiated curricula, resources, tasks and assessments was a common theme in the stakeholders’ interviews.

**Figure 15: Barriers and enablers to education for autistic learners**



The interview data revealed, as illustrated in Figure 14, that the most significant **barrier** to autistic learners’ education was a lack of adequate understanding of autism and other kinds of neurodivergence, particularly in school settings. Other barriers were identified as the capacity of schools to include and support autistic learners, the reluctance of school staff to understand individual differences and the lack of knowledge and skills in inclusive pedagogy. In addition, attitudinal barriers such as perception of identity, internalised biases, or conflicts between “norm and minority” were articulated. The data also revealed limited awareness and acknowledgement of intersectionality and co-occurring conditions in autistic learners and highlighted the limited nature of collaboration among stakeholders. Insufficient research-based evidence for supporting autistic learners was also expressed as a concern by stakeholders.

To **enable** autistic learners’ educational engagement and achievement, the majority of participants placed emphasis on increasing understanding at all levels, including parents, educators and peers, as well as on stronger partnerships fostering clear and regular two-way communication between all

stakeholders. The significance of having more autistic perspectives in such collaborations and professional development programs was also highlighted. Strength-based whole-school approaches with adequate differentiation and scaffolding supported by the appropriate level of services, such as therapies and counselling, were considered significant critical foundational elements to success - with additional more individualised tailored need-based strategies implemented if needed. To implement such approaches, the need for enhancing teacher agency and efficacy was also evident in the data. In addition, the data also revealed the importance of preparation and strategies to support effective transitions of learners at different stages.

## Section 4: Summary and Recommendations

### 4.1 Key messages: Overall recommendations for policy, research, and practice

#### 4.1.1 The autistic learner – heterogeneity, complexity, multiple marginalities, and intersectionality

What is critically evident from the research is the unique and vast diversity within the autistic community that needs increased recognition, awareness, care and understanding to ensure autistic learners flourish and experience educational success in schools. Current barriers to education are often linked to a lack of knowledge or understanding of the multiple ways this group of learners can be marginalised within school environments when there is lack of neurodiversity-affirming approaches in place that acknowledge their multiple attributes and intersectional profiles. Schools are complex, multilayered, fluid social environments that can be extremely challenging for the autistic learner to navigate without appropriate enablers in place. The current body of research draws attention to the limited recognition of the multiple influences in play within educational contexts, that can create enablers or barriers to autistic learners flourishing in their education. Often assumptions around complexities for autistic learners are linked to their perceived cognitive level. Instead, drawing on an alternate definition of complexity by Pfeiffer (2015) that suggests, in addition to co-occurring conditions, complexity refers to a set of multiple attributes that may include, for example, culture, identity, academic needs, wellbeing. It is understanding this complexity that can help us to understand how these multiple attributes may influence the educational success of the autistic learner (refer to Figure 13). Listening to the voice of autistic learners and their parents/caregivers can support better understanding. Attributes to consider include:

- Attributes of the **learner** e.g., culture, identity, academic strengths, needs and learning preferences, and wellbeing.
- Attributes of the **environment** including attributes of the built environment, learning space, pedagogical approaches, inclusive practices, and policies that may influence learning.

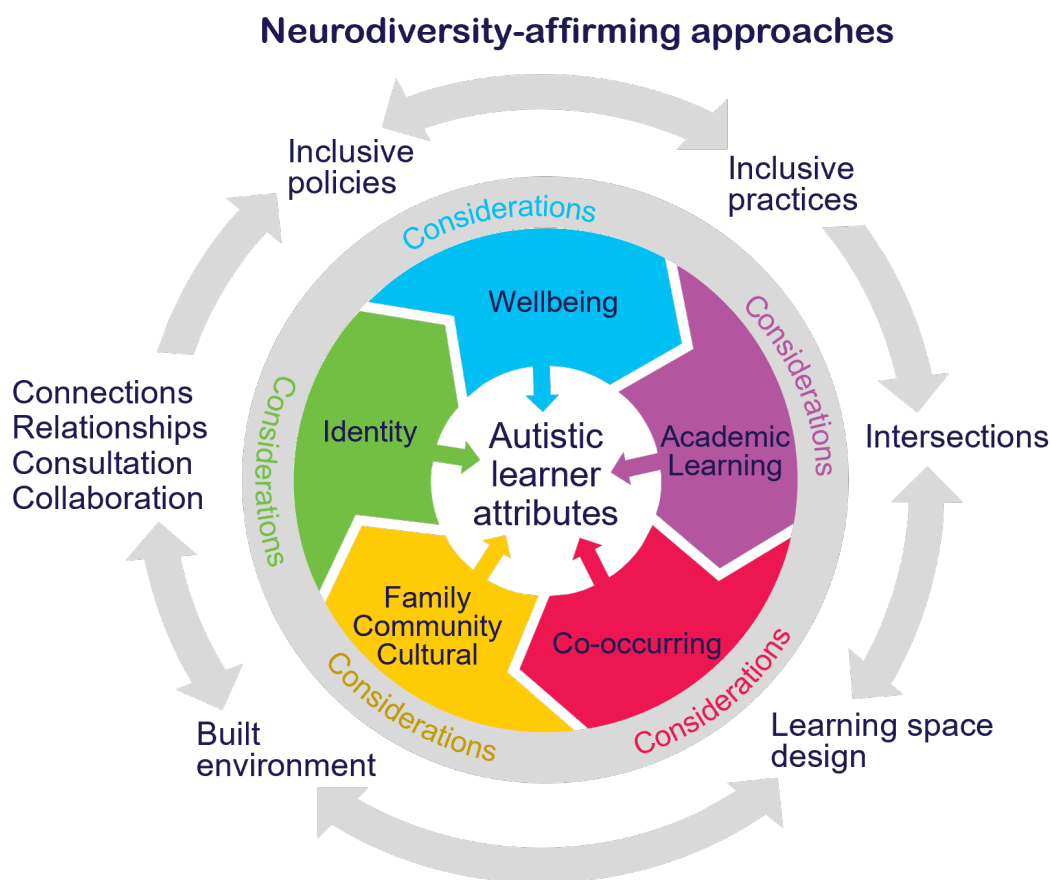
The more complex the set of attributes, the greater the need for:

- multiple resources
- multidisciplinary support, professional development and learning, collaboration, and consultation
- individualised, strength-based, and tailored approaches to promote educational success.

Based on this research, Figure 16 provides a visual representation of some of the multiple attributes influencing the educational success of autistic learners. The autistic learner has many personal attributes influenced by identity, culture, family and community, wellbeing, learning and co-occurring considerations. These considerations have been highlighted by the results of the scoping reviews and reinforced by the findings of our empirical study in which perspectives of the autistic and autism community were obtained. How these personal attributes of the autistic learner are acknowledged and supported in the learning environment is critical to their success in school. This support requires the implementation of inclusive policies and inclusive practices that listen to autistic voices and their families, mitigate the risk of the autistic learner being marginalised in multiple ways, support

neurodiversity-affirming approaches and success in learning, and involves collaboration with all education stakeholders including the learner. It also takes into consideration the built environment and learning space design.

**Figure 16: Multiple attributes influencing educational success of autistic learners**



In applying these multiple attributes to recommendations, consideration needs to be given to enabling approaches at multiple levels within our society. These centre around the autistic individual and their families and are promoted through:

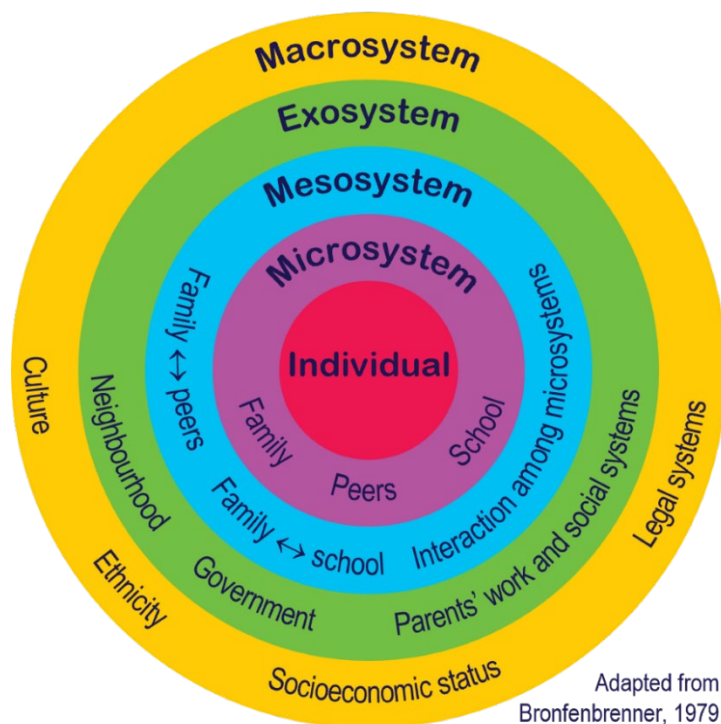
- neurodiverse inclusive societies and cultures
- neurodiverse inclusive policies
- neurodiverse inclusive communities and neighbourhoods
- neurodiverse inclusive schools.

This is illustrated in Figure 17 which adopts Bronfenbrenner’s (1979) socio-ecological framework to present visually what a neurodiverse inclusive society needs to implement at multiple layers with our society. These layers are as follows:

- **Macrosystem:** The outer most layer is the macrosystem which includes formal policies, beliefs and systemic structures and the relationships that exist between them. This level can support a neurodiverse society through influencing decisions made at wider systems level to support inclusive change. Recommendations for policy are directly linked to this layer.

- **Exosystem:** This next layer are the social structures, process and events that occur that may directly affect the student. A key focus of this layer when considering the autistic learner is teacher and allied health professional development and learning which can support decisions that help autistic learners thrive at school. Recommendations for professional learning are directly linked to this layer.
- **Mesosystem:** The mesosystem is the interaction between microsystems. Two key microsystems linked to autistic learner success are school and families. Recommendations for practice and research focus on this system.
- **Microsystem:** The microsystems are the environments the autistic learner interacts with. Two key microsystem environments of autistic learners are school and home. Recommendations for practice and research focus on these two microsystems.

Figure 17: Neurodiverse inclusive society



## 4.2 Recommendations

The recommendations for policy, research, and practice to enhance autistic students' opportunities to thrive in the Australian education system are based on the ideas described above. These recommendations draw on the outcomes from our scoping and inclusive education policy reviews and the findings of the empirical research involving autistic individuals and the autism community consultation (survey and interviews). These recommendations are presented in two parts:

- Part 1: recommendations for policy, research, and practice that are focused specifically on supporting autistic learners to flourish in educational environments. These draw from findings of the scoping reviews and REBAS empirical research.
- Part 2: recommendations for inclusive education across the nation in relation to policy research, and practice that will support autistic learners to thrive in their education and promote all learners' success in school. These draw on the national inclusive education policy analysis review.

## 4.2.1 Recommendations for policy, research, and practice that support autistic learners to flourish in education

### 4.1.2.1 Policy recommendation to support autistic learners to flourish

Table 39 provides a policy recommendation to support autistic learners to flourish, generated from the seven scoping reviews and REBAS empirical research data. This recommendation is expanded further in the table to detail how this could be achieved.

**Table 39: Policy recommendation to support autistic learners to flourish**

Policy recommendation
Across states and territories, the provision of adequate resourcing, funding, and support to ensure autistic learners' success
Including:
<ul style="list-style-type: none"><li>• extra physical and material resources to support success for autistic learners that includes specialist staff, multidisciplinary support, time for consultation and collaboration, resources, and equipment</li></ul>
<ul style="list-style-type: none"><li>• funding and support for professional development training of allied health practitioners, educators, and school leaders</li></ul>
<ul style="list-style-type: none"><li>• novel approaches to ongoing support in rural and remote regions to support schools, allied health practitioners, families, and school systems</li></ul>
<ul style="list-style-type: none"><li>• additional support, support networks, and support groups for families navigating diagnosis for their child and across the lifespan</li></ul>
<ul style="list-style-type: none"><li>• additional support, support networks, and support groups for siblings</li></ul>
<ul style="list-style-type: none"><li>• ongoing financial support for Australian-based autism research</li></ul>
<ul style="list-style-type: none"><li>• physical and material resources to support built environment design, including professionals with knowledge and understanding to design effective inclusive learning spaces using appropriate co-design method</li></ul>
<ul style="list-style-type: none"><li>• evidence-based building guidelines promoting the inclusion and accommodation of autistic individuals in learning environments</li></ul>
<ul style="list-style-type: none"><li>• tailored physical and material resources to support success for autistic learners that includes specialist staff, multidisciplinary support, time for consultation and collaboration, resources, and equipment</li></ul>
<ul style="list-style-type: none"><li>• strengthen the accountability of states and territories and school leaders to ensure that policy is being implemented in practice</li></ul>

### 4.1.2.2 Research recommendation to support autistic learners to flourish

Table 40 provides a research recommendation to support autistic learners to flourish generated from the seven scoping reviews and REBAS empirical research data. This recommendation is expanded further in the table to detail how this could be achieved.

**Table 40: Research recommendation to support autistic learners to flourish**

Research recommendation
Ongoing commitment to research that deepens our knowledge of autistic experiences, heterogeneity and the complexity of autism and promotes research evidence to support autistic learners' success in schools
Including:
<b>A. More diverse academic and curriculum-based research exploring:</b>
<ul style="list-style-type: none"> <li>• broader academic areas and application of strategies across a range of academic/curriculum areas</li> <li>• students' acquisition of social or multimodal literacy skills through engagement with blended digital media creation</li> <li>• which adjustments of teaching materials are most appropriate for autistic learners</li> <li>• what best supports autistic learners in different subject areas</li> <li>• current teaching practices that work well for their autistic students</li> <li>• how challenges in one subject may influence another</li> <li>• the link between transitions and academic success</li> <li>• what effect academic needs have on autistic learner's next steps after school e.g., career pathways, vocational education and training, and university education</li> </ul>
<b>B. More classroom-based research that:</b>
<ul style="list-style-type: none"> <li>• develops more socially valid classroom-based research that has fidelity across whole school, year level, and individual classrooms</li> <li>• evaluates classroom-based 'intervention' trials to assess how they can be translated from 1:1 research contexts</li> <li>• captures built environment post-occupancy evaluation case studies including observation and autistic learners' perspectives</li> </ul>
<b>C. Increased diversity in research design that reduce risk of bias and monitoring of adverse effects including:</b>
<ul style="list-style-type: none"> <li>• large scale studies</li> <li>• longitudinal studies to follow student progress</li> <li>• randomised control trials for specific programs and supports</li> <li>• qualitative research to get a deeper insight into autistic learners/teachers/parents' views</li> <li>• mixed methods</li> <li>• higher ecological and social validity measures</li> <li>• evaluations of skill maintenance post research</li> <li>• innovative single case study designs that can examine the outcome of whole classroom or whole school approaches</li> </ul>



## Research recommendation

### D. Wider diversity in participants and geographical location including:

- greater focus on younger (under 8) and older children (12-17)
- autistic students with co-occurring conditions such as intellectual disabilities, specific learning disorders, communication disorders, attention deficit hyperactivity disorder, anxiety disorders, and mood disorders
- increased diversity in participants e.g., intersectionality, multiple marginalities, hard to reach participants, gender (beyond binary male/female), sexuality, identity, geographical location, race, culture, ethnicity, minimally verbal, older and younger children, intellectual disability, low socio-economic status
- multiple stakeholders' perspectives
- built environment design professionals, disability design consultants, and government stakeholders involved in educational building procurement
- student perspectives at the intersection of autism and other disabilities, cultures, identities, and complexity in needs
- research that broadens geographic and social economic diversity across contexts (e.g., internationally, nationally, regional, rural, and remote)
- more Australian produced research (reflecting our unique geographical, cultural, and socio-economic diversity)

### E. Built environment and learning space research that:

- investigates effects of built environment and learning space design on autistic learners and those who are marginalised in multiple ways
- focuses on the design and evaluation of inclusive built environments and learning spaces to support neurodiverse learners
- supports and develops methods and protocols for the collaborative co-design of learning spaces with teachers, students, and parents
- supports the development of evidence-based building and refurbishment guidelines promoting the inclusion and accommodation of neurodiversity in learning spaces and the broader built environment
- investigates effects of built environment and learning space design on autistic learners and those who are marginalised in multiple ways

### F. Wellbeing research that further investigates:

- anxiety, depression, mental health, wellbeing, and quality of life in autistic learners of different ages
- trauma and autistic learners
- approaches to support connectedness and belonging, and minimise risk of bullying
- burnout – teacher, parent, student
- masking/camouflaging and autistic learners
- positive approaches to supporting behaviours experienced by some autistic learners in school environments

### 4.1.2.3 Practice recommendation to support autistic learners to flourish: Maximising success and reach – professional learning, support, and translation to practice

Table 41 provides a practice recommendation to support autistic learners to flourish generated from the seven scoping reviews and REBAS empirical research data. This recommendation is expanded further in the table to detail how this could be achieved.

**Table 41: Practice recommendation to support autistic learners to flourish**

Practice recommendation
<p><b>School leaders, educators, allied health and associated paraprofessional supports operate with deep knowledge of autistic experiences, heterogeneity, attributes and the complexity of autism and its place in all areas of student engagement including academic, executive function, social-emotional, behavioural, sensory, and identity considerations.</b></p> <p><b>Achieved through ongoing professional learning, support and coaching for school leaders, educators, allied health, and other professionals.</b></p>
<p>Ongoing professional learning builds awareness and ensures the implementation of practices that:</p> <ul style="list-style-type: none"> <li>• reduce anxiety, behavioural, bullying, and social challenges for autistic learners in the school environments</li> <li>• support autistic perspective and identity within their education</li> <li>• nurture an inclusive school climate that supports connections, a sense of belonging, peer acceptance and connections</li> <li>• support students’ executive function, social networks, self-regulation, and wellbeing</li> <li>• reduce environmental challenges e.g., sensory experiences within the school environment</li> <li>• promote strong connections and communication in home school partnerships</li> <li>• increase awareness and understanding of risk of multiple marginalities for this group of learners and in turn reduce barriers to learning for autistic learners at risk of multiple marginalities</li> <li>• promote autistic students’ self-determination and agency</li> <li>• support wellbeing of educators and parents, to reduce burnout</li> <li>• build understanding of how trauma and potential trauma can be identified, reduced and responded to (e.g., teaching in trauma-informed ways)</li> <li>• develop awareness and understanding of socially valid evidenced-based practices that support learners with intellectual disability, communication, or behavioural needs and that can be implemented with fidelity in school environments and include respect for student autonomy, self-determination, and causal agency</li> <li>• draw on professional learning on culturally responsive practices</li> <li>• build awareness and understanding of gender/sexual diversity and implementing practices that are supportive and promote the success of this group of learners</li> <li>• promote recognition and understanding of the educational needs of siblings and implementation of supports to ensure their success in schools</li> <li>• recognise the importance of the sibling relationship – as important ‘agents’ in the development of autistic learners – but need support themselves</li> <li>• enhance understanding and implementation of neurodiversity-affirming approaches and multiple attributes influencing autistic learners’ success</li> <li>• increase professional development opportunities regarding inclusive and equitable practices for educators</li> <li>• adopt approaches that support connectedness and belonging and mitigate risk of bullying</li> </ul>

## 4.2.2 Recommendations for inclusive education policy, research, and practice

Note: These recommendations are drawn specifically from the inclusive education policy review and analysis of Australian states and territories inclusive education policy and strategy.

**Table 42: Recommendations for inclusive education policy, research, and practice**

<b>Recommendations for inclusive education policy, research, and practice</b>	
<b>A. Inclusive education policy recommendations</b>	
i)	States and territories documents should include definitions of inclusion (as in General comment No. 4, United Nations CRPD, 2016) and equity consistently across their educational policies, strategic plans, and documents guiding school practices. This will help all professionals working with learners and their families develop shared understanding and agreement about what inclusive education is and what it is not.
ii)	States and territories should adopt the General comment No. 4 (United Nations CRPD, 2016) definition of inclusive education in their policy and plan documents to accelerate systemic reform and promote genuine inclusive practice.
<b>B. Inclusive education research recommendations</b>	
i)	Involve key educational stakeholders to work in partnership with researchers to progress a national inclusive education system.
ii)	Commitment to participate in comparative and international research across different contexts to address inclusive education policy to practice gaps.
iii)	Increase research focused on student, parent, and teacher perspectives to better understand the perceptions, challenges, and successes associated with inclusive schooling.
iv)	In-depth studies about how schools and educators understand and enact inclusive education.
<b>C. Inclusive education practice recommendations</b>	
i)	States and territories need to ensure that professionals supporting learners and their families understand and support policy goals for promoting inclusion and equity in education.
ii)	States and territories need to establish systems for monitoring the presence, participation, and success of all learners and use this evidence to make informed decisions for fostering greater inclusion and equity.
iii)	Actions need to be taken to define leadership goals and roles at different levels and enhance education leaders' capacity, commitment, and accountability.
iv)	Plans and strategies should identify, challenge, and remove potential non-inclusive, discriminatory, and inequitable practices in schools and other learning centres.
v)	Greater structure and system support for inclusive education is required: all schools should be expected and supported to be inclusive schools.
vi)	Special education services need to be included in strategy and planning to progress inclusive education.
vii)	Education sectors should work collaboratively with other government sectors to progress inclusive education.
viii)	Mechanisms to ensure transparency for, and access to, the use of resources to support equity and inclusion need to be established.
ix)	Short- and long-term planning is needed to support collaboration, sharing of expertise, resources, and funds to support a unified system of inclusive education.
x)	Actions need to be taken to ensure that schools, teachers, and school leaders use a range of pedagogical strategies to cater to learner differences. This needs to be outlined in educational policies, and implementation plans need to be included in strategic plans.

## Recommendations for inclusive education policy, research, and practice

- i) Schools should develop and monitor effective procedures for listening to students' views regarding their learning and aspirations.
- ii) Teachers should have the knowledge and skill to assess learning progress and support students at risk of underachievement, marginalisation, or exclusion.
- iii) School staff should be expected to work closely with parents to strengthen support for learners at risk of underachievement, marginalisation, or exclusion.
- iv) Planning and action need to occur to strengthen initial training so that teachers and support staff can respond to diversity more effectively.
- v) Increase professional development opportunities regarding inclusive and equitable practices.

## Conclusion

This REBAS body of research highlighted that for autistic learners to thrive in their education it is important that deeper knowledge and understanding is needed regarding the great diversity, heterogeneity, attributes and experience of autistic learners and the complexity of autism. This requires ensuring appropriate inclusive education policies are in place and are translated and actioned in practice in educational settings. The research identified key factors that need to be considered and provided recommendations for policy, research, and practice that can help deepen knowledge and understanding of autistic learners and ensure they flourish in educational environments. Barriers to autistic learners' education were identified as a lack of adequate understanding of autism and other kinds of neurodivergence, particularly in school settings. Concerns were also raised about the capacity of schools to include and support autistic learners, educators lack of understanding of how to cater to individual differences, and the limited use of appropriate inclusive pedagogy. To enable autistic learners' educational engagement and achievement, emphasis should be on increasing understanding across all stakeholder groups, including policymakers, parents/carers, educators, allied health, and peers, as well as forging stronger partnerships fostering clear and regular communication between all stakeholders. The significance of having more autistic perspectives in such collaborations and professional development programs is fundamental to their success. It is critical to support autistic learners to flourish in education settings promoting their growth, development, learning and holistic wellbeing. When autistic learners can develop their potential and live well and when teaching and learning are of a high quality and meaningful to them, their relations will prosper.

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## Our values



### **Inclusion**

Valuing lived experience



### **Innovation**

Solutions for long term challenges



### **Evidence**

Truth in practice



### **Independence**

Integrity through autonomy



### **Cooperation**

Capturing opportunities together



# AutismCRC

**Independent national source of evidence for best practice**



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