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To cite this article: Jacqueline Roberts & Amanda Webster (2020): Including students with autism in schools: a whole school approach to improve outcomes for students with autism, International Journal of Inclusive Education, DOI: [10.1080/13603116.2020.1712622](https://doi.org/10.1080/13603116.2020.1712622)

To link to this article: <https://doi.org/10.1080/13603116.2020.1712622>



Published online: 16 Jan 2020.



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Including students with autism in schools: a whole school approach to improve outcomes for students with autism

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ABSTRACT

In the last two decades there has been a rapid increase in the number of students with autism who are enrolled in mainstream schools. Since the publication of the Salamanca Statement in 1994, the right to inclusive education for all children, including those with disabilities, has been increasingly recognised. This has created tensions and challenges in schools as staff struggle to meet the unique needs of these students and their families. Previous research has found that school staff often lack knowledge about the specific characteristics and needs of students with autism and the practices that effectively support these students in inclusive education settings. A comprehensive approach is needed to build capacity of school leaders and staff to create autism-friendly cultures, implement evidence-based strategies, and improve outcomes for students with autism. This paper describes the development and theoretical foundation of the School-wide Autism Competency approach, which provides schools with a whole-of-school approach to supporting students with autism. The approach brings together research on effective practices of school leaders and evidence-based practices for students with autism.

ARTICLE HISTORY

Received 11 July 2019
Accepted 4 January 2020

KEYWORDS

Autism; education; inclusion; whole school; competency

Introduction

The number of students with autism¹ attending mainstream schools in inclusive settings has risen relative to the total population, particularly over the past ten years. In Australia, a significant percentage (52%) of children and young people with autism are being educated in mainstream classrooms, while others spend time in both mainstream and special education classes or attend special schools (Australian Bureau of Statistics (ABS) 2016). Prevalence in school systems in different states of Australia vary; for example, in Queensland 2.6% of students in state schools had a diagnosis of autism in 2016, while in NSW the figure in 2015 was 1.8% of students in state schools. In regional and rural areas, there may be no special class or school, and all students with autism (with the exception of those who are educated at home) are in regular classes in public or private mainstream schools (Roberts 2015). These numbers suggest that students with autism are no longer

the exception in mainstream schools, and teachers can reasonably expect to have one or more of these students in their classes each year.

A key challenge for mainstream schools is providing appropriate ‘child-centred pedagogy that is capable of successfully educating all children, including those who have serious disadvantages and disabilities’ (UNESCO 1994, 6). This is particularly true for students with autism, with their unique profiles of strengths and difficulties. Students may demonstrate a range of intellectual and cognitive processing skills and frequently exhibit a marked difference in verbal and nonverbal functioning (Joseph, Tager-Flusberg, and Lord 2002). It is also common for students with autism to underachieve relative to their cognitive ability (Ashburner, Ziviani, and Rodger 2010) or to experience particular challenges in some academic areas, while doing very well or even displaying exceptional skills in others (Keen, Webster, and Ridley 2016).

Students with autism may also exhibit co-morbid mental health problems such as sleep disturbances or eating disorders (Williams and Roberts 2018), and as many as 40% of students with autism experience co-morbid anxiety disorders (van Steensel, Bögels, and Perrin 2011). Other difficulties may include hyperactivity and attention difficulties, executive functioning deficits, social communication difficulties, self-injurious behaviours, stereotypic behaviours and elevated emotional sensitivity (Cappadocia, Weiss, and Pepler 2012). In a large-scale study (Saggers et al. 2016), students with autism nominated executive functioning, social-emotional management and fine motor skills as areas in which they experienced the most difficulty, but also reported that academic and sensory issues have an impact on them at school. Students with autism are also more likely to be bullied than either typically developing (TD) students or students with other identified needs (van Roekel, Scholte, and Didden 2010). Thus, while teachers may rightly have high academic expectations for students with autism, the associated characteristics of autism and comorbid conditions may make the learning setting highly challenging for these students (Roberts 2015) with the result that schools often struggle to support their needs.

Research indicates that students with autism are not obtaining the support they need and often fail to successfully participate and achieve, both in school (MacNeil, Lopes, and Minnes 2009; van Steensel, Bögels, and Perrin 2011; White et al. 2009) and post-school environments (Burgess and Cimera 2014). This is reflected in high exclusion rates for students (Brede, Remington, Kenny, Warren, and Pellicano 2017) and in poor employment figures for adults (Australian Institute of Health and Welfare 2017). In school, students with autism are more likely to receive suspensions (MacNeil, Lopes, and Minnes 2009; van Steensel, Bögels, and Perrin 2011; White et al. 2009), experience school avoidance (Schroeder et al. 2014), underachieve (Matson and Nebel-Schwalm 2007) or withdraw from school altogether (Sciutto et al. 2012).

Teachers report that they often feel ill-equipped, stressed and anxious about meeting the needs of students with autism in their classrooms (Beauchamp 2012; Roberts and Simpson 2016). Research also indicates that school principals lack sufficient knowledge to make decisions, manage resources and create school cultures and programs that support students with autism (Horrocks, White, and Roberts 2008). Data collected from students with autism reveals that education professionals require a greater understanding of the environmental factors that impact on their participation at school (e.g. noise, crowding, limited mobility opportunities, curriculum demands, and changes in routine) as well as understanding the ways in which these factors may exacerbate

already heightened levels of stress and anxiety (Roberts and Simpson 2016). Students rated empathetic and patient teachers; social support and friendships; and interesting work as the most helpful supports at school (Saggers et al. 2016). Teacher flexibility was also identified by students with autism as a factor supporting successful inclusion (Roberts and Simpson 2016).

Given these challenges, it is not surprising that parents express frustration with the quantity and quality of support their children with autism receive in school settings and are increasingly resorting to home schooling and other alternative options (Hurlbutt 2011). Common issues reported by parents include poor school-parent communication, exclusion of parents from decision-making processes and lack of awareness and use of strategies that address the specific needs of students with autism (Emam and Farrell 2009).

Effective education practice for students on the autism spectrum

Researchers have identified practices that characterise effective school programs and strategies for children and young people with autism (Iovannone et al. 2003; Simpson, De Boer-Ott, and Smith-Myles 2003). These practices are summarised in **Table 1**. The most consistently cited elements are family involvement and collaboration, and modification and structuring of environment, curriculum and instruction. Also important are availability of resources; support for staff and students; and administrative, attitudinal and social support. Other practices that support students with autism include staff awareness and knowledge of autism, a functional approach to challenging behaviours, transition support, systematic instruction, generalisation strategies, assessment and evaluation, multidisciplinary collaboration, individualised strategies and supports, and specialised curriculum content. It has also been suggested that parental involvement is directly linked to parents' satisfaction with the child's education program (Zablotsky, Boswell, and Smith 2012).

Lipsky and Gartner (1997) reviewed the research on effective inclusive school environments for all students and found that effective schools incorporated seven key elements: visionary leadership, collaboration, support for staff and students, effective parental involvement, refocused use of assessment, appropriate levels of funding, and curricular

Table 1. Characteristics of effective school programs for students on the autism spectrum

Characteristics	Dawson and Osterling (1997)	Simpson et al. (2003)	Iovannone et al. (2003)
Family involvement and collaboration	✓	✓	✓
Adaptation and modification to environment, curriculum, instruction including provision of predictability and routine	✓	✓	✓
Availability of resources and specific support for staff and students		✓	✓
Administrative, attitudinal and social support		✓	
Staff awareness and knowledge of autism		✓	✓
Functional approach to challenging behaviour	✓		
Transition support	✓		
Systematic instruction		✓	✓
Detailed generalisation strategies	✓		
Assessment Evaluation and review		✓	
Multidisciplinary collaboration and commitment		✓	
Individualised strategies and supports	✓		✓
Specialised curriculum content	✓		✓

adaptation and effective instructional practices. As Lynch and Irvine (2009) demonstrate, many of these elements overlap with the characteristics of successful school programs for students with autism. Researchers have found that the most important factor in inclusive programs, however, is the belief of school leaders that students with autism can achieve in inclusive school environments (Horrocks, White, and Roberts 2008), and that all students can learn and achieve if they are provided with meaningful support and instruction (McLeskey and Waldron 2015). Researchers also highlight the importance of student-centred practice as a central component of effective inclusive school programs (Causton and Theoharis 2014). In 2011, Morewood, Humphrey and Symes proposed a whole school saturation model combining many of these same elements. Key elements of this model include a positive school climate, managing the school environment, professional development for staff and peer education. When put together, these bodies of research confirm that mainstream school programs must take a whole-of-school approach if they are to meet the needs of students with autism and support them to achieve their potential. As noted in the Salamanca Statement (UNESCO 1994) 'Each school should be a community collectively accountable for the success or failure of every student' (24).

A whole-of-school approach

The practices outlined above encapsulate current knowledge of what makes schools work for students with autism. Implicit in the application of these practices is the involvement of all stakeholders in the school. For example, creating structured environments and modifications will be most effective if implemented consistently across the school in both classroom and general school environments. Additionally, staff need a foundation of knowledge about the characteristics, strengths and needs of students with autism. Finally, a positive attitude is important for all staff, reflecting the high-value staff place on the inclusion of students with autism and the belief in these students' ability to achieve if provided with the right support.

Programs featuring a multi-tiered system of intervention and supports, have been effective in supporting school communities to create a comprehensive system of school-wide practices and to utilise data and implement strategies to support students at the school (Tier 1), group (Tier 2), and individual (Tier 3) level (Batsche 2014). In programs such as Universal Design for Learning (UDL), Response to Intervention (RTI) and Schoolwide Positive Behaviour Support (SWPBS), students with specific needs are supported first at the school or class level (Tier 1) through the provision of high-quality teaching practices and structured environments (Leach 2018). If this is not sufficient to meet their needs, students may receive short-term targeted intervention in a group setting with others who require further instruction to learn a particular skill (Tier 2). If a student continues to have unmet needs, they can receive support at the individual level through an individualised program or plan (Tier 3). The core feature of a multi-tiered program is the involvement of the whole school in a proactive approach to support students, and the understanding that high-quality flexible teaching practices are the foundation of support for students with diverse needs (Batsche 2014), including those with autism.

Researchers have suggested that multi-tiered approaches can be very effective in creating school environments and programs that support students with autism (Crosland and

Table 2. Multi-tiered system of supports for students with autism.

Tier 1: Whole School Level

- Active shared leadership – shared vision, inclusive school culture, student-centred focus, student voice, high expectations and shared responsibility for all students.
- Structural support, resources and funding – including effective use of physical and human resources, provision of planning time and reduced class size.
- Professional learning and support for school staff, parents and students – awareness and knowledge of characteristics of individuals with autism and evidence-based practice.
- Use of effective pedagogies including UDL.
- Proactive approach to communication, social emotional development, participation and engagement and positive behaviour support.
- Multi-disciplinary collaboration.
- Collaborative approach to working with parents.
- Use of class and student profiles.

Tier 2: Targeted Group or Class Level

- Classroom environmental management and support including effective instructional practices informed by knowledge of autism, highly supportive teaching environments, predictability and routine.
- Use of peer mediation and support.
- Lunch/special interest groups.
- Targeted skill building sessions.
- Literacy/numeracy groups.
- Transition planning.

Tier 3: Individual Level

- Assessment of individual characteristics, including characteristics of autism and/or other condition(s) including functional impact
- Implementation of individual learning plans/programs including, differentiation for autism characteristics such as repetitive behaviours and restricted interests, social communication, information processing differences.
- Use of functional behaviour analysis and behaviour plans.
- Curricular adaptation and autism-specific curricular content (e.g. focus on individual's motivation and special interests)
- Individual planning coordinated by key person, including multidisciplinary and parental involvement and student voice
- Assessment for program development and review, support for individual student transitions and generalisation

Dunlap 2012; Webster, Cumming, and Rowland 2017). In Table 2 an overview is presented of what practice and support for students with autism might look like across a multi-tiered system. For example, a Tier 1 level of support would be the use of class student profiles to identify students' strengths and needs. Support at the Tier 2 level might include targeted reading comprehension programs, while the use of functional behaviour plans for students with behaviours that challenge would be an example of Tier 3 support

Visionary leadership

The implementation of a whole school approach requires the active engagement of school leaders. Leadership has been consistently identified as a key factor in inclusive schools (Webster 2016). Additionally, teachers, parents and students identify structural support as important in school programs for students with autism (Carter et al. 2011). School leaders perform a variety of key roles in inclusive schools including acting as a visionary or moral leader, the instructional leader, and the administrative or organisational leader (Bays and Crockett 2007). Principals must also be able to synthesise new knowledge and practice within current systems-level policies and initiatives, as well as guide staff in aligning these policies with the particular needs of the students and staff at their school (Webster and Wilkinson 2015).

School leaders need access to research about evidence-based pedagogies if they are to create a culture of student-centred practice and flexible supports for students with autism. In addition to knowing about evidence-based practice for students with autism, principals must also actively support staff to utilise and review these practices consistently throughout the school (Dempster 2009). Fixsen et al. (2013) propose that this involves the creation of a ‘policy-to-practice’ loop in which leadership teams develop policies and structures to implement the use of evidence-based practice. Subsequently, school staff implement these practices providing the leadership team with feedback on the impact of these practices for stakeholders including students with autism. Principals in turn must be supported by regional leaders who create system-level processes and structures to facilitate the consistent implementation of these practices across schools. Finally, the support of external experts is often needed to build the knowledge base of the school about effective practices and to engage in collaborative problem solving as school staff integrate these practices within existing programs and pedagogies.

A ‘wicked’ problem

A ‘wicked’ problem is described as one that is difficult to define and has no definitive resolution (Rittel and Webber 1973). While interventions for students with autism have been well researched and evaluated (for example National Autism Center 2015; Wong et al. 2014), there is a lack of research into the translation of this knowledge into practice in schools (Guldberg 2017). The translation of research into practice for students with autism presents schools and families with a complicated and ‘wicked’ problem (Fixsen et al. 2013). Researchers have primarily concentrated on the identification and trial of practices in clinical settings, rather than on the steps necessary for their implementation in school or other real-life settings, while schools have focused on the provision of professional development for teachers working with individual students with autism. Educational utility of practices was examined in a systematic review of autism interventions by Bond et al. (2016), and while it was found that 59% of the intervention studies were conducted in educational settings, the question remains of how well these practices were implemented in schools outside of the research process. Schools need to engage in an active process where leaders work with the school community to actively develop the capacity of staff and organisational structures to embed these practices in their school culture and programs.

Informed by research on implementation science, Fixsen et al. recommend that to enact change and implement new practice, school leaders must utilise three drivers to build leadership capacity, develop confidence and skills of staff, and create organisational structures. Change involves schools moving through a series of stages to implement effective practice. In the *exploration stage* the leaders and staff create a shared vision of outcomes and steps needed to achieve these outcomes. In the *installation stage*, school staff plan for and gather the required resources and develop the staff's initial knowledge and skills to implement the strategy. The staff then move to the *initial implementation stage* and implement the identified strategies. In this stage, feedback is critical for revision of strategies and further development of support and resources required for the successful implementation of the practice. After these have been put in place, the school leaders and staff can enter the *full implementation stage*. Odom, Cox, and Brock (2013) have employed implementation science and the stages of implementation to support teachers in schools to implement evidence-based practices for students with autism.

Finding what works

What is clear from an examination of relevant research is that key themes identified for effective intervention and inclusion of children with autism in schools are consistent with the characteristics and principles of inclusive schools (Hoppey and McLeskey 2014; Lynch and Irvine 2009). Researchers stress the importance of leaders engaging with staff to create a shared vision and implement whole school strategies to develop and realise inclusive school programs. A system-wide, proactive leadership driven approach to changing practice in schools has been shown to be effective. The challenge lies in finding the best way to operationalise these principles and processes in schools to change their practice and improve educational outcomes for all students including those with autism.

In the next section, we describe a whole school approach for students with autism, which presents a comprehensive approach to addressing the unique needs of students with autism in inclusive school curriculum and programs. This model was developed from three bodies of research: effective leadership for student outcomes, best practice for students with autism, and effective practice in inclusive schools. The model has been successfully trialled in Australian schools. The results of this trial will be presented in a subsequent article, while this paper will focus on the development and process of implementation of the approach.

A school-wide autism competency approach

Consistent with Fixsen et al. (2013)'s implementation drivers, the core components of the School-wide Autism Competency (SAC) approach can be viewed across the dimensions of leadership, competency, and organisation. The SAC approach is designed to create leadership teams that utilise action research methods and lead staff in developing both their competency and the organisational structures and practices required to ensure that students with autism are achieving their potential within the school program.

Leadership

The first element of the School-wide Autism Competency model is the establishment of the leadership team to guide the implementation and evaluation of the approach at the school. The leadership team consists of a minimum of four people who bring different perspectives and skills to the process. These include: the principal, a parent of a student with autism, a special education leader, and a mainstream curriculum or education leader. In secondary schools (and if possible in primary), the leadership team also includes a student with autism. Other people who may play a role in the leadership team, are a parent of a neurotypical student, a student peer, and a special education paraprofessional or teacher's aide.

Each member of the leadership team plays a critical role. The principal serves as the visionary and administrative leader for the school community. By actively engaging in the implementation process and any professional learning required, the principal establishes the whole school approach as a priority for the school (Webster and Wilkinson 2015). The principal enables the staff to align this work with other system-level priorities and leads the creation of organisational structures and resources needed for the staff to plan and implement the agreed actions. Principals do this by guiding the staff in creating a shared vision for students with autism and making time and space for staff to collaborate during the implementation process.

The other members of the leadership team serve as instructional and content area leaders to build the competency of the school community in specific areas. The special education leader brings knowledge of students with autism and evidence-based practices to support these students, while the curriculum leader has knowledge of the academic curriculum. By working together, they help staff embed evidence-based practices for students on the autism in meaningful and feasible ways within the school curriculum and pedagogical practices. The parent of a student with autism ensures that any practices and programs match to the long-term strengths and needs of the students and their families. In order to meaningfully include parents in the team, meetings need to be scheduled at a time they can attend. An autistic perspective is provided by a representative of students with autism.

Action research

A second key component of the model is the use of action research processes as the leadership team guides the school community through the implementation stages identified by Fixsen et al. (2013). In action research, individuals are not research subjects, but joint constructors of the research, which focuses on community action toward a social problem (Kemmis and McTaggart 2013). Through the action research planning process, the team utilises a series of tools and processes to assess the school's current status in relation to effective practice for students with autism, identify gaps and priorities, plan actions to address these priorities, implement these actions, and evaluate their impact for staff, students and parents.

The first step in this process is to assess the school's current practice. This is done using the school profiling tool (Appendix 1). The tool is divided into sections informed by Dempster's areas of leadership for student outcomes, principles of good practice for

students with autism in schools (Roberts and Simpson 2016) and is consistent with Webster's blueprint for outcomes for students with autism (Webster 2016). Sections include: shared leadership, professional learning, conditions for learning, curriculum and teaching, and engaging with families and communities. Each section is matched to relevant research on effective practice for students with autism. The school autism leadership team rates current practice in their school on a three-point scale – fully in place, partially in place, not in place. Working with their staff, school leaders use this tool to rate areas identified as partially or not in place as high, medium or low priority for their action research plan. Once they have identified key priorities, the team sets specific goals for the development of strategies to address these priorities at the whole school (Tier 1) and class/group (Tier 2) levels. The team also determines what professional learning needs to be undertaken in order to develop the capacity of staff to implement these strategies. The team develops a timeline for implementing the strategies and evaluating their impact.

In keeping with the research on inclusive practice the model also focuses on the development of practice at the individual (Tier 3) level. The leadership team, in consultation with the staff, selects several students, who are representative of the range of students with autism in the school. The team works with these students' teachers, parents, the student and other relevant professionals to implement individual planning process. The process for individual student assessment and planning is as follows:

- (1) collaboratively determine vision (long term goals) for the student
- (2) assess student characteristics and implications/impact of those characteristics for home/school /community
- (3) prioritise
- (4) identify barriers and resources
- (5) determine goals for the student to address priorities and strategies to achieve those goals
- (6) implement strategies
- (7) evaluate and review

Through the planning process the student's teacher works with the school leadership team to determine the appropriate Tier1, Tier 2, and Tier 3 strategies to achieve specific goals for the student. Goals for individual students are evaluated utilising the Goal Attainment Scaling (GAS) a method of devising a set of goals with relevant persons, assigning weights to these goals, developing a set of expected outcomes for each goal, scoring the outcomes, and calculating a summary score of the outcomes across the goals (Schlosser 2004). The timeline for implementation is agreed on, and at the agreed time the team meets to evaluate the outcomes of both the school-wide and the individual strategies.

The action research process can be mapped against the stages of implementation described by Fixsen et al. (2013). The school autism leadership team correlates with Fixsen's executive management team and the teachers, parents, staff and students, act as the implementation team. During the *Exploration stage*, the team leads the school to develop a shared vision and a joint understanding of the nature of the work including an understanding of the current need and the use of the action research process to

address that need. It is during this stage, that the team uses the Whole-School Profile (Appendix 1) to assess the school's current practice and to establish priorities for action. In the *Installation Stage* the team develops their action research plan and identifies the resources and professional learning required to carry out the plan. The team also establishes the organisational and administrative structures needed to support these actions. During the *Initial Implementation Stage*, the action research plan is implemented, and the team meets at frequent intervals to evaluate the impact of these strategies and to adjust the plan if needed. Most importantly, barriers to the successful implementation of the plan are addressed in a systematic and timely manner. Once effective strategies have been established, the team then moves into the *Full Implementation stage* in which they take steps to ensure the strategies are embedded within the greater school program and culture and are sustainable.

A flow chart demonstrating the process utilised in the School-wide Autism Competency model is presented in [Figure 1](#).

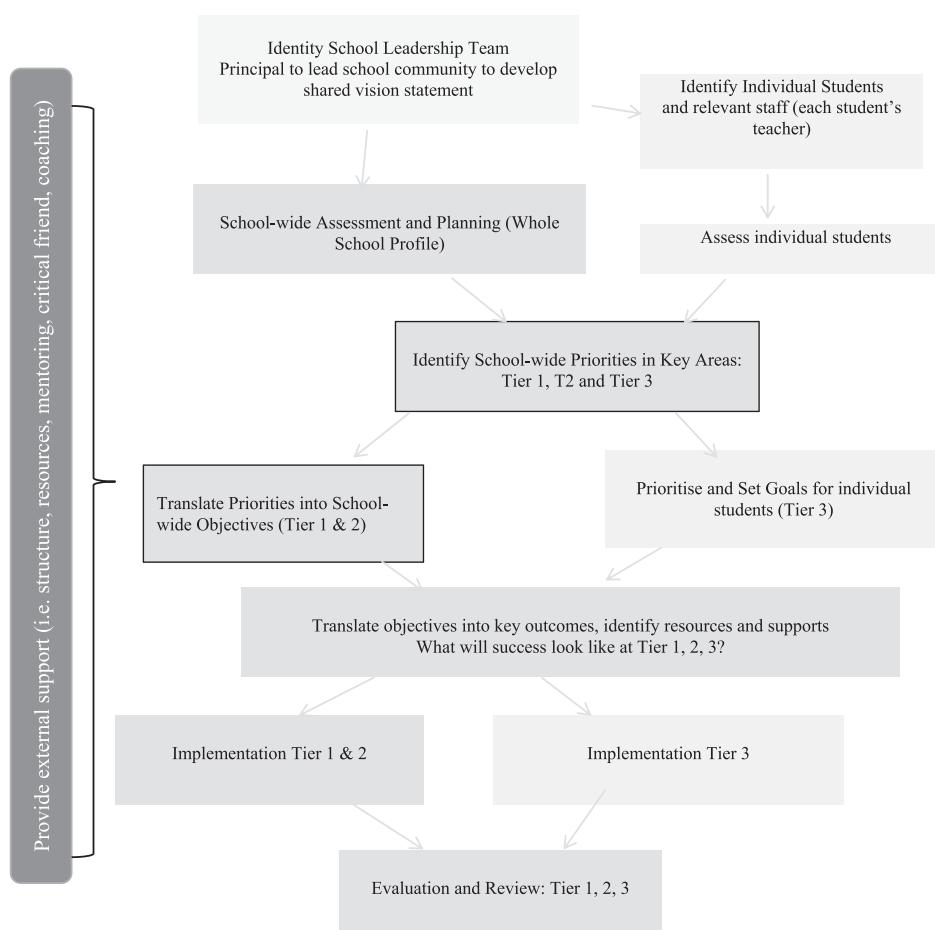


Figure 1. Process for assessment, planning and implementation at whole school, class/group and individual levels.

Systemic and expert support

Fixsen et al. (2013) identify one final element in their implementation model, which they describe as external supports. External supports are an important component of the School-wide Autism Competency approach. In the trial of the approach, external supports came from two sources. The first were the regional leaders who helped to create structures and resources that supported the schools and worked with school leaders to align the project with other system-level priorities. In particular, the regional team provided the school with funding for teacher release time and engagement of experts in evidence-based practice for students with autism.

The second form of external support came from a person who was designated as the critical friend/mentor/coach. A critical friend is someone outside the school who provides guidance and honest feedback (Carrington and Robinson 2004). Early in the process of trialling the model in schools, it became apparent that school leaders needed support to build their capacity to identify strategies, to address priorities, to develop skills and to retain a focus on the project in the face of other priorities. In the initial trial, this person was a member of the research team who had experience as both a school leader and expertise in evidence-based practices for students on the autism spectrum. As a critical friend, the research team member supported the school autism leadership team to implement each stage of the model and to align this with other school priorities. Most importantly, the critical friend helped school leaders to stay focused on the action research process and to regroup when school issues pulled the team's attention in a different direction.

School leaders are likely to need support to envision what effective practice for students with autism looks like and what impact this has on teacher practice and student outcomes in their school. Without this support, schools may find it difficult to evaluate the effectiveness of their practices for students. In the model, the school leadership team is most effective if they are supported to make decisions and mentored to help parents and staff to see each other's perspectives and ensure that everyone's voice is heard throughout the process.

Summary and conclusion

Despite legislative commitment to the inclusion of all students in mainstream schools in many countries over the past 25 years, the environment in mainstream schools remains uniquely challenging for students with autism, resulting in stress and distress for both students with autism, their families and for schools. Educational outcomes for this group, both academic and personal, are disproportionately poor in comparison to other disability groups.

Educational and personal outcomes for students with autism in mainstream schools are optimal when schools adopt a whole-school approach to the education of students with autism, with a focus on true inclusion. This involves incorporating the key elements described in the research as constituting good practice in autism intervention, particularly family involvement and collaboration, and modification and structuring of environment, curriculum and instruction. These elements are combined with research-based knowledge about successful inclusion of students with disabilities in schools. To date, researchers have

primarily focused on researching the implementation of specific individual practices or have explored the support needed for teachers and schools to implement these practices. As Guldberg (2017) explains, ‘The field is currently dominated by efficacy studies that report the success or failure of interventions in ‘ideal’ conditions that are carefully controlled’ (152). In contrast, the SAC approach provides leaders with a framework for implementing evidence-based practice for students with autism within the context of typical school environments and programs.

The SAC approach builds on multi-tiered approaches such as UDL, RTI and SWPBS. The focus of the SAC approach is on leadership and the creation of an inclusive leadership team to drive systemic change in the school. Key to the successful implementation of the approach in schools is an action research process designed to facilitate the translation of the research-based approach into practice. Stages involve the identification of the leadership team, school-wide assessment and planning across conditions for learning, shared leadership, curriculum and teaching, family and community partnerships and professional development. Once priorities have been identified by the leadership team in these areas based on the whole school assessment, goals are developed to address these areas and the build on strengths.

The SAC approach is informed by research on implementation science (Fixsen et al. 2013) and is designed to ensure full implementation across the whole school in a sustainable manner. Although researchers have utilised implementation science to support teachers to utilise evidence-based practices (Odom, Cox, and Brock 2013), the SAC approach utilises implementation science to support schools to implement a comprehensive approach incorporating a number of key elements for students with autism. Support for this process from regional education department staff and the engagement of an external coach/mentor to work with the school team throughout the process are essential components of the model. The model has been trialled in 3 schools in the northern region of Queensland Australia. The outcomes of the trial are reported in (Authors) (under review). Implementation of the SAC approach in schools will improve academic and personal outcomes for students with autism, have benefits for the whole school community including many other students with similar strengths and needs. Staff stress levels will be reduced and costs to the school will also be reduced with the implementation of this proactive positive approach.

Notes

1. The term ‘autism’ will be used in this paper and includes Autism Spectrum Disorder ASD (DSM-5), autism spectrum disorders including Asperger’s Disorder (DSM-IV) and Autism Spectrum Condition ASC.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Jacqueline Roberts is the inaugural chair of Autism in the Autism Centre of Excellence (ACE), Griffith University. Jacqui’s background in autism stretches back over 30 years. She has worked



in Aspect schools for children with autism as a teacher, speech pathologist, principal and Director of Services. Prior to her appointment at Griffith in 2011, Jacqui worked as a consultant and held several short-term fractional research appointments at different universities teaching autism studies and leading/managing research projects and professional development. Jacqui is a director of the Australian Advisory Board on Autism Spectrum Disorders providing input to the board on a national autism research agenda, and received the Asia Pacific Autism Conference (APAC) award for outstanding service to the autism community. In her current position as the director of the Autism Centre of Excellence (ACE) Jacqui is responsible for developing the research agenda focusing on research that will enhance outcomes for individuals with autism. The ACE also offers an extensive multidisciplinary postgraduate study program in Autism. In 2018 second edition of Understanding Autism. The Essential Guide for Parents was published. Jacqui co-authored the book with Professor Katrina Williams. In August 2019 The Sage Autism and Education Handbook was published. Jacqui is the Australasian editor in collaboration with Professor Rita Jordan (UK and Europe) and Associate Professor Kara Hume North America).

Dr. Amanda Webster is a community-engaged researcher at the University of Wollongong. Her research is focused on creating meaningful social impact and centres on leadership for inclusive education and community environments that support the achievement and self-determination of individuals diagnosed with autism or other disabilities and their families. She is actively involved in research projects with departments of education in Queensland, NSW and Tasmania, and is conducting several major research initiatives focusing on the role of school leaders, staff and parents in establishing effective school cultures and practices that will enable students with autism to achieve high quality outcomes across the lifespan. Dr. Webster's research has culminated in a number of peer reviewed publications including three research-based books published by Springer and Routledge overviewing case studies and models of practice for empowering and supporting individuals on the autism spectrum in community and school settings.

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Appendix 1

WHOLE SCHOOL PROFILE*

How Autism friendly is your school?

Jacqueline Roberts and Amanda Webster: Griffith University

Current Status			Feature	Planning Priority		
In place	Partly in place	Fully in place		Low	Medium	High
SHARED VISION (Purpose)						
			1. The school community, including all stakeholders, has developed a clear statement about its beliefs, values and vision for the education and outcomes of all students at the school including those students identified with ASD. 2. The school community, including all stakeholders, has communicated a clear statement about its beliefs, values and vision for the education and outcomes of all students at the school including those students identified with ASD.			
SCHOOL LEADERSHIP (CULTURE, VALUES, BELIEFS)						
			3. Leaders are actively involved in establishing directions and priorities for students with ASD. 4. Leaders take an active part in professional development. 5. Leaders establish and lead a collaborative team to: <ul style="list-style-type: none"> • actively gather data to inform decision making • actively make decisions based on evidence and data • analyse and plan to maximise use of resources • develop a school plan for students with ASD • implement a school plan that is inclusive of students with ASD • evaluate, review and revise the school plan as required 			
CONDITIONS FOR LEARNING (SCHOOL STRUCTURES, POLICIES, RESOURCES, ENVIRONMENT)						
			6. Individual planning process are in place for all students with ASD addressing individual student's strengths and needs. 7. Whole school accommodations are planned for and provided including: <ul style="list-style-type: none"> • playground supports • timetable flexibility • flexibility (e.g. in school uniform requirements) • staff/adult mentor is identified • specific 'sanctuary space' is identified • social supports in place (e.g. peer supports, strategies to manage bullying, social skills groups) • all students provided with information designed to develop awareness and understanding of ASD (e.g. sixth sense program) 8. School procedures, rules, and environment reflect the needs of students with ASD.			

(Continued)

Continued.

Current Status			Feature	Planning Priority		
In place	Partly in place	Fully in place		Low	Medium	High
			9. Resources are available to meet the learning needs of students with ASD.			
PROFESSIONAL DEVELOPMENT			10. Staff have knowledge and understanding about characteristics of students with ASD and the implications of these characteristics on learning and behaviour.			
			11. Staff have knowledge of evidence-based practice and effective strategies for students with ASD.			
CURRICULUM AND TEACHING			12. A learning support team is involved in developing a personalised learning plan that addresses the specific learning needs of students with ASD (i.e. communication, social, sensory, behavioural).			
			13. Students are involved in planning process.			
			14. Positive approach to behaviour including appropriate responses to 'powerful interests'.			
			15. Connections are made between individual plans and curriculum standards.			
			16. Transition planning at all levels including daily transitions to transitions in/out of the school.			
			17. Classroom supports and adjustments are planned, provided and presented visually and may include:			
			<ul style="list-style-type: none"> • schedules and other visual supports to provide structure and routine and assist participation & learning 			
			<ul style="list-style-type: none"> • Augmentative and Alternative Communication (AAC) in place as required. 			
			<ul style="list-style-type: none"> • social supports including peer support, social scripts and incidental teaching of social skills 			
			<ul style="list-style-type: none"> • homework support 			
			<ul style="list-style-type: none"> • highlighting salient information to support discrimination 			
			<ul style="list-style-type: none"> • adjustments to assessment & task complexity as required 			
			<ul style="list-style-type: none"> • sensory supports as required 			
			<ul style="list-style-type: none"> • support for development of emotion regulation and recognition 			
PARENT AND COMMUNITY SUPPORT			18. Families are involved in a collaborative planning process including the development of a personalised learning plan.			
			19. A multi-disciplinary team is available/accessed.			
			20. School processes welcome and involve families.			

*The authors acknowledge the Positive Partnerships Program (www.positivepartnerships.com.au) in the development of this tool.