

Managing self-regulatory behaviour in young autistic children in the Western Cape, South Africa



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Background: Self-regulation is the ability to understand and manage one's behaviour and reactions. It leads to stress management, reducing anxiety and well-being of individuals with Autism Spectrum Disorder (ASD). The most prominent clinical and phenotype characteristics of autism are associated with social and behavioural communication, language impairments. Researchers argue that autistic children have difficulties with self-regulation in their schooling life, which may impact their learning.

Aim: This study reveals how teachers understand and manage self-regulatory behaviour in the classroom.

Setting: The sample comprised six teachers who specialise in teaching autistic children from Autism Specific Schools and inclusive mainstream schools.

Methods: A qualitative research methodology was adopted to gain an in-depth understanding of teachers' perceptions of self-regulatory behaviour in autistic children. The study adopted an interpretive approach.

Results: The data revealed that teachers held positive views on self-regulatory behaviour. They valued self-regulatory behaviour as a tool to recharge and cope with the stress of functioning in the neurotypical world. However, they did not know how to manage the teaching of autistic children as well as adapting the environment for them to learn and be accepted.

Conclusion: It can be concluded that (1) there is a need for change in the way we perceive and support autistic children, (2) training programs and professional development are required in schools, (3) teachers need to adapt the learning environment to manage self-regulatory behaviour, (4) recognition of neurodivergence.

Contribution: The study contributes to better management of self-regulatory behaviour to support teacher training in the management of self-regulatory strategies.

Keywords: autism; stereotyped movements; self-stimulatory behaviour; qualitative research; teacher perspectives.

Introduction

Education is a human right (UNESCO 2022) – every learner has the right to receive quality education at a school irrespective of their ability (Department of Education 2001; Republic of South Africa 1996a). South Africa has an estimated population of 60 867 543 (Countrymeters.info 2019) people of diverse cultural and socioeconomic backgrounds. There are vast disparities across socioeconomic and racial lines, thus education services are limited especially for children with disabilities (Omotoso & Koch 2018). The special education sector is a product of the apartheid era where children were historically classified according to race and disability and children with specific disabilities such as autism could only be enrolled at a few schools allocated to the disability (Pillay, Duncan & De Vries 2022a). Even though in recent years there have been efforts to correct these legacies of apartheid, there is still limited access to education for children on the autistic spectrum (Pillay et al. 2022a).

The prevalence of autism in South Africa is still relatively unknown and underresearched (Pillay, Duncan & De Vries 2022b). Even though Western Cape is a better-resourced province compared with other provinces in South Africa (Pillay et al. 2022b), it is found that the pathway to educational and specialised services is inconsistent and a lengthy process. This has resulted in autistic children having to wait lengthy periods to gain access to screening and assessment, as

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well as there are stringent eligibility criteria for placement into an autism school (Lamb 2022).

According to the Western Cape Special Education Department Database statistics taken on 25 July 2022, there are 768 autistic children on the school entrance list and 769 on the Early Centre Development (ECD) list, and in 2022, there is an average of 68 new referrals received per month (Department of Basic Education 2022). However, this is only an estimate because the information changes daily as new referrals are received (Department of Basic Education 2022).

According to recent research from an organisation in America, the Centre for Disease Control and Prevention (CDC), it has been estimated that 1 in 59 children are diagnosed with autism spectrum disorder (ASD), which is a significant rise and yet there is no definitive information on the prevalence of ASD in South Africa. Autism spectrum disorder is a neurodevelopmental disorder affecting socialisation and communication with stereotype behaviours.

According to Pillay, Duncan and De Vries (2021), the lack of data makes it difficult to know the distribution and needs of children on the autism spectrum in education. A research study conducted in 2020 in the Western Cape Province of South Africa found a total of 940 children with ASD in a population of 1 154 353 children, representing a rate of 0.08% (below the 1% global estimate) (Pillay et al. 2021). As this percentage represents the Western Cape Province population, it cannot be generalised to the South African population.

It has been noticed that a substantial number of autistic children were refused placement in schools because they could not meet the enrolment criteria for schools. I regularly encounter the stress that parents of these children face in trying to find a school which will accept and educate their children. This was the rationale for embarking on this study. Half of the children on the ASD waiting list in 2016 were reported to be at home and not receiving any education or intervention (Pillay et al. 2021). In the Western Cape, the site of this inquiry, access to ASD assessment, intervention and therapeutic services is minimal (Franz et al. 2017; Van Schalkwyk, Beyer & De Vries 2016). Between 2012 and 2016, there was a 276% increase in the number of children with ASD waiting for schools in the Western Cape (Pillay et al. 2022a).

While some children with ASD have access to low-intensity support in the public sector (e.g. one 30-min session per month of either speech or occupational therapy), waiting lists for these services range from 1 to 6 months, and many children with ASD do not receive any of these services at all (Pillay et al. 2022b). Even in the private sector, services vary in quality, and many are not evidence-based (Guler et al. 2018).

According to the South African Schools Act 84 of 1996, the statutory school-going age is 7 years, and no government autism preschools exist (Republic of South Africa 1996b). Therefore, no child with ASD under the age of 7 years has access to public sector educational programmes (Van Schalkwyk et al. 2016).

For schooling to be effective, it is widely assumed that certain educational, social and physical conditions must be met (Göransson & Nilholm 2014; Holmqvist 2009). However, the challenges are well described with minor change over the last two decades. Fortunately, research has started to move from mapping towards systems strengthening (Simelane & De Vries 2021). Mapping is a change of thinking in identifying the current situation, needs, gaps and challenges in the autism service system to systems strengthening, which is more effective as it is the process of developing and implementing strategies to address those needs, gaps and challenges and to improve the quality, accessibility and effectiveness of the autism service system.

The literature indicates that many factors have prevented school placement such as a lack of resources, limited formal schools, teacher training, access to services, stigma and shortage of high-needs care facilities (Conway 2017).

A significant factor preventing school placement in most autistic children is self-regulatory behaviours (SRBs). This has impeded the smooth enrolment process of autistic children. Educational staff that were interviewed reported that they lacked understanding of how to manage SRB, thus resulting in autistic children failing school entrance tests. Examples of SRBs displayed by ASD children include spinning, hand flapping, repetitive behaviours of lining toys and finger flicking; these behaviours interfere with the child's functioning (Didden et al. 2012).

This study sought to understand how teachers manage and address SRBs in the classroom. A growing body of research has focused on how these behaviours can be restrictive for the autistic child providing evidence that these behaviours can also affect the well-being of the child in the management of oneself, influencing the behaviour in different environments, family functioning, as well as often leading to increased stress levels (Bishop et al. 2007; Lounds et al. 2007; Shattuck et al. 2007), and thus it has been advocated that they should be implemented to extinguish or replacing the behaviours (Koegel & Covert 1972; Troyb et al. 2014). Prior personal observations have shown that these SRBs are not understood and managed at an early age of the child. Many educational professionals view these as repetitive and stereotyped behaviours (RSBs) or 'autistic behaviours'. Teachers view certain SRBs as undesirable for learning, thus perceiving that their goal is to eliminate and reduce these behaviours for the child to learn (Prizant 2019).

Teachers often want to eliminate and reduce SRB as this disrupts the class and the child cannot learn. Thus, they want to fix the child, without asking the question of why the child behaves in that environment in a certain way.

This study is significant as it will contribute to the discourse on SRB in autistic children.

Aim and objectives of the study

This study aimed to explore teachers' knowledge and perspectives of SRBs in young autistic children.

Objectives of the study:

- Develop an understanding of how SRBs are understood and managed in educational settings.
- Determine teachers' perceptions of SRB in young autistic children.
- Ascertain the impact of SRB on autistic children.
- Establish whether teachers are equipped to manage the SRB of autistic children.

Literature review

The focus of this literature review is on developing an understanding of what literature or research talks about teacher confidence and competence in understanding and the management of SRB in young autistic children in school settings. The sections that follow include a description of ASD, firstly, explaining how one can recognise the traits of ASD and how teachers' understanding of ASD diagnosis can improve student outcomes in the classroom. Secondly, this review will focus on factors that trigger SRB in autistic children. It focuses on how teachers understand and manage these behaviours and what the research shares as enablers and barriers to teaching practice.

Autism spectrum disorder

The word 'autism' is derived from the Greek word 'autos', which means self (Kanner 1943). Autism spectrum disorder is reported in the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5) (American Psychiatric Association 2013) as a neurodevelopmental disorder, which is characterised by deficits in social and communication skills and restricted and repetitive (American Psychiatric Association 2013). The autistic child may lack interest in their environment and seem to exist in a very private world, in which they have limited abilities to successfully communicate and interact with others (National Health Institute of Mental Health 2020). Autism spectrum disorder affects a person in social interaction, communication and imagination in varying ways (Sicile-Kira 2014). Degrees in severity and symptoms may vary, as well as in daily functioning, and educational achievements regardless of culture, ethnicity, or economic status (Viljoen 2018). In the DSM-5, three levels of severity are articulated. Level 3 refers to severe impairments in verbal and non-verbal social communication skills; level 2 refers to social marked deficits in verbal and non-verbal

social communication, limited initiations and reduced or unusual responses to social overtures. Level 1 refers to difficulty initiating interaction, unusual or unsuccessful responses to social overtures, and possible limited interest in social interactions (American Psychiatric Association 2013).

In this traditional view, autism is understood as a checklist of 'deficits', typically including problems with social communication, difficulties with sensory stimulation and patterns of repetitive behaviour. From this understanding, a clinical approach has emerged, which involves attempting to rid children with autism of their 'symptoms' to 'normalise' them (Prizant 2015). The neurodiversity movement argues that forms of 'neurodivergence', such as autism, are inherent and valuable parts of the spectrum of human variation. There is no 'right' or 'wrong' way to develop. There is no 'normal' brain (Kapp et al. 2013). They further challenge the medical model's interest in causation and cure, celebrating autism as an inseparable aspect of identity.

What is important to point out is that although two children might be diagnosed with ASD, in all probabilities, their symptoms might not present in the same way (Wall 2010). An example of this is seen when one child may have difficulty with eye contact and speech, while another may have trouble with sensory processing and motor skills.

Self-regulatory behaviour: Is it a mistake to let a child with autism 'stim'?

Stereotyped and repetitive motor movements are characterised as core features in the diagnosis of autism; this characteristic is referred to by many autistic adults as 'stimming' (Kapp 2019). Stimming is short for self-stimulatory behaviour. Stims can be body movements or thought patterns that we repeat to help us keep ourselves regulated which help individuals manage their emotions. Fidgeting is a common form of stimming in neurotypical individuals. However, it is important to notice that some individuals engage in stimming more frequently than others, and in autistic individuals, stimming is often referred to as 'stimming behaviour'.

These self-stimulating behaviours, which are often referred to as RSB, help an individual self-soothe when stressed or otherwise trying to cope with their emotions. The lower-order repetitive behaviour can manifest in vocal stimming, spinning in circles, hand flapping, hair twirling, finger flicking and body rocking (Kapp 2019). The higher order can manifest in rituals, routines and the sameness of objects. Stereotyped behaviour lacks an obvious goal or function, but there is evidence that stereotyped movements are rewarding (Mason & Turner 1993).

Jaffey and Ashwin (2022) reported that teachers had different views on RSB in autistic children. Some teachers saw RSB as positive, because they thought that children enjoyed them, used them for self-regulation or expressed their emotions

through them. Other teachers saw RSB as problematic, because they thought that they could lead to unsafe, disruptive or compulsive behaviours. The authors did not make any conclusions about the actual outcomes of RSB for autistic children, but they observed that previous studies have found both positive and negative aspects of RSB in autistic adults (Collis et al. 2022; Kapp et al. 2019).

A research study conducted on the functional relationship between sensory stimulation and stereotyped movements has shown compelling evidence that there is a relationship that stereotyped movements are adaptive behaviours, which help individuals with autism to regulate their level of arousal (Gal, Dyck & Passmore 2002). While stimming may be alarming to outside observers or considered socially unacceptable, it serves an important purpose, especially for autistic people, it helps to regulate their emotions, cope with feelings of over- or under-stimulation, or better manage physical pain.

These SRBs are a hallmark of autism (Ravizza et al. 2013) and can be confusing to people unfamiliar with them, especially when one witnesses an autistic child randomly talking with excitement about what they are building with their Lego or singing the entire Barney discography when they are feeling sad. Many teachers and therapists have long puzzled over what RSB mean and how they should respond to and manage them (Efa 2015). Temple Grandin, a university professor with a diagnosis of autism, challenges the traditional view of self-stimulatory acts as a way of shutting out external stimuli and interfering with learning (Grandin 2002, 2007; Lilley 2018). Instead, she asserts that the most successful adults with autism had teachers who developed their strengths and incorporated them into their education. This approach not only enhances learning but also reduces self-stimulatory acts by increasing engagement and skill-building.

Prizant (2015) claims that the term 'stim', short for stimming, is often used by people imprecisely and with a negative connotation. He further explains that we all have specific strategies to stay well-regulated emotionally and physiologically such as listening to music or sucking a thumb (Prizant 2015). He argues that although autistic children engage in spinning, fluttering their fingers, playing video games or lining up toys, there is nothing inherently wrong with any of these behaviours (Prizant 2015).

There is a long history in both research and clinical practice of efforts to reduce, minimise or eliminate stimming behaviour in autistic children (Acraman 2021). Experts in this field thought repetitive movements resulted from deprivation or even trauma and that they hindered learning (Kapp 2019). This was referred to as 'garbage behaviour' (Kapp 2019). Kapp, for instance, recommends punishing stimming behaviour, either with aversive correctives (such as slaps, spansks or shocks) or by taking away or withholding rewards (Kapp 2019). Unfortunately, support aimed at controlling SRB remains popular (Jaswal & Akhtar 2019).

There is strong criticism by the autistic self-advocacy community opposing any type of punishment for SRB (Neuroclastic 2022). They suggest teaching the children strategies to regulate their emotions. Many adult autistics say punishment for SRB caused lasting harm to their self-esteem, undermined their sense of bodily autonomy, and left them with feelings of trauma (Villines 2019). This long history of misunderstanding and negative social stigma is revealed in a case study, which confirms that these behaviours are incredibly beneficial (Prizant 2015). This insightful critique of existing models by Prizant (2015), on autistic behaviours, suggests that there are many professionals unknowingly harming the very people they are trying to help. The traditional way of understanding and addressing autism, he argues, may be detrimental to the welfare of people with autism (Prizant 2015).

In Prizant's view (2015), most of RSB 'symptoms' are coping strategies designed to address the difficulties caused by autism. This view is also supported by other researchers that denying children these self-regulatory strategies may only cause them further distress (Kapp et al. 2013). Furthermore, Prizant expounds that from his experiences, many of RSB's symptoms can become effective tools for education if they are properly understood (Prizant 2015). This argument goes further to state that instead of trying to curb these behaviours, parents and teachers should play detective, seeking the causes of autistic behaviour to remove sources of distress. At the same time, parents and teachers should focus on enhancing the strengths and natural abilities of autistic children, rather than focusing on perceived challenges (Kapp 2019).

Social communication difficulties are a core feature of ASD and are known to be both troublesome and anxiety-provoking (Wenzel & Rowley 2010). According to a post by Terra Vance, autistic adult on SRB (Vance 2022) autistic people are very anxious and have excited nervous systems making it difficult to cope with communication with others; thus stimming provides reliable and self-regulated feedback as a response to an overwhelming, unfamiliar or unpredictable environment (Kapp et al. 2019). In the last decade, there are many neurodivergent movements, which have supported the growing body of scientific research that argues that RSB serves as self-regulatory or useful coping mechanisms, and they need to be respected for their 'neurodiversity' (Davidson 2007), yet little research has examined stimming from the perspective of autistic children or adults.

According to Terra Vance, article advocating for autistic representation and human rights profoundly states there are a host of traits that have been identified and documented by various researchers, but we need to be conscious that any discussion of 'autistic traits' and 'autism behaviours' that does not explain the nuance of why those behaviours happen and the lived experience of autistic people, not just in the present moment and not just what is observable by outsiders, is harmful (Vance 2022). This is further argued for greater recognition that any information about autistic people

should be informed by the lived experiences of 'many autistic' people (Neuroclastic 2022).

Many professionals teaching autistic children categorise SRBs as 'autistic behaviours' (Prizant 2015). Too often their goal is to reduce or eliminate these behaviours. According to Prizant (2015), a clinical scholar who spent many years of study in this field argues that autism is not a disorder, but a variation of human development, and that autistic behaviours are adaptive responses to environmental challenges. These are all human behaviours and human responses based on a person's experience (Goodall 2014).

He notes that '... teachers are still on a long journey to full acceptance of students on the autism spectrum as learners with potential' (p. 133). Moreover, this is concerning as many teachers are not equipped to manage and teach autistic children (Saggers et al. 2019) in inclusive schools as teachers' attitudes, personal views, perceptions and belief systems are crucial factors in ensuring the successful inclusion of learners with special needs and could either enhance or impede the implementation process (De Boer, Pijl & Minnaert 2011).

Self-regulatory behaviours are evident in all children and persist across an individual's lifespan (Murphy et al. 2005). Research shows that children with autism present higher levels of anxiety compared with typically developing children (Emerson et al. 2001). It is the underlying neurology of autism which is responsible for 'dysregulation' of the much-studied difficulty faced by people with autism in regulating their emotional responses (Samson et al. 2014).

Unlike autistic children, many neurotypical children can instinctively use strategies to cope with anxiety and sensory emotions. Therefore, it is important to teach autistic children at an early age to regulate their emotions and behaviours to avoid harming themselves or others.

Self-regulatory and other rehearsed behaviours can also be highly motivating and potentially used in teaching autistic children's skills such as concentrating, sharing and taking turns. This could be incorporated in the language of children with autism, which is multidimensional and varies depending upon the intellectual and social development. Some children may have difficulty developing language skills and understanding what others say to them, while others may have rich vocabularies and be able to talk about specific subjects in detail.

Mottron (2017) further expounds on the possible challenges of these behaviours while also creating opportunities to appreciate these behaviours as individual strengths and motivators.

Judgement by society

In addition to these findings, White et al. (2020) found that society is often not supportive of the differences and

neurodivergence of autism. We often find that autistic children and adults not surprisingly tend to find ways to camouflage and blend to be able to pass as neurotypical and to fit in as they do not want to go against the norm, a behaviour referred to as 'masking' (Neuroclastic 2021). Masking is knowing precisely what to do (norms) and what not to do (do not be your authentic self), but not having any natural inclination towards what is supposed to be done and not having any understanding of our belief in why these are the norms and why social ramifications exist for not conforming (Fede & Laurent 2022). Masking traits result in elevated rates of mental health conditions such as depression and anxiety among autistic people (Cage & Troxell-Whitmann 2019; Lever & Geurts 2016). As a result, the suicide rate is high in the autistic population with 66% of autistics having contemplated suicide compared to 17% in the general population (Cassidy et al. 2018; Segers & Rawana 2014; Zahid & Upthegrove 2017). This social judgement and rejection are seen from an early age as one feels like an outcast as other children tease and see autistic children being weird and displaying SRB. Suppressing these behaviours is far from beneficial as it takes a lot of energy (Fede & Laurent 2022).

Autistic people may hide their autism or their autistic traits to avoid being judged negatively. This is called concealment and camouflaging, respectively. These two strategies were often used together, with autistic individuals describing efforts to hide their diagnosis and purposefully minimise outward differences with neurotypical individuals to 'pass as normal' (Bagatell 2007; Botha, Dibb & Frost 2022; Drummond 2013; Humphrey & Lewis 2008; Leedham et al. 2020; Leven 2020; Mogensen & Mason 2015; Punshon, Skirrow & Murphy 2009; Schneid & Raz 2020). This social survival strategy varies from person to person, but the masking behaviours are such as scripting conversations, faking eye contact, imitating facial smiles, developing a repertoire of rehearsed responses to questions, and hiding or minimising personal interests.

Masking takes constant vigilance, control and effort, and it is not only exhausting but extremely damaging (Neuroclastic 2021). Fede and Laurent (2022) further state that it is damaging physically, mentally and emotionally. Not only does it wear one down and drains one's cognitive energy and resources but also it makes one feel physically weak and exhausted. This reinforces the view that you cannot be you; that your natural ways are not acceptable, so you camouflage and act to be normal (Galliger 2020).

Another published author and advocate of mindfulness for autism stated on her Facebook page that we often have sensory overloading and overpowering thoughts because of sensory input. As such, we must find ways to self-regulate such that 'stims are the equivalent of doodling as it allows us as autistic adults as a coping mechanism so that we can keep our concentration on other things' (Gerber 2015).

The aforesaid powerfully presents the views of people with autism and how these should be valued and consulted across all aspects of assessment, management and acceptance.

Methods

This study explored the strategies that teachers use to understand how they manage SRBs in young autistic children. As such an interpretivist approach is based on a naturalistic approach to data collection such as interviews and observations (Aityan 2022). Through interviews, the study considered the participants' experiences as it relates to gaps in knowledge and understanding of SRB in children with autism.

This section provides an overview of the participants involved in the study, the instruments used to collect data and the analysis conducted to report findings.

Design

A qualitative research methodology was used to collect descriptive data arising from understanding the SRB of autistic children.

Research questions

The main research question is: What strategies do teachers use to understand and manage self-regulatory behaviours in young autistic children aged 3–7 years in Western Cape, South Africa?

Subsidiary questions:

- What is self-regulatory behaviour?
- What are teachers' perceptions of self-regulatory behaviour in autistic children?
- How does self-regulatory behaviour impact an autistic child?
- Which teaching and learning strategies are used to manage self-regulatory behaviour in autistic children?

Participants and procedures

To understand the teachers' experiences and perceptions, individual semi-structured interviews were conducted. Questions were carefully constructed to cover the areas of interest of the study, allowing for any subsidiary experiences to emerge that may be relevant to the research. (see Appendix 1). In addition, questions were asked about the positive and negative aspects of self-stimulatory behaviours regarding understanding these behaviours. Participants were also given an opportunity for open questioning or any further comments.

The university's ethical principles guided the recruitment of participants through Facebook. The project summary was posted by some Facebook group admins, while other schools preferred to share it with their teachers via school email or WhatsApp. Four participants from six different schools

emailed their responses. Before each interview, the interviewer emailed the participants a project summary, a consent letter and some semi-structured interview questions.

Face-to-face interviews were conducted for 30–45 min. The interviewer discussed the potential risks and benefits of participation with each participant prior to the interview. All the interviews were audio-recorded on Zoom and transcribed verbatim by the interviewer. All data were de-identified. Three participants taught in specialist autism schools and three taught in inclusive schools. All teachers had more than 2 years of autism teaching experience. They were recruited because they spend significant amounts of time with various autistic children observing their behaviours in smaller classes and different settings than mainstream schools.

Methodologically, this qualitative inquiry was underpinned by interpretivism. According to Denzin and Lincoln (2005), interpretivism accepts that realities are subjective and that there may be different interpretations of these realities. Within this paradigm, the researcher and the participants are thus able to construct understandings separately and together. Furthermore, the interviews were conducted with high sensitivity including an in-depth exploration of clarity concerning the individual's interpretation of the phenomenon (Smith, Flowers & Larkin 2009). The objective was to access rich and reflective personal accounts regarding the participants' experiences in the understanding of SRB.

According to Aronson (1992), thematic analysis is often used by qualitative researchers for collecting data. As such, thematic analysis was used in this study as it included extensive discussion about the major themes that emerged from analysing the data collected. The findings from the interviews were organised into categories and themes. The use of thematic analysis was therefore relevant to determine the presence of concepts, phrases, categories and themes, including extensive discussion of the major themes that emerged from the data collected (Aronson 1992).

The transcribed data were carefully scrutinised and coded using themes representative of the participant's responses. It was analysed for patterns and trends and there was the implementation of the six steps for thematic analysis (Braun & Clarke 2006). From this, the data were then organised into overarching categories and analysed against a theoretical background of the literature reviewed. The in-depth interviews were applied to the criteria of credibility, dependability, confirmability and transferability (Lincoln & Guba 1986).

Ethical considerations

An ethics application for the study was made and approved by the Massey Ethics Committee, Ethics Notification Number: 4000025836. This study was deemed minimal risk prior to commencement. In addition, approval was requested from

the Western Cape Province Education Department, Directorate for Research Services, Reference Number: 20220728-4633 to allow the teachers to participate in this inquiry. The inquiry adhered to ethical principles of informed consent, anonymity and confidentiality and the right to withdrawal.

Results and discussion

This inquiry set out to understand teachers' perspectives on understanding and managing SRBs using an interpretive approach. In presenting the results, the following abbreviations and grammatical representations will be used, i.e. P1/Participant 1.

Theme 1: Adequate knowledge and understanding of self-regulating behaviour in autistic children

The findings suggest that teachers have adequate knowledge and understanding of self-regulating behaviour. Teachers could identify the characteristics of autism within the context of both the medical and social models. This was further iterated by a participant:

'DSM5, obviously is a medical approach but for me, I feel the social is more important to me ..., it plays a really big part in the development of the child I believe one day, maybe losing their diagnosis' (Participant 1)

For example, one of the participants referred to an autistic child as being:

'Neither higher nor lower functioning, scattered profile ... I like to use the picture of a road map ... the road in the brains is connected differently ... takes longer to process information, maybe there's roadblocks.' (Participant 2)

'It is a brain disorder, children just think differently, take longer to process the information ... affects ... their social skills. It's important for them to do these things, it is how we respond to that, as educators.' (Participant 6)

'All exhibit completely different behaviours Repetitive behaviour ... stimming, when a child is overstimulated, they will stim.' (Participant 1)

'So, there is no hard and fast rule that tells you what to do in those kind of the impulsive situations I can see it coming I need to get between them ... take him out of his class ... until he's regulated his behaviour. So, it's more the remove and cope with.' (Participant 5)

The findings reveal that teachers view self-regulating behaviours positively and viewed them as helpful behaviours as well as highlight some behaviours as problematic when they posed a risk to the child or others. They described SRB (stimming) as a series of repetitive movements such as body rocking and finger flicking, among others.

One of the key findings indicated that although teachers viewed SRBs as automatic and unmanageable, none reported that they disliked this behaviour. The teachers listed anxiety, sensory overload, difficulties with social skills, social

interactions, noise and communication skills as factors impacting sensory overload. The data reveal that teachers view SRB as a coping and calming mechanism allowing the autistic child to be in control and it may be a response to sensory overload or overpowering thoughts. In addition, the findings imply that teachers consciously recognise the value of self-regulating behaviour and accepting the 'self' as different from others.

Theme 2: Perceptions of self-regulating behaviour

The findings from the study suggest that there must be a shift in understanding SRB (stimming) by reframing one's experiences of the condition and changing the flawed understanding that the autistic child's SRB needs to be fixed. Teachers view a child's SRB as different where some have movements such as running, pacing, singing, hand flapping, grunting, finger flicking spinning and other forms of stimming. Teachers reported that autistic children would engage in RSBs as a response to external stressors, and this was observed to be calming:

'It depends on how the stim is, is how we control them. So, like with the one boy that screams, we have to pick him up and hold him.' (Participant 4)

'... if child bangs himself, or you know self-harm, or whatever, to take the child out of the classroom, and just bring her into a calmer setup, like the sensory room.' (Participant 6)

'It's a tough question, not in that you can answer it, but is important for them to do these things. It is how we respond to that ..., then 'it can be seen as a negative, then the child's behaviour starts showing.' (Participant 6)

Teachers viewed these behaviours positively and saw them as an adaptive way in which pupils regulated how they felt. Certain specific RSBs were especially associated with a self-regulatory function. Many of the teachers stated that they were reluctant to intervene when the children engage in this self-stimulatory behaviour. They also expressed how they reacted differently depending on the child's emotions. These expressions were not considered to be purposeful forms of communication. However, teachers were able to use the RSBs to recognise and interpret the child's emotional state. The expressive nature of SRBs was therefore significantly positive, with teachers able to use their interpretations of RSBs to understand the experiences of the child and respond appropriately to them.

Theme 3: The impact of self-regulatory behaviour

The data revealed that teachers do not necessarily view self-regularity behaviour as positive or negative. Instead, it should be viewed as how it impacts the child's environment:

'It is not about positive and negativity, it's about how it impacts their environment. So, are they self-harming themselves? Are they self-harming others, and how can we step in to help them and support them? I do not see it as a negative behaviour because it's the only way they know how to cope, that is the way they're

understanding things and it's our job to help them find different ways of coping.' (Participant 1)

She states, 'I wouldn't say it's a positive and I wouldn't say it's negative', this behaviour is a form of stimming whereby the child is expressing feelings of frustration or helplessness. She further reiterates that 'stimming can be misunderstood by many people as children are being naughty but agrees that even neurotypical children all have coping mechanisms'.

Thus, P2 states it can be the environment as it depends on why they were doing the behaviour whether we'd said something or not:

'I toyed over this one ... because I thought it is actually both. Sometimes it is positive because it helps them but other times it is negative because they're engaged in their stimming and what they're doing, that they lose focus.' (Participant 2)

Even though P2 was unsure at first, she agreed that it had a positive and negative impact on learning. She perceived SRB as problematic when it interfered with learning as it affects their focus. P5 mentioned it was the context in which the behaviour occurs that determines the likelihood of a negative outcome. According to the aforesaid teachers' views, it was mentioned that it was necessary for the children to self-regulate as sometimes it is difficult to cope with the demands placed on them. Some behaviours were thus viewed as not only positive behaviours but also as essential behaviours. These behaviours may thus appear purposeless but could have positive effects on attention, concentration and stress. Perrykkad and Hohwy (2020) elaborate that predictive processing shows how seemingly pointless actions such as fidgeting in fact can serve an uncertainty-reducing function. To resolve mounting uncertainty about the world, autistic children can perform simple and precise actions, confirming SRBs:

'If we were to stop them to do any of these, I think that would be chaos in the classroom ... and I think we would lose them. I do not think teaching would be able to take place if you just prevented them from doing.' (Participant 3)

'So, when a child needs to self-regulate ... we take them to the OT room, or the sensory room and now have an amazing place outside' (Participant 6)

It is argued that instead of trying to curb these self-stimulatory behaviours, teachers should play detective, seeking the causes of 'autistic' behaviour to remove sources of distress (Prizant 2015). The data reveal that teachers valued focusing on enhancing the strengths and natural abilities of a child with autism, rather than focusing on perceived self-regulatory challenges. Therapies based on repetitive manipulation of objects (e.g. small foam 'stress' balls) have been found to increase focus and learning performance in some contexts (Ring 2018). Research has found that this SRB mentioned earlier provides a sense of control over one's body and the environment when other areas of life are out of control (Goldfarb et al. 2021). It thus gives the autistic child a sense of ownership over one's actions if their sensory needs are not met.

Theme 4: Stereotyped behaviour in autism

This research sought to understand the views of teachers regarding sensory overload of the autistic child often referred to by teachers as the 'out-of-sync' child. This phrase can be misinterpreted as derogatory as it encourages a stigma attached to stereotyped behaviour. But according to Kranowitz (2005), 'out of sync' is the inability to use the information received through the senses to function smoothly in daily life. These children sometimes struggle with everyday things that may seem simple to any other child or adult because they do not know how to focus simultaneously on using their multisensory processing such as visual, gustatory (taste) and auditory, amid task completion, as well as social cues, thus triggering the SRB. Teachers viewed this behaviour as problematic when the child cannot process the information received in the context at hand, thus pursuing SRB, or stimming, thus disrupting learning:

'The out-of-sync child has difficulty processing information' and 'find difficulty in the theory of the mind.' (Participant 2)

'... hitting, when they're feeling frustrated or having a meltdown, it's not because they wanting to do it, you know, they are not aware that what they are doing is affecting other people. But also, they are just meeting their needs.' (Participant 2)

'Stuff happened at home; it spilled over to school ... Spitting' (Participant 3)

'I've got one girl that likes to just look on the wall and she just colours ...and we've got other kids that like to put things in rows and put things in order and that's how they cope with just being on their own and stimulating themselves.' (Participant 4)

The findings of this study further explain that the 'out-of-sync' child should be taken as demeaning when educators must be understood as engaging in stereotyped movements entrains brain rhythms to enhance sensory processing and attention (McCarty & Brumback 2021:16). One can see in the examples aforementioned that the brain rhythms generated by an incident in the home environment or class context have triggered signal processing in sensory areas, which then reinforces the stereotyped movements (spitting, hitting) in a cycle of action and perception, creating a situation where the mismatch is low between expectations and reality. As stereotypes are repetitive and thus predictable, these movements might provide a stream of sensory input to the brain with low prediction error (Schaefer et al. 2006). Moreover, it was found that the relationship between an insistence on sameness behaviours such as playing with the same toys and anxiety was mediated by sensory avoidance.

Theme 5: Stigma and reactions to self-regulating behaviour

The study reveals that negative reactions that people have when children are self-regulating and (de)stigmatisation through acceptance are based on the social norms of these behaviours. The data show that teachers need to change their views of identifying the behaviours of autistic children as deficits rather than identifying the child's strengths, which are more valuable in understanding and

managing SRBs (Prizant 2015). However, it has been noticed that there are concerns that such behaviour attracts glare from other children or makes them avoid the autistic child. Having a diagnosis is a label that provides a dehumanising narrative that is considered in autistic individuals as less human uniqueness (Cage, Di Monaco & Newell 2018). It was also highlighted in the study that repetitive stereotyped behaviours encounter negative social judgements from others if they do not understand these behaviours:

'I mean where the DSM 5, is obviously, obviously is a more a medical approach and we have to listen to that. But for me, I feel the social model is more important ... because that plays a big part in the development of the child ... I believe one day maybe we should lose the diagnosis or improving....' (Participant 1)

'A lot of built-up frustrations but a lot of toilets mishaps ... because I work with the younger children, a lot of weird behaviour, when it comes to faeces, playing and touching.' (Participant 1)

The autism 'diagnosis' is separable from stigma and this power is being held by non-autistic researchers and medical professionals (Evans 2013). The teachers indicated that inappropriate behaviours bring stigma to the diagnosis. Connors and Stalker (2007) further explain that the ASD identity should be grounded in the notion of surplus or excess in certain areas rather than characterised by inferences of deficiency or lesser. This may be viewed as:

'So if we are working on emotional regulation, we would discuss emotions ... having a meltdown, to try and tell them to calm down Blow on your fingers Energy movement breaks Yoga. I would help them to bit more autonomous.' (Participant 2)

'If we are teaching They start to wander off ... little behavioural things ... and if it is affecting what I am trying to present ... I stop and I will remove what we're working on, ... bring in something that will capture their attention, ... something that immediately brings him back to me.' (Participant 5)

The findings suggest that there should be an understanding of SRBs and their views coincide with Silverman and Hinshaw (2008) that ASD is regarded as a unique culture through which underlying standards of normality, deviance and other particularities that require understanding, acceptance and advocacy become salient:

'When a child stims I noticed a child throws a tantrum, like ... there is no way of controlling it. I will have to let them throw that tantrum; you have to let them stim.' (Participant 4)

Stereotypes can act as barriers to understanding how to manage the behaviour and thus there should be a shift of thinking from a deficit-based model to that it can be a positive identity to reframe how teachers understand and manage SRB. A successful strategy that some autistic individuals use is camouflaging. They feel that camouflaging helps them adapt to various social situations and thus it is perceived by others as 'normal' (Leven 2020; Mogensen & Mason 2015).

The study data show that often autistic children prefer playing alone or camouflaging their SRB by hiding their personal interests:

'Often I want to correct the misconception that people think people with autism are anti-social because they maybe struggle socially, but first-hand in the classroom you can see that they want to, they just do not know how.' (Participant 2)

'Based on my observation in the classroom, is that first of all children are different, not one is the same.' (Participant 6)

Theme 6: Strategies to support self-regulating behaviour in autistic children

The study further reveals that SRBs impact the child's learning. However, it is evident that SRB can be managed if teachers understand how they can manage these behaviours (stims) in the classroom, by hugging them, providing sensory input, or allowing them to go to a sensory room on a swing. These are just some management strategies that were mentioned in this study that was implemented in the classroom. Teachers inferred that they found autistic children struggle to find the words to capably express their inner thoughts and feelings; thus stimming was a type of communication that often prevailed especially when words fall short, especially it was seen with non-speaking children (McCormack, Wong & Campbell 2023). This was further reinforced by an autistic adult who stated:

I do it every now and then to just keep a rhythm ... if I do not do it, I'm out of rhythm and I cannot focus as well ... When I stop doing it ... it messes with my thoughts and messes with the rhythm. (p. 3435)

In addition, this study found that stims are behaviours that serve a direct purpose to the individual (O'Neill et al. 1997) as evident in the interviews:

'Self-regulatory behaviour gives us a visible and definitive understanding of how one is feeling in a particular moment.' (Participant 5)

'It's actually a guide for us because we are seeing he is not coping with that one, let me word it differently, let me present it differently.' (Participant 5)

'We as teachers may see hand flapping, echolalia, head banging, common self-regulatory behaviour but she has a non-speaking autistic child that sings beautifully when doing mathematics, the child will sing "one, two, three, she will sing to ten." So, you know, it's quite interesting, seeing how she is perceiving everything through song.' She further states 'if we need to sing to you to learn, we'll sing to you to learn.' (Participant 5)

Moreover, the study found that the teachers stated that the environment is the trigger for stimming. This can be confusing and unpredictable for the child if teachers do not prepare for change or the activity, and it can lead to excessive sensory stimulation contributing to stressful emotional states, which generate the need for a coping mechanism (Kapp 2019). Thus, it was communicated by the teachers that the implementation of appropriate strategies and therapies in the context of behaviour will assist to manage learning.

In addition, the findings suggest that teachers identified how to manage situations, whenever the child has sensory bombardment or internally with a flood of thoughts. For example, when the child smears faeces, social stories were narrated to the children preparing them for transitioning and anxiety. Furthermore, the teachers acknowledged this behaviour was because of the overwhelming environment, which is common among autistic children. This inextricably leads to excessive sensory stimulation, contributing to stressful emotional states:

'We see built-up frustrations, so if they cannot communicate ... bashing the body against things. Also, a lot of – actually I do not know how to put this – but a lot of toilet mishaps. Weird behaviour when it comes to faeces, so not knowing what to do with, touching and playing' (Participant 1)

The study revealed that teachers use a variety of strategies mentioned earlier to regulate the child and not draw negative attention but to find a way to stimulate less problematic behaviour. In addition, the study has shown that the teachers promoted acceptance through understanding. Furthermore, it was highlighted in the data that self-regulation was not a distraction. They shed light that SRB gave their students a sense of freedom, anticipation and healthy dissociation from aversive experiences. Stims are the equivalent of doodling, they say, freeing the mind to concentrate on other things (Kapp 2019):

'It's so hard as a teacher, in that you know that we have to look at that, every single thing that they're doing, is serving a purpose to them. ... It's almost like we are often so busy trying to make them fit our world, that we are not actually adapting our world to fit them. It's the teacher's responsibility to ask the question "Why, the child is anxious ..." and "... everything they do is serving a purpose, it's meeting a need" thus developing an ethos of acceptance.' (Participant 2)

This was reiterated with the notion of choice following a sense of self-acceptance. Furthermore, the data suggest that teachers made use of different strategies and adaptations to support children with autism including instead of finger flicking using doodling, using a stress ball to stay calm or requesting a movement break when unable to focus, or using a therapy box, among others.

In essence, the study has shown that the participants understood what SRB is. It revealed that SRB was a coping calming mechanism. It was stated by the participants that it was a response to sensory overload or overpowering thoughts. The teachers questioned the reasons certain behaviours were triggered. It is noteworthy that teachers consciously recognised the value of self-regulating behaviour and accepting 'self' as being different from others and that they accept SRB as normal.

The findings suggest that repetitive behaviour is a form of SRB and that excessive sensory stimulation contributed to stressful emotional states, which generate the need for a coping mechanism. It was further highlighted that an

overwhelming environment may cause sensory overload and trigger dysregulation in behaviour. The study demonstrates the significance of embracing a child's strengths to promote acceptance rather than stigmatisation. As such, the study showed that we should not fix the child or fit them into societal norms.

Limitations of the study

While the findings of this study provide some valuable suggestions for teachers in an autism school, there are limitations in the research, which need to be considered for future studies. One important limitation of this study is the small sample size of teachers in the inquiry.

As it is an interpretative qualitative study, the researcher may have introduced bias associated with personal subjective experience during the process of data collection, the interviews, or during theme selection and analysis. There has been a conscious effort by the researcher to seek to minimise such biases through robust discussions with participants as well as rereading the original transcripts to ensure that interpretations and themes remained grounded in participants' accounts. Cognisance should be taken that this inquiry was conducted in Western Cape Province, which is a better-resourced province in South Africa, thus teachers have resources and training for ASD. Caution should therefore be taken not to generalise findings to other provinces regarding teacher training, teacher resources and school support services for autistic children. However, the high level of concern expressed about ASD education in this province suggests that even greater challenges may be present in other provinces.

This inquiry reflected the perspectives of a small group of ASD teachers and the inquiry findings may therefore not be easily generalisable. They are limited also in shining a lens on the diversity of functioning in individuals with autism. However, the participants represented a broad range of perspectives and many years of collective expertise and experience in educating autistic children in the classroom. It was also difficult to obtain participants for this inquiry from the autism schools as there were many obstacles in trying to get permission for them to participate from senior management and the Department of Basic Education in South Africa as the period was short. Another significant limitation is the absence of young autistic children's voices in this inquiry.

Conclusion

In this inquiry through qualitative interpretative analysis, the researcher was able to provide the reader with a window of insight into the experiences of teachers of learners with ASD. Reference was made to the existing literature, which concurred with the results of the data. The researcher analysed and presented the data through the lens of understanding SRB as a human trait, a unique way of seeing autism. This inquiry provided a window of insight into the

striking similarities among the participants' views in their recognition of neurodivergence. Their responses inferred that autistic children need not be 'fixed' (Den Houting 2019). The teachers' responses provided rich data on the vast possibilities that teachers can influence in the management of SRB in autistic children, showing that their lives represent opportunities, not disabilities; promises not to doom.

Recommendations

- This research affords and advocates for necessary changes in the way we see, understand and provide services to autistic children.
- There is a need to recognise neurodivergence and not focus on 'fixing' autistic children.
- Teachers need to make provision for adaptations in the learning environment to recognise and manage SRBs effectively, building on the child's interests, strengths and learning styles to develop the necessary skills to overcome anxiety.
- More training programmes and professional development are needed, and more support systems are required for teachers to ensure the successful management of autistic children.

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Data availability

The data that support the findings of this study are not openly available due to confidentiality and are available from the corresponding author, V.S., upon reasonable request.

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Appendix 1 starts on the next page →

Appendix 1. Interview schedule questions for teachers

Ethics Notification Number: 4000025836

Participant Name and Surname: _____

School: _____

Date: _____

Time of interview: _____

Introduction: Thank you for your willingness to volunteer to participate in this interview. The purpose of this interview is that I would like to understand self-regulatory behaviour of autistic children and how you manage them in the classroom. As I have explained in the participant information sheet given to you, the following are the selection criteria:

- Teacher who is responsible for teaching autistic children and has a minimum of 2 years of teaching experience.
- Teaching autistic children aged between 3 and 7 years of age.
- Teaching in Western Cape Education schools, South Africa.

You have signed the consent form but if you feel uncomfortable for any reason, you are welcome to withdraw from the interview at any time.

Semi-structured interview schedule for teachers

1. What is your understanding of autism spectrum disorder and state some self-regulatory behaviours that you have observed in your class?
2. What are your thoughts/perceptions on self-regulatory behaviour displayed by autistic children?
3. Do you feel that self-regulatory behaviour positively or negatively impacts the autistic child's learning? If so why and how can you tell?
4. What teaching strategies are currently being used in the classroom to understand and manage learners with self-regulatory behaviour? How can we say that it enables you as a teacher to manage these learners' behaviours?
5. Do you think you are adequately prepared (skills/knowledge/intervention) to manage the self-regulatory behaviour in the class? If Yes/No, please elaborate.
6. What in your view are additional interventions, adaptations or modifications should be implemented to manage learners with self-regulatory behaviour?
7. What are some of the challenges you have experienced in managing self-regulatory behaviour and how can we change the learning environment to overcome these challenges?
8. Having policies and procedures on paper are often very commendable but in terms of implementation can be extremely challenging, have you experienced any challenges in teaching autistic children with regard to self-regulatory behaviours and how did you overcome these hurdles?
9. Is there anything further that you think is important with regard to understanding self-regulatory behaviour?