

## **Understanding and overcoming challenges for the inclusion of learners with autism spectrum disorder in South African mainstream classrooms**

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### **Abstract**

*Despite policies having been developed by various countries to manage and support inclusive education, the inclusion of learners with varied abilities remains a global crisis. This predicament infringes on the human rights of these children, who are unable to access quality education in mainstream schools. In South Africa, the education system has implemented Education White Paper 6 on inclusive education and the Policy on Screening, Identification, Assessment, and Support, which govern inclusive education execution as well as sustainability for all learners, including those with autism spectrum disorder (ASD). This paper argues that policy enactment requires holistic intervention strategies in light of the changing contextual scenarios. Piaget's theory of cognitive development underpinned the investigation, which took a paradigmatic and interpretive stance in a multiple cross-case study design to scrutinise 15 teachers' narratives relating to the inclusion of ASD learners. The findings revealed unclear statistics, an unclear conceptualisation of ASD learners in South Africa, inadequate resources, and unaligned teacher education perpetuating factors hindering the inclusion of ASD learners. The paper concludes with recommendations for future research informing teachers and policymakers on the contextual successful inclusion of ASD learners in South Africa.*

### **Introduction**

South Africa has addressed past injustices by enacting the South African Schools Act (SASA) No. 84 (Department of Education 1997), thus ensuring quality education for all learners while abolishing discrimination. However, the effectiveness of these inclusion policies has become ambiguous owing to unclear policy issues and serious implementation challenges (Donohue and Bornman 2014). Attempting to further foster inclusion, Education White Paper 6 (EWP6) and the Policy on Screening, Identification, Assessment, and Support (SIAS) were introduced. The

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research indicates that South Africa has experienced limited progress in achieving inclusive education (IE) (Kalinnikova Magnusson et al. 2023). Through the inclusion of all learners, not just those with disabilities or special needs, IE aims to remove the stigma of marginalisation (Nel et al. 2013). This research has focused on exploring the factors influencing effective inclusion and on gaining an understanding of the challenges faced by learners with autism spectrum disorder (ASD) in mainstream classrooms.

ASD, a heterogeneous developmental condition, presents challenges in social interaction, communication, behaviour, and sensory processing (Nthibeli et al. 2022). It is chronic, and individuals with ASD exhibit a wide variety of functional impairments (Landsberg et al. 2019). With a global prevalence of one in 68 learners, there is a dire need for increased awareness and early diagnosis, particularly in South Africa, where figures relating to its prevalence are uncertain (Erasmus et al. 2019a; Malcolm-Smith et al. 2013). International concern favours IE, especially for learners with ASD. This is evident in the United States (US), where self-contained classrooms and individualised educational plans (IEPs) are provided (Crowe et al. 2015). The United Kingdom and Australia use similar planning to support learners in mainstream classrooms, which suggests that there could be potential benefits for South Africa (Landsberg et al. 2019; Timothy and Agbenyega 2018; Waddington and Reed 2017). However, countries like the US and UN are underpinned by enforceable legislation for IE, such as the Individuals with Disability Education Act (IDEA) and the Children and Families ACT 2014. The support of IEPs also strengthens this. In contrast, South Africa's approach is mainly policy-driven, opposed to legislative enforcement. Thus, implying that the implementation of EWP6 and SIAS mainly relies on resource availability and provincial interpretations, opposed to national accountability mechanisms, possibly contributing to inconsistent policy application.

Moreover, South Africa experiences a misalignment between policy conceptualisation, context, and the management of the diverse educational needs of learners with ASD in schools (Pillay et al. 2022). Despite the existence of supportive policies, mainstream schools often lack the resources and infrastructure aligned with IE principles thus hindering the successful inclusion of learners with ASD (Engelbrecht et al. 2015; Nthibeli et al. 2022). Therefore, this paper reports on factors enhancing inclusion and curriculum access.

### ***Prevalence of ASD in South Africa***

A substantial number of learners of school-going age (7–15 years) who are diagnosed with ASD still face segregation (Erasmus et al. 2019). Hampton et al. (2019) highlight the lack of

individualised intervention for these learners in South Africa. Initiatives such as EWP6 aim to promote IE by considering factors such as teacher training, curriculum accessibility, and resource availability (Eloff and Swart 2018). Understanding these relationships is vital for enhancing ASD inclusion in mainstream classrooms.

Efforts to promote IE in South Africa face challenges such as inadequate teacher capacity, limited knowledge about ASD, financial constraints, and negative teacher attitudes. Despite the existence of policies such as EWP6 and SIAS, the 20-year progress report highlighted persistent issues that are hindering effective inclusion. This paper suggests strategies to address these challenges and makes recommendations for policymakers, considering the complexities of ASD inclusion in mainstream classrooms (Donohue and Bornman 2014; Erasmus et al. 2019b; Franz et al. 2018; Nseibo et al. 2022; Nthibeli et al. 2022). Furthermore, acknowledging the prevalence of ASD is crucial for ensuring inclusive practices. While global prevalence is estimated between one and two per cent, limited information in South Africa hampers accurate measurement. Existing challenges, including the lack of standardised screening tools and diagnostic methods, emphasise the need for further research to address the prevalence of ASD in the country (Franz et al. 2018; Pillay et al. 2022). Moreover, in recognising ASD as an international health concern, countries like the US employ precise legislation to establish and support inclusive practices and since clear policy mandates alongside effective implementation emerge as the most beneficial approach, we suggest that South Africa should learn from the successful strategies in countries such as the US and UK to enhance ASD inclusion in mainstream schools (Donohue and Bornman 2014; Franz et al. 2018; Waddington and Reed 2017).

Yet, efforts to enhance support for learners with ASD in South Africa face challenges, including a lack of consensus on the definition of disability and the lack of adequate policies. The SIAS policy, which was designed to improve school participation and inclusion, requires clearer implementation procedures and, while acknowledging that there is progress, there is a need for better clarity on policy implementation to bridge the gap between provided frameworks and actual practice (Donohue and Bornman 2014; Pillay et al. 2022). Teachers in South Africa face obstacles such as insufficient training, negative attitudes, and limited financial and physical resources. This paper underscores the necessity for continuous teacher development and investigation into these hindrances to achieve effective inclusion that ensures the protection of

the rights of all learners (Donohue and Bornman 2014; Lindsay et al. 2013; Nseibo et al. 2022; Nthibeli et al. 2022).

Supporting IE relies on sufficient resources, with teachers being the key asset (Lindsay et al. 2013). Adequate teacher training and positive attitudes are crucial (Donohue and Bornman 2014; Nseibo et al. 2022; Nthibeli et al. 2022). Internal and external factors, including parents' level of education, income, and race, affect resource access (Krakovich et al. 2016). Despite budget deficits in the Department of Education, securing funds is vital for acquiring tools, adapting infrastructure, and hiring experts for specialised support (Donohue and Bornman 2014; Nthibeli et al. 2022). In addition, financial strain in developing countries like South Africa poses challenges (Engelbrecht et al. 2016). Cost-effective pedagogical approaches such as visual aids contribute positively to the inclusion of ASD learners in mainstream classrooms (Nthibeli et al. 2022). South Africa's human resource constraints require government responsibility for comprehensive development (Department of Education 1997) while non-compliance with resource development hampers the inclusion of ASD learners in South African mainstream classrooms. This includes teacher training to meet the needs of all the children included in a mainstream classroom.

This paper aims to contribute to the South African educational system's goal of fostering inclusivity for ASD. The identification of factors influencing ASD inclusion and the proposal of strategies to improve IE implementation is essential to success. Additionally, this study aims to support teachers in understanding and addressing the developmental needs required for successful implementation of IE strategies.

### **Theoretical framework**

Educational research relies on theories. Owing to the close correlation between cognitivism and inclusion, Piaget's theory of cognitive development has guided the exploration of the theoretical framework in this paper (Al-Shammari et al. 2019). Piaget's cognitive development theory informs teachers' views regarding those factors influencing the effective inclusion of learners with ASD in South African mainstream classrooms.

Piaget, a Swiss psychologist and genetic epistemologist, founded cognitive developmental theory in 1953 and is thus regarded as a constructivist theorist (Joubert and Harrison 2021; Piaget 1953). Cognitive development entails information processing, conceptual resources, perceptual ability, language learning, and other elements of brain development (Joubert and Harrison 2021). Piaget postulates that child development occurs in four stages associated with

their developmental ages, namely the ‘sensorimotor stage (0–2), pre-operational stage (2–7), concrete operational stage (7–11) and formal operational stage (11–adult)’ (Excell and Linington 2015). Piaget also necessitates the use of three processes – assimilation, accommodation, and equilibration – when transitioning from one stage to the next (Joubert and Harrison 2021).

Although these developmental ages are meant to provide a guideline, the learners’ chronological ages are not always aligned with the developmental ages. This holds possible implications for the inclusion of ASD learners in mainstream schools (Jacobs et al. 2016). Using observation to assist in transitioning and development is another key factor suggested by Piaget. Observation allows the teacher to acquire a thorough picture of a learner’s knowledge gaps (Joubert and Harrison 2021). This information can then be acclimated to apprise further teaching strategies. However, owing to the large class sizes in South African mainstream classrooms, practical observation could be seen as problematic (Joubert and Harrison 2021). It is important to note that Piaget was not an educator; his work was primarily philosophical. His theory offers a framework to evaluate educational issues but implementation and interpretation are left to the teachers (Smith 2014). However, Piaget’s lack of teaching experience might indicate ramifications for learners with ASD who attend mainstream schools, possibly as a result of an inadequate teacher training framework (Donohue and Bornman 2014).

Despite this, Akpan and Beard (2016) state that ‘constructivism is the best paradigm for teaching all learners, particularly those with special educational needs.’ The author, therefore, argues that Piaget’s theory provides a lens to view the inclusion of ASD learners, as teacher conceptualisation of ASD might encourage early intervention in South African mainstream schools. In accordance, this study proposes an adapted constructivist-contextual framework, where cognitive development is mediated by internal assimilation alongside accommodation processes and external structural constraints like socio-cultural interpretations of ASD, teacher-learner ratios, and class sizes. With this adaptation, equilibration—a fundamental Piagetian process—incorporates teachers’ efforts to balance cognitive diversity in culturally diverse and resource-limited environments.

## **Methods**

In research, a paradigmatic approach shapes one’s worldview by framing essential aspects of reality (Maree 2019). By adopting an interpretivist stance, this paper delves into ontology, epistemology, and methodology to gain an understanding of teachers’ perspectives on the

inclusion of learners with ASD in mainstream classrooms. Ontology, which is rooted in individual viewpoints, illuminates teachers' attitudes toward ASD inclusion, while subjectivist epistemology takes an interactive position (Maree 2019). Opting for a multiple case study design, the research underpinning this paper aims to unveil similarities, differences, and emerging themes through cross-case analysis while at the same time recognising nuanced classroom dynamics.

The design sought to offer insights for teachers and policymakers, thereby contributing to future theory development related to the inclusion of ASD learners in mainstream classrooms (Gustafsson 2017). Purposive sampling involved the selection of five teachers from three mainstream schools teaching learners with special education needs (LSEN). The mainstream school included ASD learners, and the LSEN school catered for ASD-specific learners. Semi-structured interviews served as the chosen data collection method, aligning with Mahajan's (2018) emphasis on thorough inquiry and involving 10 qualified Foundation Phase teachers each with a minimum of three years' experience (Maree 2019).

All the participants provided informed written consent, and ethical clearance was obtained from the university's Ethics Committee. To ensure confidentiality, the researcher recorded personal information under a numbered reference (1–15), known only to the researchers. Thematic-descriptive analysis, which addressed key research protocols, delved into the participants' knowledge, attitudes, and behaviours concerning the inclusion of ASD in mainstream schools. This qualitative research approach facilitated a profound exploration of the participants' experiences, offering a platform for the voices of ASD learners through the lens of the engagement of the teachers (van Schalkwyk and Dewinter 2020).

## **Findings and discussion**

The research revealed five major themes:

- Lack of clarity regarding the prevalence of ASD in most South African provinces;
- ASD conceptualisation contributes significantly to effective inclusion;
- Various factors hindered teacher and learner support to achieve effective ASD inclusion;
- IE principles should inform effective teacher implementation of inclusive values; and
- ASD inclusion necessitates further teacher training, availability of physical infrastructure, and resources.

***The prevalence of ASD in most South African provinces remains unclear***

The consideration of the prevalence of ASD is pivotal to the effective inclusion of learners with ASD in South African mainstream classrooms. While Franz et al. (2018) contend that the current research on ASD prevalence in South Africa is limited, with the Western Cape being the only province providing ASD statistics, the semi-structured interviews uncovered significant insights. The analysis of these interviews revealed various codes, for example, ‘the inclusion of constraints related to limited space’ and ‘the rising number of ASD learners, which led the researchers to the category of overcrowding’. Furthermore, codes about misdiagnosis, poor screening, poverty, the lack of ASD research, misconception, and the significance of early ASD diagnosis directed the research towards two main categories, ‘teaching capacity’ and ‘diagnostic capacity’. These two essential categories intersected, culminating in the overarching theme, ‘the prevalence of ASD in most South African provinces remains unclear, as there appears to be little information around the number and location of diagnosed cases of ASD’.

The data collected from the participants in both mainstream and LSEN schools suggested a correlation between a general increase in class size, with a corresponding rise in prevalence. Accordingly, teachers from both schools stated the following:

We are getting more and more children with autism in our normal schools.

(Mainstream school)

We started at six diagnosed learners, and now they’re pushing us to nine and they want to push us to 12, which makes it a little bit difficult. (LSEN school)

Based on the literature, there is evidence to suggest that the global prevalence of ASD is on the rise (Franz et al. 2018). Although statistical data on the prevalence of ASD in learners for most provinces of South Africa is limited, it is reasonable to infer that the prevalence of ASD in South Africa is also increasing. This inference is supported by the Department of Education’s initiative to expand class sizes, which implies a growing demand for educational resources and accommodation for individuals with ASD.

The participants from both the mainstream and LSEN schools emphasised the significance of early diagnosis. According to the literature, a reciprocal relationship exists between early diagnosis and early intervention, with research showing that early diagnosis leads to early intervention, which ultimately improves the outcomes for learners with ASD

(Pillay et al. 2022). In addition, the participants contended that the absence of early intervention might have resulted in future difficulties that would impede the sustained functionality of individuals with ASD (Pillay et al. 2022). As such, a teacher from the LSEN school imparts:

Oh, it is sooo much helpful if learners are diagnosed early... so early intervention it's very important because if they are not exposed to structure, to how to behave properly, it becomes a problem. (LSEN school)

The participants believed that diagnostic disparities were caused by both poverty and misconceptions about ASD. Moreover, they believed that a lack of ASD research contributes to late diagnosis. The literature substantiates the veracity of this claim, further highlighting the scarcity of access to standardised screening and diagnostic tools for ASD, as well as the dearth of diagnostic instruments as significant contributing elements (Franz et al. 2018). Moreover, the lack of suitable interventions in the public health and education divisions in South Africa is also acknowledged as a contributing element (Donohue and Bornman 2014; Erasmus et al. 2019b; Franz et al. 2018; Nseibo et al. 2022; Nthibeli et al. 2022). In support of this, LSEN school teachers indicated the following:

Some parents live in poverty, so they can't take their children to specialists for early diagnosis. (LSEN school)

A lot of learners get diagnosed with ASD, but it could be something different than ASD because it is so broad. (LSEN school)

### ***ASD conceptualisation as a significantly contributing element to effective inclusion***

The concept of inclusion is inherently complex; therefore, a profound understanding of ASD is essential for the successful implementation of effective inclusion strategies (Landsberg et al. 2019). To effectively apply inclusive principles and provide adequate support for learners with ASD, it is imperative that all stakeholders, including teachers, policymakers, parents, peers, and the community possess a sufficient level of understanding regarding ASD. In the study, the identification of these stakeholders as codes led the researchers to the category of 'stakeholders' in their analysis, which, in turn, led the researchers to the theme of 'ASD conceptualisation as a significantly regarding contributing element to effective inclusive policies.'

The participants' responses shed light on the evident lack of knowledge and preparedness among the teachers of ASD learners (Landsberg et al. 2019). To achieve successful inclusion,

it is imperative that all stakeholders, including teachers, possess a comprehensive understanding of the characteristics and implications associated with ASD. The research is underscored by Nthibeli et al. (2022) who opine that insufficient conceptualisation impedes the development of practical strategies, ultimately affecting the assistance of ASD learners. Nevertheless, despite experiencing feelings of inadequacy and a sense of being overburdened, the participants recognised the need for further education and were eager to learn, stating:

ASD it's, well, a spectrum, right? (LSEN school)

But we don't know. So, I would like professional development for learners with autism, dyslexia etc, so that we know how to support them. (Mainstream school)

From the participants' perspective, the policymakers had insufficient awareness and understanding of the specific needs of learners with ASD. This incomplete comprehension of how to effectively include learners with ASD led to deficiencies in both policies and collaboration among the stakeholders, thereby impeding their ability to meet the needs of all learners (Department of Education 2014; Donohue and Bornman 2014; Nthibeli et al. 2022). Hence, LSEN school teachers highlighted the undermentioned:

I feel like whoever personnel is that are designing those policies should maybe at least come to schools to get to know what is it like to work in these contexts, you know, it's hard to just track to something if you haven't, like really witnesses everything happening. (LSEN school)

The participants expressed concern about parental denial and misconceptions about ASD, highlighting these as significant obstacles to inclusion. Various impediments arose including: delayed progress resulting from inadequate parental support; marginalisation stemming from a lack of parental acceptance; and, consequently, the lack of facilitation of comprehensive inclusion by all the involved stakeholders. Therefore, fostering collaboration between parents and other relevant stakeholders is crucial, as it empowers parents to embrace inclusive principles and gain a thorough understanding of inclusion (Lindsay et al. 2013). This was verified by the teachers who noted:

The parents don't want to know about their children's condition and how to support them. (Mainstream school)

The parents are definitely in denial of admitting their children struggle with ASD that presents as learning difficulties in class and require a transdisciplinary learners support. (LSEN school)

The participating teachers voiced their concerns regarding the absence of knowledge about ASD and its various aspects by their peers. The research underscored that peers are integral to fostering successful inclusion and ensuring adequate accommodation for learners with ASD (Department of Education 2014). Therefore, it is clear that peer education regarding ASD is essential for successful inclusion. Mainstream school teachers call attention to this as they state:

But the other kids, they think it's a joke because they don't understand that these children experience learning difficulties. (Mainstream school)

We need to educate our children about other children with disabilities. (Mainstream school)

The responses from the participants emphasised the need for the community to actively promote inclusion. Establishing an inclusive atmosphere can be facilitated through effective community engagement strategies. Encouraging communities to prioritise inclusion over exclusion can lead to a deeper understanding of ASD and its implications, ensuring that learners with ASD are not excluded from community participation (Donohue and Bornman 2014). Given that LSEN school teachers disclose that:

... because I know in the Black community, if a child has a condition that they do not understand, they may be perceived as mentally insane and they keep them away from people, they keep them away from society. (LSEN school)

There are areas in the country where you find that people do not even understand what autism is. (LSEN school)

### ***Factors hindering teacher and learner support in achieving effective ASD inclusion***

Achieving effective teacher and learner support is imperative for the successful inclusion of ASD learners in mainstream schools. However, the literature underscores a very significant gap – many teachers lack the essential training required for implementing the necessary accommodation of ASD learners in the classroom. In addition, they lack access to consultation support and guidance (Eloff and Swart 2018; Engelbrecht et al. 2015) in mainstream

classrooms. 2022). Collectively, these factors pose a potential threat to successful inclusive practices.

The interviews brought to light a range of codes that could be classified into distinct category codes related to training, workshops, inadequate ASD training, and financial constraints within the continuous ASD-specific training category. For the curriculum category, codes about specialised curricula and curriculum adaptations were identified. Additionally, in the collaboration category, codes associated with district-based support teams and school-based support teams were discovered. Lastly, the accommodation category included codes associated with visual aids, differentiation, multi-level teaching, and lack of knowledge. These individual categories intersect to collectively shape the overarching theme, that is, ‘highlighting factors hindering teacher and learner support in achieving effective ASD inclusion.’

The participants emphasised the importance of ongoing training to enhance their abilities in supporting learners with ASD in the classroom, a critical aspect of the implementation of IE. However, South Africa faces institutional and professional barriers that pose substantial challenges in this regard (Donohue and Bornman 2014; Nthibeli et al. 2022). Notably, the teachers at the LSEN school expressed satisfaction with their ongoing ASD-related training, which, they felt, equipped them with essential skills to cater to the ASD learners’ needs. By contrast, the mainstream school participants highlighted a significant lack of ongoing ASD-specific training, which hindered their ability to assist these learners and ultimately impeded the support of both the teachers and the learners (Nseibo et al. 2022). Therefore, they emphasised the necessity of departmental support to facilitate access and financial provision to continuous ASD-specific training, promoting integration over segregation:

At our school, every teacher who comes here goes for Makaton training, teacher training, those are the methods that we use with our learners. They also use tiny hands, and sign language to communicate. We have training almost every week.  
(LSEN school)

So, the teachers who asked for the courses pay for themselves. (Mainstream school)

The participants highlighted the need for ASD-specific curricula due to the current lack of specificity in meeting the unique requirements of the learners. While the Differentiated Curriculum and Assessment Policy Statements (D-CAPS) curriculum, which is used at the

LSEN school, is well-known for differentiating instruction and addressing a variety of learning barriers, the participants felt that it lacked adequate ASD-specific support:

The curriculums and everything that we receive for them are not for their level, and it's not accessible for them. (LSEN school)

Following this, the mainstream school participants found that the CAPS curriculum was exclusive and lacked support for ASD learners, thus hindering support for both the learners and the teachers. Moreover, they stressed the importance of an accessible curriculum. Research consistently supports this notion by highlighting the contribution of curriculum accessibility to advancing teacher and learner support, ultimately aiding IE (Department of Education 2014; Eloff and Swart 2018; Krakovich et al. 2016). Fittingly, mainstream school teachers express that:

According to the curriculum, they are not included at all; you have to do everything including curriculum differentiation by yourself if you want to include them.  
(Mainstream school)

The participants from the LSEN school were satisfied with the assistance they had received from their school-based support team (SBST), highlighting the significance of collaboration among SBST stakeholders. By contrast, the mainstream school participants acknowledged the SBST's support but expressed a need for more specialised professionals on the team. In addition, their responses disclosed a lack of collaboration among SBST stakeholders, which hindered teacher and learner support, ultimately impeding effective inclusion. As they explained:

We at our school, we use our speech therapists, occupational therapists, we have a social worker, and we all sit together and discuss in our SBST meetings... So, it's very important to discuss the learners and to get help from each of the role players. Together, we can identify the development milestones of the children. (LSEN school)

We will really, really, really need the help or the support of professionals and therapists to give guidance to ASD learners. (Mainstream school)

Maybe we should have regular grade group meetings and develop individual support plans for specific learners. It will help the teacher to discuss the limits and challenges that they face or experience. The teachers then can give each other

suggestions and strategies on how to handle a situation or a specific moment.’

(Mainstream school)

However, both the participants from the LSEN school and the mainstream school expressed concern regarding the insufficient assistance that they had received from the district-based support team (DBST). Consequently, a potential barrier arose, as the literature indicates that effective collaboration with the DBST is essential for advancing teacher and learner support while contributing to the success of inclusion initiatives (Department of Education, 2014). Thus, inferring that lacking collaboration not only with, but also within the DBST diminishes support for both teachers and learners. Concurrently, teachers report that:

Nothing. None, I’m being honest, I don’t think they (DBSTs) have enough knowledge about ASD. (LSEN school)

We are reporting the challenges to the district, but nothing is coming back. There’s no help given. (Mainstream school)

The participants’ responses highlighted insufficient curriculum accommodation in their mainstream classrooms, thus hindering support for learners with ASD. However, they acknowledged the need for support to provide specific accommodations, such as staff training, classroom arrangements, and modified lesson plans, enabling support for the effective inclusion of these learners. Considering that research highlights the significance of inclusion in removing systemic barriers, it is crucial to emphasise the significance of classroom modifications and support systems (Landsberg et al. 2019).

The participants’ responses highlighted a wide range of specific accommodations implemented in the LSEN classroom to support learners with ASD. These accommodations included personalised differentiation, visual aids, sign language, AAC methods, multi-level teaching, and structured schedules and routines. It is worth noting that while the LSEN school employed multi-level teaching, the mainstream schools lacked knowledge of this approach.

The mainstream schools adhered to Piaget’s theory of development, which posits that development occurs in distinct stages at specific ages (Excell and Linington 2015). By contrast, the LSEN school recognised that developmental ages serve as guidelines and that learners’ chronological ages may not always align with their developmental ages (Excell and Linington 2015). This may contribute to the lack of support for learners with ASD in mainstream classrooms, thereby impeding effective inclusion (Jacobs et al. 2016). Given that the literature

underscores the goal of inclusion in removing systemic barriers, it is imperative to underscore the importance of classroom modifications and support systems (Landsberg et al. 2019; Nthibeli et al. 2022). Even so, teachers accounted that:

With LSEN you can never be specific with grades ... they cannot be able to function or be able to acquire each and everything that will be taught. (LSEN school)

She just Googles and finds something that she can do with those learners. But we don't have anything specific and developmental that we do with those learners.

(Mainstream school)

### ***Inclusive education principles inform effective teacher implementation of inclusive values***

The literature deems that the primary resource for attaining an IE system is the successful implementation of inclusive principles by teachers (Nseibo et al. 2022; Nthibeli et al. 2022). Thus, it is essential to consider teacher training, teacher knowledge of inclusion policies, and workload when thinking about the effective implementation of inclusive principles.

The interviews unveiled several codes, such as years of teaching experience and qualifications, which were then organised into the category of 'teacher training'. Another set of codes, including inclusion policies, SIAS, EWP6, and school policies, were clustered under the category 'teacher knowledge of inclusion policies'. Additionally, codes such as administrative overload, teacher duties, and attitudes were grouped into the category of workload. Together, these categories contributed to the overarching theme, IE principles inform effective teacher implementation of inclusive values

The participants alluded to the fact that their undergraduate education did not adequately prepare them to teach learners with ASD. Thus, the research demonstrates the widespread absence of specific guidelines in higher education institutions regarding the incorporation of special needs education in their initial teacher preparation programmes (Nseibo et al. 2022; Nthibeli et al. 2022). Furthermore, the interviews conducted in both the LSEN and mainstream schools suggested that before the paradigm shift, South African teachers were well-prepared to teach either general or special education. However, as a result of this shift, many teachers now find themselves in classrooms without the necessary instructional expertise to teach learners with educational barriers (Donohue and Bornman 2014). This underscores the critical importance of comprehensive teacher training, as the absence thereof impedes teachers' effective implementation of inclusion values. Conversely, teachers utter that:

Yeah, they don't offer it at universities, it's all theory for the cause that I deal with autism. (LSEN school)

You know what, this is so long ago that I don't think we ever did something like that. I can't even remember that I heard about that in those days (university). So, I don't think I am trained for that. (Mainstream school)

In addition, some of the participants reported having received ASD-specific training only after they started teaching. Consequently, teachers' limited comprehension of fundamental inclusive principles could substantially impede their ability to effectively implement inclusive practices.

No, whatever I studied, it did prepare me a little bit for each disability, but it didn't prepare me enough. I learned everything I do while teaching. It didn't prepare me at all for teaching learners with ASD. (LSEN school)

I want to say no. We received no training or preparation. Therefore, we do not feel equipped. We were trained to teach learners in mainstream education only. (Mainstream school)

The participants from both the LSEN and mainstream schools expressed their concerns regarding the awareness of SIAS policy. The majority of the participants were aware of the existence of the policy but were unaware of what it entailed. As the EWP6 and SIAS policies were developed to promote a more IE-based system, ignorance of these policies presents a significant problem (Department of Education 2001, 2014). Thus, the literature indicates that the primary explanation for the lack of significant progress in the implementation of inclusive policies is the apparent lack of clarity and the implementation difficulties resulting from insufficient teacher training (Donohue and Bornman 2014; Franz et al. 2018). Teachers support this by asserting that:

I don't think anybody is aware of the SIAS policy, what it stands for, and what it's about in this school. So, I don't think it's very well-articulated by the DBST coordinators out there. (LSEN school)

I know we don't follow. I don't always follow the policies. (Mainstream school)

The teachers from both the LSEN and mainstream schools found their workload to be overwhelming due to their numerous responsibilities, with administration being a formidable factor.

Teachers are busy and there's so much admin to do. (LSEN school)

It is already challenging to cope with the large number of learners in a class and all the extra administration and it might make one feel overwhelmed to also now cater to learners with special needs. (Mainstream school)

In turn, their attitudes and implementation of inclusive principles were being impacted by their extensive workload, with one mainstream participant expressing reluctance to include ASD learners, simply stating, 'I will not':

Normally I take the learners that are more gifted than those. It's my personality. I will not. (Mainstream school)

Consequently, negative teacher attitudes may arise, ultimately impeding the successful implementation of inclusive principles and ASD learners (Erasmus et al. 2019; Lindsay et al. 2013). In accordance with these attitudes, the South African government concurs that this poses a significant problem which affects IE implementation (Department of Education 1997). Inadequate teacher capacity may also contribute to the work overload that contributes to teachers' negative attitudes. Moreover, the literature indicates that the shortage of human resources in South Africa ultimately affects IE implementation (Donohue and Bornman 2014).

#### ***ASD inclusion necessitates resource availability***

The availability of resources necessitates adequate funding; however, the Department of Education displays a budget deficit (Donohue and Bornman 2014; Engelbrecht et al. 2015; Lindsay et al. 2013) and it has become clear that the availability of resources specific to ASD remains ambiguous. In conjunction with the lack of resource availability, the inadequacy of infrastructure is a serious matter related to learner safety and personal hygiene. The central inquiry relates to the extent to which the availability of sufficient resources might enable successful inclusion, given that a lack of relevant infrastructure, hinders the use of these resources.

Furthermore, the interviews revealed codes relating to small classrooms, academic resources, and tools, which led the study to the category of 'funding.' Furthermore, codes about infrastructural physical capacity and limited facility modification led the researchers to the category of 'infrastructure.' These two essential categories intersect, culminating in the overarching theme, 'ASD inclusion necessitates resource availability.'

It is evident from the responses of the participants that the LSEN school provided the teachers with sufficient classroom resources and financial support to accommodate the learners in their

classrooms. However, a participant explained that the available resources were not always ASD-specific, preventing effective accommodation:

Resources are provided by the school to make sure that we teach and accommodate and offer support for our ASD learners. (LSEN school)

We are allowed to order whatever we need if it falls into supporting ASD learners in any category with little or no training. (LSEN school)

Contradicting the participants' responses of the LSEN school, the responses of the mainstream schools' participants indicated that their schools lacked the necessary classroom resources and financial support to effectively accommodate learners with ASD. Despite obtaining theoretical training, two participants commented on the lack of physical resources necessary to implement the newly acquired methods, which impeded effective accommodation:

We don't have the resources that they want us to use. (Mainstream school)

I don't feel that our school offers efficient resources or have any resources for ASD learners. (Mainstream school)

Consequently, there is a substantial need for resources that are specifically tailored to address the needs of learners with ASD. Accordingly, the literature indicates the unavailability of resources as a factor influencing IE implementation (Donohue and Bornman 2014; Engelbrecht et al. 2015; Lindsay et al. 2013).

The participants also expressed their apprehension about the limited physical capacity of the school. At present, the school rents the facility they occupy, which resulted in the participants expressing concern over the limited physical capacity. This observation led to a crucial inference, that is, that despite having adequate financial resources, the limited space for implementing even the essential resources diminished the efficacy of both funds and the available resources.

I wish we could get a building where we could have more resources, more sensory rooms, more appropriate toilets, working toilets, more office space, and bigger classrooms where we can have sensory corners, your reading corners, and so forth and on. (LSEN school)

We need space, particularly at our school, we are renting a certain number of rooms from a different school. So, I feel that with more space we would get resources,

bigger classes that accommodate, you know, more types of ASD learners. (LSEN school)

The participants of the mainstream schools voiced concerns over the schools' deficient provision of inclusive physical facilities. Although the school had made limited modifications to facilitate learners with disabilities by providing a disability-friendly toilet, temporarily adapting staircases for learners with physical limitations could help. The overall commitment to promoting inclusion appeared to be lacking, ultimately contributing to poor infrastructure and hindering the resource availability required for effective ASD inclusion. ADD INTRO

We do have a new wheelchair bathroom that we built two, three months ago... but I think the school had to do it by themselves and not with the Department of Education's help. (Mainstream school)

They put some bricks to make the steps smaller. (Mainstream school)

If a child is upstairs, they will need a wheelchair for mobility, and, if unavailable, how will they get up there? (Mainstream school)

Hence, the absence of appropriate physical infrastructure that adheres to the principles of IE implies potential challenges in effectively including learners with ASD. The literature underscores the necessity of making infrastructure improvements to effectively cater to the diverse needs of learners, thereby promoting successful inclusion (Donohue and Bornman 2014; Nthibeli et al. 2022).

### ***Research contribution of ASD in the South African context***

This contributes to and, in some ways, challenges the existing generalisations about IE and ASD in South Africa. The findings portray that preceding research (e.g., Donohue & Bornman, 2014; Engelbrecht et al., 2015) generally attributed challenges regarding inclusion to policy implementation failures. Accordingly, to create a multi-layered barrier unique to many African education systems, this study extends the understanding of the contextual constraints and their intersections, as displayed in South Africa, like increasing class sizes, inconsistent diagnostic practices, and culturally embedded beliefs about disability. Moreover, the study challenges the notion that inclusion barriers are mainly resource-related. Our findings display that community stigma rooted in cultural perceptions of disability, teacher attitudes, and parental denial play an equally powerful role in shaping the inclusion of learners with ASD, which is vital for understanding inclusion within African contexts. Furthermore, the research extends regional

discourse by demonstrating how Piaget's cognitive developmental theory, adapted for South African realities, offers a framework for collective constructivism. In this context, learning and cognitive development are shaped by peer and community engagement, but not limited to the individual learner-teacher relationship, which is more reliable with South African communal epistemologies. Lastly, the findings hold possible contributions to broader debates in southern Africa by underscoring that inclusion must be both culturally legitimate and structurally feasible. Thereby calls for regionally responsive models of inclusion that can draw from local belief systems, practices, and languages rather than imported frameworks. Such an approach allows for the redefinition of IE as a socially collaborated, culturally positioned process over a uniform policy objective.

### **Limitations**

The limitation of this study's findings relates mainly to the number of settings and participants in the study. However, the findings represent similar support challenges for ASD learners in South African mainstream schools. The challenges flagged and the methodology presented could provide an outline for future research.

### **Conclusion**

In this paper, the researchers uncovered insights into the factors that influenced the inclusion of learners with ASD in South African mainstream classrooms. These factors included the unclear prevalence of ASD in schools with overcrowded classrooms, inadequate accommodation for developmental differences, and diagnostic disparities playing pivotal roles.

The findings stress that, in overcrowded South African classrooms, Piaget's assumption of close teacher observation and individual scaffolding is constrained. Hence, teachers are bound to adapt constructivist practices into group-based, context-sensitive strategies. Thereby, suggesting that, when applied to South Africa, Piaget's framework must integrate a collective constructivism, where culturally familiar learning aids, peer collaboration, and community support replace one-on-one teacher mediation as the main method of cognitive development.

In addition, the lack of a comprehensive understanding of ASD among the stakeholders, including the teachers, policymakers, parents, peers, and communities, hindered the implementation of inclusive strategies. This highlights the fact that deficient teacher and learner support, a lack of continuous ASD-specific training, CAPS curriculum inaccessibility, and insufficient and inadequate accommodations have a vital impact on effective inclusion.

The findings also suggest that poor teacher training, limited awareness of inclusion policies, and excessive workloads impede the implementation of inclusive values. Finally, it emphasises that insufficient funding for resources and lack of infrastructure in alignment with IE principles ultimately impede ASD inclusion. In conclusion, all these factors significantly influence the inclusion of learners with ASD in South African mainstream classrooms.

This paper recommends that future studies focus on gathering statistics to show the prevalence of ASD, as the situation remains unclear, except in the Western Cape. As long as the statistics about the prevalence of ASD learners remain uncertain, it affects all the requirements for schools, including teachers' support and training needs, resources and infrastructural support, thus impacting the inclusion of ASD learners. In accordance, more information on the relationship between the prevalence and diagnostic aspects, the lack of research, and social and cultural norms would aid future researchers in establishing a greater degree of accuracy about this phenomenon. While the study acknowledges the importance of international practices, it also highlights the dangers of uncritical policy transfer. Hence, the requirement for adaptive over imitative strategies, especially regarding the South African context, which is characterised by historical inequality, linguistic diversity, and deeply rooted cultural beliefs about disability. Thus, the call for South Africa to focus on contextually responsive inclusion frameworks, alongside integrating culturally grounded teacher training, local community engagement, and flexible curriculum differentiation within the existing socio-economic constraints, rather than adopting Western frameworks.

Moreover, a longitudinal study regarding teacher training could provide insights into why teachers are unaware of how to deal with learning barriers, how initial teacher training can be adapted to educate teachers, and how negative teacher attitudes towards the inclusion of learners with ASD could be eliminated.

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