

Challenges faced and Strategies used by Teachers to enhance Academic Performance among Learners with Autism Spectrum Disorder (ASD) at a School in Zimbabwe: A Quantitative Descriptive Study

Kimberly Kanda¹, Patricia N Mutandwa², Tongai F Chichaya^{3*}

¹Zimbabwe Open University, Faculty of Social Sciences, Disability Studies, Zimbabwe

²Queen Margaret University, School of Health Sciences, U.K

³Coventry University, School of Health and Care, U.K

ABSTRACT

Purpose: *The study aimed to investigate the challenges that teachers encounter when teaching learners with autism at a high school in Zimbabwe, and to identify strategies to enhance the academic performance of these students.*

Method: *Twenty teachers participated in the study. A cross-sectional survey was used to collect data from them with the help of a questionnaire. Descriptive statistics were used to analyse the data.*

Results: *Key challenges reported by the teachers were: time management, meltdowns, difficulties in coping with routine changes, obsessive compulsive tendencies and being easily distracted. Their confidence levels when teaching learners with autism were reported as: 5% not confident at all; 15% slightly confident; 65% fairly confident; 10% more confident; and 5% extremely confident. Most of the strategies currently employed in school relate to the use of visual teaching materials like colour coding, objects, videos, and worksheets. Participants recommended the adoption of new strategies such as provision of therapies at the school, advocacy to raise awareness on the educational needs of children with autism, and changes to curriculum delivery.*

Conclusion: *Despite using a range of strategies to support learners with autism, the results imply a significant need for the teachers to be trained on autism and how to better support these learners to enhance their academic performance. However, the findings may not be generalisable to other schools as the study focussed on only one high school in an urban area of Zimbabwe.*

* Corresponding author: Tongai F Chichaya, email: chichayatf@gmail.com

Key words: neurodiversity, education, Autism Spectrum Disorder, Zimbabwe, teaching and learning strategies

INTRODUCTION

Students with autism spectrum disorder (ASD) have unique needs and consequently face challenges in learning, social skills and interpersonal communication. These students are not a homogenous group and have differences in the way they develop and process information (Dwyer, 2022). There is limited research on the prevalence of ASD in Zimbabwe; hence, although the actual figure is not known, they are estimated to be 200,000 out of a population of over 14 million people (Chitiyo et al, 2017). This figure remains questionable as diagnostic services are limited and often inaccessible to many people who could potentially meet the criteria for ASD. Fleury et al (2014) noted that the number of students with ASD who are now being included in mainstream classrooms in Zimbabwe has increased over the past few years. This presents teachers with the responsibility to meet the social, behavioural, and academic needs of these students.

According to a study on the trends, practices and challenges of ASD in Zimbabwe, there is a lack of qualified personnel specially trained to meet the needs of learners with ASD (Chitiyo and Chitiyo, 2019). There appears to be a gap in meeting the needs of the rising numbers of children needing the services (Majoko, 2016). Evidence shows that meeting the needs of educational professionals will benefit both the professional and the student with ASD, as it makes teaching and teacher-student interactions easier (Steen et al, 2020).

Therefore, the focus of the current study was to identify useful strategies to enhance the academic performance of students with ASD at a school in Zimbabwe. No local study has been conducted on the subject and anecdotal evidence shows that different teachers use different approaches to support learners with ASD at the school. Since the different strategies have not been documented and the perceptions of teachers in terms of their competence to educate learners with ASD are not known, this study was needed to address the identified gaps.

Objective

This study investigates the challenges encountered by teachers when teaching students with ASD at a high school in Zimbabwe, as well as the teachers' perceived level of knowledge about ASD. The study also aimed to identify

strategies recommended by the teachers to enhance academic performance of learners with ASD at the school.

METHOD

Study Setting

The study was carried out at a high school in an urban setting of Harare Province in Zimbabwe. The school provides mainstream education and enrolls students with ASD.

Study Design

A cross-sectional survey study design was used.

As the study aimed at investigating multiple factors that affect academic achievement among learners with ASD and to propose solutions based on perceptions of the teachers, a self-reported type of survey was used. This type of survey allows researchers to get valuable information from the participants in a quick and efficient way, eliminating the risk of participant attrition (Wang and Cheng, 2020).

Participants

The study population consisted of the 33 teachers at the school.

The inclusion criteria were:

- Teachers who had been at the school for at least one year, and
- Involved in teaching at least one learner with ASD in their class/es.

A total of 20 teachers met the inclusion criteria and the researchers decided to include all of them in the study as the number was not too big to require any sampling strategy.

Data Collection

A questionnaire consisting of predominantly closed questions and Likert scale type of questions, as well as a few open-ended questions, was used. The questionnaire captured demographic information of the participants and was designed to elicit responses that directly addressed the aim of the study. Before

it was finalised, the questionnaire was piloted with 3 teachers who were not part of the main study but understood the processes and procedures at the school and had previously taught learners with ASD. Following this, adjustments were made by adding the challenges faced by the teachers when teaching children with ASD.

Data Analysis

All completed questionnaires were labelled with code numbers, as for example 'A1' instead of the participant's name, to ensure anonymity. All twenty questionnaires were returned with all questions answered, giving a 100% retention rate. Descriptive statistics were used to analyse the data.

Ethical Considerations

Approval to conduct the study was obtained from Zimbabwe Open University and written permission to collect data from the teachers was obtained from the headmaster of the school. All the study participants gave their informed written consent. Ethical principles of autonomy, beneficence, non maleficence, and justice were adhered to throughout the research process.

RESULTS

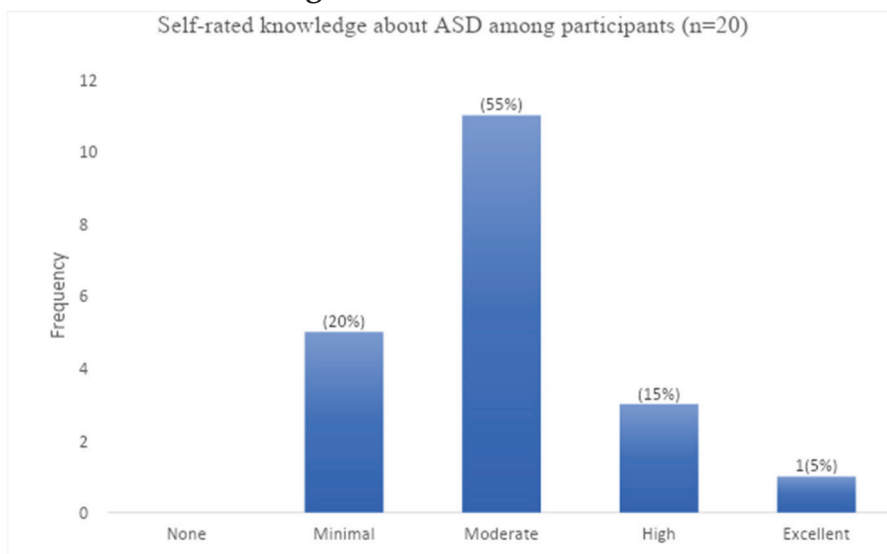
More female teachers (65%; n=13) than males (35%; n=7) participated in the study. Majority of the participants (45%; n=9) were between 40 and 49 years of age, followed by the age group of 21-39 years (30%; n=6). There were 15% (n=3) of participants between 50 and 59 years of age and another 15% (n=3) aged 60 years and above.

With regard to years of teaching experience, 30% (n=6) had between 10 and 15 years of experience at the school. Teachers with 4 - 6 years of teaching experience at the school represented 25% (n=5) in the sample. Teachers with 15 years or more experience, those with 7 - 9 years and those with 1 - 3 years of experience had a representation of 15% (n=3) for each category. Majority of the participants (40%; n=15) taught learners at Forms 3- 4 level (senior secondary school), followed by 30% (n=6) who taught Forms 1- 2 level (junior secondary school). Seven (19%) were Advanced Level teachers and the remaining 11% (n=4) taught other classes, but these were not specified. However, the responses showed that some teachers taught across the provided categories of year groups.

Teachers' Self-rated Knowledge about ASD

A total of 55% (n=11) of the participants had moderate knowledge about ASD. While 20% had minimal knowledge, 15% (3) considered that they had high knowledge. Only 1 participant gave the self-rating of excellent knowledge about ASD. Figure 1 shows how the participants rated their knowledge about ASD.

Figure 1: Self-rated Knowledge about ASD



Six (30%) of the participants did not know of any specific type of ASD, while the remaining 70% (n=14) correctly mentioned at least one type of ASD. Asperger's Syndrome was mentioned by 11 participants, followed by classic ASD mentioned by 3 participants.

Some of the conditions that were mentioned are not types of ASD, for example Down's Syndrome was mentioned by 1 participant. A condition like ADHD which was mentioned by 2 participants may occur together with ASD but it is a distinct diagnosis from ASD. Rett Syndrome, autistic disorder and pervasive developmental disorder not otherwise specified were listed as a type of ASD, but each of these was only mentioned once. However, it is important to highlight that the Diagnostic and Statistical Manual of Mental Disorders (DSM),

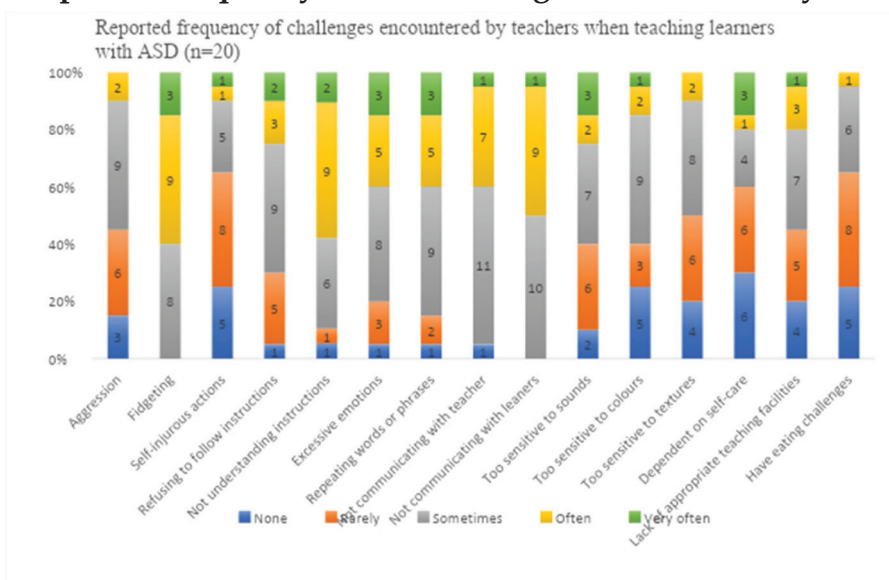
5th edition, consolidated the different categories of autism into one umbrella, i.e., ASD (American Psychiatric Association, 2013).

Level of Confidence when Teaching Learners with ASD

Thirteen (64%) of the participants reported that they were fairly confident to teach learners with ASD in the classroom. Three (15%) of the participants indicated that they were slightly confident when teaching students with ASD, two (10%) indicated that they were more confident, and one (5%) indicated not having the confidence to teach learners with ASD. Only 5% (n=1) indicated that they were extremely confident to teach learners with ASD.

Participants were asked to rate frequency of the commonly encountered challenges when teaching learners with ASD in their classes. Challenges such as aggression, self-injurious behaviour, difficulties with eating, being dependent on self-care and hypersensitivity to textures were either not or rarely encountered by most of the participants. The challenges most often encountered included not communicating with other learners, not understanding instructions and fidgeting. Between 20% and 55% of the participants were reported to have encountered all the challenges at some time. Figure 2 shows the reported frequency of the challenges encountered by the participants.

Figure 2: Reported Frequency of the Challenges Encountered by the Teachers



In addition to the challenges listed in the Figure above, participants were asked to list other challenges that learners with ASD encounter. Responses to this question yielded the following as key challenges: time management, meltdowns,

difficulties in coping with routine changes, obsessive compulsive tendencies, and being easily distracted. Other challenges they mentioned related to other people and not to the learners directly; for example, disagreements between the parent and teacher, difficulties of other children in understanding their peers with ASD, as well as the coping strategies that they use during lessons.

The open-ended question which asked participants to mention the social skills that they thought their learners lacked, yielded a wide range of responses. The responses were analysed thematically and resulted in four key areas, all centred on difficulties with communication, namely, difficulties with both expressing and interpreting non-verbal communication, avoidance of eye contact, limited verbal communication, and emotional disturbances such as anxiety or mood changes.

Level of Support required by Learners with ASD

In response to the question regarding how much support the teachers felt was required by learners with ASD, two (10%) of the participants indicated that their learners with ASD did not require any support during their lessons. Two (20%) of the participants said learners with ASD in their classes required minimal support, six (30%) stated that learners with ASD in their classes required moderate support, and another six (30%) of the participants indicated that the autistic learners in their classes required substantial support during lessons. Four (20%) of the participants felt that autistic learners in their classes required very substantial support.

Participants were asked to list any therapies being offered at the school to provide additional support for the learners. Seven participants (35%) reported that there were none and two (10%) mentioned that counselling was being provided. Other participants listed the following approaches but stated that they were not sure if these are being used at the school: cognitive behaviour therapy, humanistic approach (see Table 1), behavioural and cognitive approaches, psychosocial support and early intensive behavioural intervention.

Strategies currently being used by Teachers when teaching Learners with ASD

Participants were asked to list strategies that they currently use to enhance academic performance of learners with ASD. Responses from participants were grouped into three areas of approach which are summarised in Table 1.

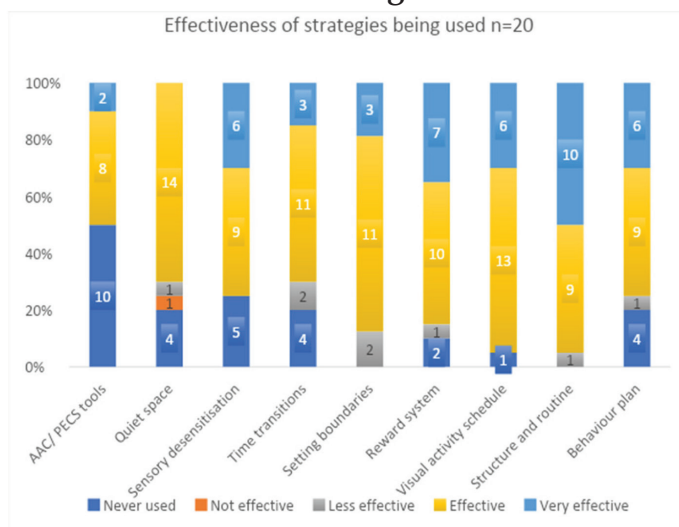
Table 1: Strategies currently used by Participants when teaching Learners with ASD

Approaches	Strategies listed by the Participants
Teaching materials	Colour coding questions and answers; Larger font size; Objects to manipulate; Multiple choice questions on computer; Use games; Use handouts; Use of technology; Worksheets; Visually appealing teaching aids; Videos; Music; Cartoons
Humanistic and attitudinal approaches	Treating them as individuals; Learner-centred approach; Differentiated teaching strategy for each child; Providing warning and preparation for changes; Peer-to-peer interaction; Life skills to boost confidence; Encouragement; Reward system
Structured approach	Teach at a slow pace; Small breaks in between sessions; Maintain structure and routine; Repetition; Task simplification; Providing fewer choices; Avoiding sensory overload

Participants were provided a list of strategies used by teachers when educating learners with ASD, based on published evidence, and were asked to rate the perceived effectiveness.

The rating on effectiveness of each strategy is provided in Figure 3. Fifty percent of the participants had never used Augmentative and Alternative Communication (AAC) tools such as sign language and Picture Exchange Communication Systems (PECS). However, those who had used AAC and PECS reported these strategies to be either effective or very effective at the school. Among all the listed strategies, having structure and routine was reported as the most effective approach.

Figure 3: Perceived Effectiveness of Strategies



As shown in Figure 3, most of the strategies were rated as either effective or very effective. A few participants identified some strategies such as 'Time transitions' and 'Setting boundaries' to be less effective, and only one reported that use of 'Quiet space' was not effective.

New Strategies proposed for Improving Academic Performance

Based on their experiences, participants were asked to provide new suggestions for improving academic performance among learners with ASD at the school. The responses were grouped into five areas of focus as presented in Table 2. Recommendations were made for the adoption of new strategies such as provision of therapies at the school, advocacy to raise awareness, capacity building and training for teachers on teaching learners with ASD, use of modern technology and some changes to curriculum delivery.

Table 2: Proposed New Solutions for Improving Academic Performance

Area of focus	New solutions proposed by Participants
Offer professional therapies at school	Occupational therapy; Physiotherapy; Speech and Language therapy; Applied Behavioural Analysis
Advocacy	Advocacy for the school; Advocacy for the learners; Communication with parents to encourage reading at home; Raising awareness about ASD; Cultivate a passion for reading at an early age; More interaction with mainstream students; Create a community environment
Training teachers on ASD	Staff training; Workshop for teachers on ASD; Teachers should be made aware of the needs of learners with ASD; Refresher courses for teachers; Educating the mainstream educators; Pointers on what to expect would help; Inviting visiting speakers would help
Use of technology and modern resources	Technological literacy; Colourful media; Use of media in lessons; Modern technology; More resources; Reading materials that stimulate desire to read; More specialised facilities
Curriculum delivery suggestions	Academic support programme; Bigger space and more teaching aids; Use of more teaching assistants; Improve teacher-pupil ratio; Enough learning space to accommodate learners with ASD; Improve socio-emotional learning skills; Use of textbooks tailor- made for ASD; Brief synopsis for the teacher about what each child's problem is

DISCUSSION

Autism spectrum disorder is a complex disorder and there is no single approach to meet the needs of all students with ASD. Hence, teaching strategies need to be adapted based on a student's individual needs, the resources available and the educational setting (National Institute of Mental Health, 2018). The concept of

neurodiversity acknowledges that people's brains are wired differently and as a result people learn differently, especially those with developmental conditions such as ASD. The concept helps to avoid viewing ASD as pathological; instead children with ASD are viewed as having brains that think, learn and process information differently and therefore require different approaches to enhance their learning (Dwyer, 2022). This concept also allows children with ASD to view themselves in a positive way.

Findings show that a good mix of teachers participated in this study, as they were from different age groups, with varied years of teaching experience, and there was representation across age groups taught. There were more females than males, which follows the expected distribution within the school. As expected from this heterogeneous group of participants, there were different levels of knowledge about ASD. Majority had a moderate knowledge about ASD, meaning that they have some ability to support the learners. There is potential for the three teachers who had high knowledge and one teacher who had excellent knowledge to provide peer support to their colleagues with minimal or moderate knowledge. It is however, important to note that the responses were self-rated, so there is a possibility that some teachers could have either overrated or underrated their knowledge (Demetriou, 2015).

Asperger's Syndrome was commonly stated as a type of ASD. The percentage of teachers (30%) who did not know any type of ASD was higher than expected, considering that they are already teaching learners with ASD at the school. However, the DSM-V combines the different categories of autism into one umbrella (American Psychiatric Association, 2013). Down Syndrome was wrongly identified as a type of ASD; such misconceptions need to be addressed to avoid teachers using strategies that are contraindicated for children with ASD. There is a need for teachers to be educated about neurodiversity, including the different presentations of ASD, the signs and symptoms as well as the unique learning support strategies that can be used (Segall and Campbell, 2012).

A correlation can be deduced between the teachers' level of knowledge about ASD and the level of confidence when teaching children with ASD. Hart and Malian (2013) point out that teachers need to have a comprehensive knowledge of ASD disability and be able to manage the manifested overt behaviours. While the majority of the participants had moderate knowledge of ASD, the majority were fairly confident about teaching learners with ASD. Only one teacher was extremely confident about teaching learners with ASD and only one teacher

reported having excellent knowledge about ASD. The teachers who reported being slightly confident or not confident imply the need for support and more knowledge to possibly increase their level of confidence when teaching learners with ASD.

Learners with ASD often present with a variety of learning challenges that interfere with their academic performance (Ruble and Robson, 2007; American Psychiatric Institution, 2013; Franz et al, 2017). Additionally, Segall and Campbell (2012) state that the realisation of inclusion in education with regard to students with ASD requires teachers to possess comprehension of ASD as well as to be thoroughly prepared to meet the needs of learners with the condition.

The challenges faced by teachers at the school when teaching learners with ASD follow the same pattern reported in literature (Leekam et al, 2011; Franz et al, 2017). The most common challenges were limited communication, inability to understand instructions and fidgeting. Furthermore, the lack of certain social skills among the learners posed a challenge to the teachers; for example, avoidance of eye contact, expressing and interpreting non-verbal communication, and emotional disturbances such as anxiety. Apart from some teachers having limited knowledge about ASD, some teachers reported finding it difficult when other students do not understand the behaviours of learners with ASD. Over 80% of the participants reported that their learners required moderate to very substantial support. This implies that the teachers need to be adequately trained and have adequate resources to provide the education required by these learners. It should be noted that there was a mention about challenges of dealing with disagreements between parents and teachers.

Different professional therapies are known to help learners with ASD to manage self-regulation, improve communication and acquire new skills (Edwards et al, 2018; Hatch-Rasmussen, 2021; McAnuff et al, 2023). The availability of such therapies within the school could be of valuable support to the learners and teachers alike. Most of the strategies currently being used at the school relate to visual teaching materials such as use of colour coding, objects, videos, and worksheets. The teachers also value approaches that focus on life skills and respecting each child as an individual. This aligns well with the concept of neurodiversity. The academic performance of students with ASD is highly dependent on the extent to which the educational programme can be individualised (Lynch and Irvine, 2009).

Providing structured learning such as the use of small breaks, maintaining routine, slow pace, and task simplification are some approaches that are commonly used. There were varied strategies reported by the teachers; this is to be expected, as each learner with ASD is a unique individual and there cannot be a one-size-fits-all approach in teaching them. This means that enhancing academic performance among learners with ASD would require a combination of strategies.

A wide range of suggestions for improving academic performance among learners with ASD was proposed by the teachers. However, some of the suggestions were not new as other teachers had reported having used them and rated their perceived effectiveness. Apparently some teachers were unaware of the strategies that other teachers at the school were employing. This could be linked with the variance in knowledge levels among the teachers. These approaches were mainly Augmentative and Alternative Communication tools, sign language and Picture Exchange Communication System, sensory desensitisation, and behaviour plans. All teachers had used 'Setting boundaries' as well as 'Structured routines'; these were mainly rated as effective or very effective. Despite many strategies being rated as effective, it should be noted that effectiveness depends on the learner's uniqueness and knowledge, and skills of the teachers on these strategies (Dwyer, 2022).

The proposed strategies show that teachers consider other broad factors to have an impact on the learners' academic performance, and need aspects such as advocacy and awareness-raising to be addressed. There was a significant call for teachers to be provided with training about ASD, and this links well with the findings on their knowledge and confidence levels when teaching learners with ASD. Steen et al (2020) alluded to the fact that it is essential to provide teachers with adequate support so that they are able to meet the needs of their learners with ASD.

Offering of professional services such as occupational therapy, physiotherapy and speech and language therapy within the school could enhance learning and also help teachers to know the different ways to support their learners with ASD using direct and specific advice from the therapists (McAnuff et al, 2023). This approach could also be helpful in maintaining daily school routines for the learners, without the need to go for therapy appointments away from the school. Participants suggested the use of modern technology but did not specify the type of modern technology or facilities they meant. Important curriculum delivery suggestions were provided, as for example, the introduction of an academic

support programme also known as an individual education plan, which helps to ensure that each learner is provided with optimal support to realise his/her full learning potential.

Implications and Limitations

The study results imply a significant need for the teachers to be trained on ASD and for the learners with ASD to be better supported in order to enhance their academic performance. Many strategies have been rated as effective but, considering that learners are different, the strategies need to be appropriate for each individual learner. In addition, all teachers were not familiar with all strategies so the effectiveness of the strategies could not have been fully examined.

Generalisation of the findings from the study could be limited. The study focused on one private high school in an urban area which cannot be considered a true representation of all schools in Zimbabwe or elsewhere. Nevertheless, the study adds to the currently slender body of knowledge on education of learners with ASD in Zimbabwe and other developing countries.

CONCLUSION

The study has clearly shown that teachers at the school are using a wide range of strategies to support learners with ASD, despite some teachers feeling less confident and having moderate knowledge about ASD. Given their understanding of the setting and awareness of the needs of the students that they support, the teachers have identified new approaches that could potentially ensure enhanced academic performance of learners with ASD. Introduction and consistent implementation of individualised academic support programmes or individual education plans could enable streamlining the support provided to learners with ASD in the school.

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