



Teachers' Knowledge and Competencies in Supporting Learners with Autism in Ghana

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Abstract

This study examined the increasing importance of integrating children with autism into mainstream educational institutions in Ghana, highlighting the challenges faced by educators due to inadequate skills and training. A mixed-methods approach was employed to gather data from 51 teachers, utilizing both a structured questionnaire and an in-depth interview. The study demonstrated that numerous teachers hold an inadequate grasp of autism. There were shortcomings in professional training, resulting in feelings of inadequacy among the educators. Therefore, preparing teachers is crucial in making schools more inclusive and welcoming to learners with autism. The study recommends enhancing autism-specific training programs, initiating regular professional development seminars and establishing peer support networks to equip educators with the necessary skills to manage children with autism in inclusive settings effectively.

Keywords: Autism; teachers' understanding; readiness; skills of teachers.

Introduction

Children with autism are gradually being enrolled in regular education schools in Ghana (Senoo et al. 2024; Awuna et al. 2024). Therefore, it is expected that teachers who teach the learners with autism in the regular education classrooms should be competent in teaching and meeting the unique needs of the children, to address their learning needs and develop their potentials. Since education serves as a significant source of management for persons with autism, teachers must have a strong sense of self-efficacy to improve the quality of life of the learners with autism. They must be trained, be skillful and knowledgeable about autism, especially on the interventional and educational practices specific to supporting the learners with autism in the classroom (Senoo et al. 2024).

Ghana has been committed to providing education for all persons, children and youth alike, irrespective of their differences, disabilities and impairments. All persons, including people with special educational needs and disabilities, have the right to participate in learning as much as possible alongside their peers and to learn in an accessible educational environment in a regular education classroom (Ministry of Education, 2015; 2003). Given this, the Ministry of Education introduced the inclusive education policy in 2015 to provide equity in educational opportunities for all persons, as well as enriching teacher training programs to empower teachers to work with diverse learners in the learning environment (Ministry of Education 2018; 2015). In the bid to make education more accessible to students with varied needs, teachers are supposed to be provided with human and material resources to support diverse learners, including those with autism.

The Government of Ghana through its diverse policy directives, such as the Inclusive Education Policy, New Standard Based Curriculum, Free Compulsory Universal Basic Education (FCUBE), Free Senior High School Policy, and National School Feeding Programme, has introduced curriculum based on the universal design framework to promote accessibility and participation of diverse

learners. To reinforce universal access and participation in education, the government provides free basic and senior high school education for all learners attending government funded schools. These measures were put in place to aid and encourage all students to participate fully in schools in the country (Ministry of Education, 2019; Frank & Joshi, 2017; Engelbrecht et al., 2016; Kuyini and Abosi, 2014; Ghana Education Service, 2011).

Despite the policy initiatives by the Government of Ghana through the Ministry of Education, there have been criticisms on the policy implementation efforts to make education more accessible and inclusive to students with intellectual-related difficulties and other special educational needs in the regular education setting. There have been criticisms on the policy implementation efforts to make education more accessible and inclusive to students with intellectual-related difficulties and other special educational needs in the regular education setting. The enrolment for most persons with such intellectual and developmental disabilities are primarily channeled to predominantly special schools rather than regular schools, even though these learners could have the capabilities to learn alongside their peers in regular education classrooms (Lilley, 2015).

Teachers have been criticized for not using teaching methods and approaches that are reflective and accommodating the needs of the diverse learners with special educational needs. Research indicates that some learners are not benefiting from teaching methodologies used in the regular classrooms (Bawa & Osei, 2018; Robinson, 2017). This reinforces the need for regular education schools and classrooms to be structured in such a way that teaching and learning is effective and fruitful for students with autism. Research emphasizes the pivotal role of teacher competence in supporting learners with autism, underscoring the negative impact of inadequate knowledge and skills of teachers in providing quality education for the overall growth and development of the children with autism (Taresh et al., 2020; Talib & Paulson, 2015).

Senoo et al. (2024), Twi-Yeboah et al. (2021) and Ayoka (2018) in their respective studies

reveal that teachers encounter challenges in supporting children with autism due to their low understanding and lack of competencies in how to support the learners, which hampers the implementation of inclusive education. While existing literature has primarily focused on special education teachers' support to students with autism, comparatively, little attention has been given to the understanding and competencies of regular classroom teachers in teaching and supporting autistic learners within mainstream educational environments in Ghana and across many African countries (Alhassan & Abosi, 2014; Genovesi et al., 2024; Kuyini & Desai, 2008). Other studies conducted in Ghana and sub-Saharan Africa on autism have predominantly focused on health workers' knowledge and attitudes toward autism, parental experiences and perceptions of caring for children with autism (Kissi- Abrokwah & Koduah- Ntim, 2022; Oti- Boadi et al., 2025). Therefore, this study fills the gap in the Ghanaian context by providing research findings on teachers' understanding of autism as well as their competencies in supporting learners with autism in Ghana.

Literature Review

This section presents an overview of the theory guiding the study as well as detailed empirical review of literature for the study.

Theoretical Framework

The theory of self-efficacy by Albert Bandura (1977) pertains to an individual's belief in their capability to perform behaviors necessary to achieve desired outcomes. Self-efficacy is the belief in one's ability to organize and execute actions required to attain specific goals (Bandura, 1997). This belief shapes teachers' choice and intensity of instructional practices when working with students with autism, as well as their confidence in achieving positive outcomes in the classroom.

According to Warner and Schwarzer (2017) and Sdorow (1993), self-efficacy comprises two components: efficacy expectancy and outcome expectations. Efficacy expectancy reflects a teacher's belief in their capacity to influence outcomes while outcome expectancy is the belief that effort will result in a desired outcome. Senler (2016) suggests that teachers' efficacy is influenced by their locus of control, as proposed by Rotter (1966), where internal locus of control relates to the belief that one's actions

determines outcomes while external locus of control attributes outcomes to external factors.

Bandura (1977) identified four sources of self-efficacy: mastery experiences, vicarious experiences, social persuasion and physiological and emotional states. Mastery experiences play a significant role in shaping self-efficacy as successful past experiences contribute to feelings of competence. He emphasized that repeated successes lead to strong efficacy expectations while repeated failures diminish them. Garza et al. (2014) suggested that individuals with high self-efficacy are more likely to engage in challenging activities and persist in facing difficulties, leading to further mastery experiences and increased self-efficacy. Conversely, individuals with low self-efficacy tend to avoid challenging tasks and give up easily, perpetuating a cycle of decreased self-efficacy (Bandura, 1977; Garza et al., 2014).

In this study, the Self-Efficacy Theory provides a foundational framework for understanding teachers' beliefs in their capacity to educate learners with autism effectively. This theory posits that self-efficacy or belief in one's ability to execute necessary actions or skills to achieve desired outcomes is influenced by mastery experiences, vicarious experiences, social persuasion and physiological/emotional states. Teachers who have understanding about autism and have the skills in supporting students with autism will be more competent and confident in their ability to support the learners with autism. Teachers who have also succeeded in teaching learners with autism are more likely to feel confident in their ability to do so again. Observing the successful experiences of peers can further increase their confidence. By applying the Self-Efficacy Theory, this study sought to explore teachers' beliefs about their capability and competence to teach students with autism. Understanding factors contributing to teachers' self-efficacy can inform interventions designed to enhance teacher training and support in educating autistic learners. Through this lens, the study sought to shed light on the critical role of teachers' competence in supporting learners with autism.

Empirical Literature Review

A study of Paraskevi (2021) found a correlation between experience, knowledge and confidence in successful inclusion of children

with autism. Studies by Gómez-Marí et al. (2021); Keen et al., 2016 and Al-Sharbati et al. (2015) revealed that mainstream school teachers had low knowledge about autism. Twi- Yeboah et al. (2021) and Omolayo et al. (2020) further reported low levels of knowledge of autism among teachers in Ghana and Nigeria (Twi-Yeboah et al., 2021; Omolayo et al., 2020).

Comprehensive training in autism is essential for educators to adequately support individuals with the disorder. Studies by Yasar and Cronin (2014) and Boyle et al. (2022) reveal deficiencies in teacher preparation and professional development, hindering effective interventions for learners with autism spectrum disorder (ASD). Despite varied efforts across Ghana, Nigeria, Kenya, and Tanzania, challenges, such as limited resources and awareness persist, underscoring the ongoing need for enhanced teacher training to support learners with autism effectively (Odunsi, 2017; Paul & Brisibe, 2015; Ndunguru & Kisanga, 2023).

Kanjatanga et al. (2020) identified the absence of occupational therapists and a multidisciplinary team as a major barrier to supporting individuals with autism in Ghanaian schools. Similarly, Kuyini and Abosi (2014) observed that teachers employed fewer instructional adaptations due to limited knowledge and skills, corroborating the findings of Kanjatanga et al. (2020). Rakap et al. (2016) further reported deficiencies in teachers' use of instructional adaptations for learners with special educational needs. In contrast, Taliaferro et al. (2015) found that teachers with training in autism demonstrated stronger intervention skills and a greater inclination toward inclusive education, underscoring the potential benefits of preparing teachers to support individuals with autism and enhance their ability to address autism-related challenges

Methodology

This study employed a mixed methods approach, integrating qualitative and quantitative methodologies to provide a comprehensive analysis.

Design

An explanatory sequential research design was employed, beginning with quantitative data collection and analysis, followed by a

qualitative phase. This design allowed for the collection of numerical data on the attitudes and opinions of the target population, as well as an in-depth understanding of teachers' competencies in supporting students with autism (Creswell & Creswell, 2017).

Population and Sampling

The target population comprised approximately 90 teachers from five mainstream basic schools attended by learners with autism, of which 51 teachers participated in the study. All the 51 teachers completed a survey and four were subsequently interviewed to provide deeper insights, thereby creating a nested sample (Onwuegbuzie & Collins, 2017; Tanner, 2023). Purposive sampling was used to select the schools, random sampling was employed to select the 51 teachers and purposive sampling was applied to select four interviewees from among the 51 teachers, thus forming a nested sample (Creswell & Creswell, 2017; Onwuegbuzie & Collins, 2017).

Instruments

Data collection involved a questionnaire consisting of 20 closed-ended items, adapted and modified from previous studies, to assess teachers' understanding of autism, their readiness, and their skills in supporting learners with autism. In addition, in-depth interviews were conducted using an interview guide to further explore teachers' understanding and competencies.

Reliability and Validity

A reliability test, using the Cronbach's alpha yielded values above 0.70 for all the constructs, indicating acceptable internal consistency (Hair et al., 2010; Fraenkel & Wallen, 2007; Nunnally, 1978). The use of random sampling further helped reduce potential threats to the internal validity (Creswell & Creswell, 2017).

The trustworthiness of qualitative findings was ensured through credibility, dependability, transferability, and confirmability (Lincoln & Guba, 1985). Credibility was established through member checking and expert scrutiny (Forero et al., 2018; Shenton, 2004). Dependability and transferability were achieved through detailed record-keeping and cogent descriptions. Confirmability was established by comparing findings with other research (Forero et al., 2018).

Statistical Treatment of Data

Survey data was analyzed using the SPSS version 23, specifically frequencies and percentages, while thematic analysis was applied to analyzing information derived from the interviews.

Ethical Considerations

Participation in the study was voluntary and informed consent was sought from all the respondents. They were given the choice of opting out of the study or refusing to answer questions if they so desired. Furthermore, the respondents were assured of their anonymity and confidentiality.

Findings and Discussion

This section presents the findings from both the quantitative and qualitative phases of the study in a sequential order.

Research Question One: What understanding do teachers have about Autism?

Table 1 presents the questionnaire results on teachers' understanding of autism, indicating

recognition of communication and sensory challenges, such as speech limitations and sensory processing difficulties.

In this discussion, we combined strongly disagree with disagree to make it disagree. Also, strongly agree with agree was made as agree to make the discussion easily comprehensible. Table 1 presents the findings of a survey that asked educators to rate their understanding of autism spectrum disorder. It shows that they were aware of the various problems associated with the disease. First, most respondents, 78.3%, disagreed with the idea that "Autism is caused by a lack of mothers' emotional responses to their children's needs." Only 5.9% agreed, which means they did not think that how mothers act is a cause of autism. The assertion "Autism affects males more than females" provoked diverse reactions. While 47.1% of the participants remained neutral, 17.6% agreed and 35.3% disagreed. This shows that educators did not all agree on this subject, which means that many of them do not know how common autism is in both boys and girls.

Table 1: Teachers' understanding of autism

Statement	Disagree	Undecided	Agree
Autism is caused by the lack of mothers' emotional response to their children's needs	40 (78.3%)	8 (15.7%)	3 (5.9%)
Autism affects males more than females	18 (35.3%)	24 (47.1%)	9 (17.6%)
There is limited or no speech development in children with autism	7 (13.9%)	12 (23.4%)	32 (62.7%)
Some children with autism avoid eye contact with others	18 (35.3%)	9 (17.6%)	24 (47.1%)
Children with autism overreact or are sensitive to some noise, light, and touch	11 (21.6%)	6 (11.8%)	34(66.6%)

In the same way, 62.7% of respondents agreed with the statement "There is limited or no speech development in children with autism," which shows that many children with autism have trouble speaking. On the other hand, just 13.9% disagreed, indicating that they understood that speech development can vary for these children. The assertion "Some children with autism avoid eye contact with others" was somewhat positive as 47.1% of educators agreed and 35.3% disagreed. This indicates that a significant number of teachers recognized the challenge that some children with autism may face in engaging with others. Finally, when asked about sensory sensitivities, 66.6% agreed with the statement "Children with autism overreact or are sensitive to some noise, light, and touch." This shows that many

of them knew that problems with sensory processing are a common sign of autism.

Awareness of autism emerged as a theme in the qualitative findings. Furthermore, identification and interventions related to autism emerged as sub-themes.

Understanding by Observation

How autism is identified emerged as a sub-theme under teachers' awareness about autism. This is observed in some comments by the teachers. For example, Teacher D remarked,

An autistic person is one with the inability to do something. They are not as normal as the normal child. They do things differently from normal children. They delay speech and mostly like repeating words. That is what makes one

know a person has autism. The child I teach cannot talk well, and because of that, whenever he wants to get my attention, and I do not understand what he wants, he screams or makes noise.

Teacher B also expressed, "From my observation, with people with autism, it takes a long time for them to develop how to talk. Sometimes, people with autism cannot talk. However, they can hear. It takes about four to five years before some start talking."

Teachers' understanding of autism was primarily based on their observations of specific students, leading to a limited grasp of the disorder's spectrum (Wei & Yasin, 2017; Bandura, 1997). While they recognized certain behaviors like echolalia, their comprehension lacked depth, echoing previous research on teachers' limited knowledge of autism (American Psychiatric Association, 2000; Georgiades et al., 2022). Thus, teachers' understanding of autism was found to be limited, as their knowledge was largely based on observations of individual learners with autism rather than a broader understanding of the condition. These findings corroborate those of Twi-Yeboah et al. (2021), who also reported low levels of autism knowledge among

teachers. These findings underscore the need for comprehensive and targeted training programs to better equip teachers with the knowledge and skills required to support learners with autism in educational settings.

Research Question 2: What is the readiness of teachers to teach learners with Autism?

Table 2 highlights significant disagreement among teachers regarding their readiness to teach learners with autism, particularly in communication strategies, social interaction skills, curriculum adaptation and behavioral interventions.

Table 2 illustrates how teachers perceived the effectiveness of their training in preparing them to work with students who have autism. The Table indicates that 60.8% disagreed with the statement, "My educational training has prepared me in communication strategies for persons with autism." This indicates a significant disparity between how they perceived their readiness to use effective communication tactics. Likewise, 64.7% stated that their coursework did not predominantly focus on social skills training for individuals with autism, while only 13.7% concurred that this was a focal point.

Table 2: Teachers' readiness to teach students with autism

Statement	Disagree	Undecided	Agree
My educational training has prepared me in communication strategies for persons with autism	31 (60.8%)	11 (21.6%)	9 (17.6%)
My educational coursework primarily involved social skills training for persons with autism	33 (64.7%)	11 (21.6%)	7 (13.7%)
My educational training primarily involved teaching and instructional methods to suit students with autism	34 (66.7%)	6 (11.8%)	11 (21.5%)
My educational training primarily involved behavioral intervention plans for people with autism.	32 (62.8%)	8 (15.7%)	11 (21.6%)

Additionally, 66.7% disagreed with and 11.8% remained neutral regarding their training in teaching approaches for learners with autism, suggesting that there was insufficient focus on effective teaching practices. Lastly, when it came to behavioral intervention plans, 62.8% disagreed and 15.7% had no opinion while only 21.6% thought they were well-trained in this important area. In general, these results indicate that teachers did not believe they are well-trained in communication tactics, social skills, teaching methods and behavioral interventions for students with autism. This indicates a need for improved educational

programs in this area. These findings underscore the urgent need for more targeted and comprehensive training program, related to concerns raised by Hill-Jackson and Lewis (2023).

Interviews conducted alongside the questionnaire further emphasized the need for training programs that empower teachers to effectively support students with autism. The qualitative findings introduced various themes.

Lack of Professional Training in Autism

Lack of professional training in autism surfaced as a sub-theme concerning teachers' readiness

in teaching learners with autism. This sub-theme is observed in some of the teachers' comments. For example, Teacher A remarked, "I have not attended any training. We, the teachers, are not even supposed to handle the children with autism; we are just doing them a favor; there is no need to do any training about autism." Teacher B commented,

I have not had any training in autism, but I mostly ask about autism from a class three teacher, who teaches a child with cerebral palsy, who cannot talk or write since the child that I teach cannot talk. I also get my training in autism by observing the child for a long time and asking the other teacher.

Teacher C also remarked, "I have not been trained or attended any program on autism. However, I get the information I need about teaching people with autism from one Teacher and through the internet."

The findings show that teachers lack professional training in autism, with Teacher (A) hesitant due to a perceived lack of responsibility for autistic students. The identified informal learning from colleagues may not successfully address the autistic students' learning and support needs, impacting self-efficacy of teachers. Comprehensive training is crucial, as indicated by Wei and Yasin (2017) and Taresh et al. (2020), correlating with improved knowledge and instructional abilities for teacher and autistic students. Garrad et al. (2019) noted that effective frequent training and professional development of teachers enhanced positive attitudes and confidence among teachers. Again, Johnson et al. (2021) and Devi and Ganguly (2022) stressed the importance of autism-specific training in boosting teachers' competence and self-efficacy. These suggest that frequent, systematic training and professional development for teachers on autism can make them more prepared, confident, and positive, which in turn will help students with autism perform better in school.

Research Question 3: What skills do the teachers have in teaching learners with autism?

Table 3 presents the results of teachers' skills in teaching learners with autism, derived from the questionnaire. The results are grouped under sub-themes: communication and visual

schedules, teaching and interaction methods and behaviour and sensory issues management.

Communication Skills and Visual Schedules

The questionnaire findings revealed teachers' limited skills in communication and the use of visual schedules, with many expressing low confidence in their proficiency (17.6% strongly disagreed and 33.3% disagreed with their ability to use the picture exchange communication systems. Furthermore, 41.2% disagreed and 35.3% neither agreed nor disagreed regarding the use of visual supports). These findings suggest a perceived lack of expertise among teachers, contrasting with the Maine Center for Community Inclusion and Disability Studies (2009), which reported that teachers were skilled in implementing supports for autistic students.

From qualitative data, communication skills emerged as a sub-theme of teachers' skills in teaching students with autism. For example, Teacher A recalled,

If I want to teach the child to request something, I draw pictures of the things the child likes to do and stick them to the wall. If I notice the child wants something, I help him pick the picture of what he wants to do and after he gives me the picture, I allow him to do the activity in the picture. That way, I teach him how to ask for permission or communicate.

Teacher B recalled, "I communicate with them like the deaf communicate, using signs or actions, if I want them to do something." Teacher C remarked, "If I want to tell the child to do something, I just sign and talk to the students with autism because they cannot talk but can hear." Teacher D further commented, "If the child wants something, he pulls me to what he wants, pointing at it. Therefore, if I want to tell the child something or the child wants something, we communicate using actions."

Teacher A's response reflects confidence in using the picture exchange communication system (PECS) to enhance communication outcomes. However, the other teachers' reliance on only gestures and verbal cues, without active engagement, aligns with previous research highlighting the significance

of effective communication strategies like PECS (Alamer 2020; Creger, 2019).

Teaching and Interaction Methods

The questionnaire's findings reveal teachers' limited skills in various teaching methods for learners with autism. As indicated in Table 3, many teachers disagreed or expressed uncertainty about breaking down complex tasks (35.3% disagreed, 17.6% neither agreed nor disagreed). Furthermore, 37.3% disagreed with using peer mediated methods while only 31.4% agreed they could provide relevant assignments. These results align with Dixon et al. (2014) findings, indicating teachers' challenges with adapting instruction for diverse learners.

Curriculum and Instructional Adoptions

Another sub-theme that emerged from the study is curriculum and instructional adaptations. For example, Teacher D commented,

When teaching a new topic, like numeracy, I use number legos to teach the autistic student because he cannot write. I draw the number, mention it, and ask him to pick the Lego bricks with that number I draw. I also use the same process to teach colours to a child with autism.

Teacher B commented, "It is not easy to teach the child because he cannot write. So, I just let them scribble and colour. I try to teach the child to learn the alphabet. However, doing that is difficult because the child cannot write." Teacher D advocates for curriculum modifications for autistic students, unlike the Teacher B's hesitance, echoing Kuyini and Desai (2007) but contrasting with the Maine Center for Community Inclusion and Disability Studies (Rose & Meyer, 2002). Bandura (1977) suggested that teachers' difficulty may stem from lack of mastery while Matalaka et al. (2024) supports curriculum modifications' efficacy in enhancing student engagement.

Table 3: Teachers' skills in teaching students with autism

Statement	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
Communication Skills and visual schedules					
I am skilled in using picture exchange to improve communication.	9 (17.6%)	17 (33.3%)	13 (25.5%)	7 (13.7%)	5 (9.8%)
I am experienced in using visual supports and schedules as timetables for students with autism to facilitate functioning in class	9 (17.6%)	21 (41.2%)	18 (35.3%)	9 (17.6%)	1 (2.1%)
Sub skills: Teaching and interaction methods					
I am practiced in breaking down complex skills and tasks into more minor activities to facilitate learning	4 (7.8%)	18 (35.3%)	9 (17.6%)	17 (33.3%)	3 (5.9%)
I use peer mediated methods in supporting children with autism	5 (9.8%)	19 (37.3%)	14 (27.5%)	10 (19.6%)	3 (5.9%)
I adapt my teaching and assessment methods to suit students with autism	10 (19.6%)	23 (45.1%)	8 (15.7%)	6 (11.8%)	4 (7.8%)
I give students with autism relevant and functional assignments they can relate to.	11 (21.6%)	12 (23.5%)	10 (19.6%)	16 (31.4%)	2 (3.9%)
Sub skills: Behaviour and sensory issue management					
I use rewards and removal of rewards in managing the behaviour of students with autism	10 (19.6%)	15 (29.4%)	9 (17.6%)	14 (27.5%)	3 (5.9%)
I can use sensory integration activities to manage the sensory difficulties of students with autism.	9 (17.6%)	18 (35.3%)	10 (19.6%)	12 (23.5%)	2 (3.9%)

Interaction Skills

Another theme that emerged from the study is interaction skills. For example, Teacher A

commented: "Interaction occurs during playtime, where we leave the children with autism to follow their mates or just imitate

them." Teacher B also remarked, "The child with autism knows how to interact, so when the children go out of class during break time, the child with autism must be left to run about with the peers."

The teachers seemed to believe that learners with autism could only learn to interact during play or rest periods, resulting in unstructured activities and limited interaction opportunities during class time. Interviews with teachers indicated that their interaction strategies lacked specific goals for improving interaction skills, such as eye contact or pretend play, contrary to Maich et al.'s, (2018) recommendation of using play groups and buddies for turn-taking activities to facilitate interaction among students with autism.

Structured Learning Environment

Another theme that emerged from the study is a structured learning environment. For example, Teacher A remarked,

The children with autism I teach do not follow any schedule or timetable. We just try to keep the children busy until they are tired so that I can teach the other students without autism. What I mostly do is give them a pencil to draw whatever they want with, and the ones whose condition is not serious, I sometimes try to teach them using the level of a kindergarten student.

The findings reveal insufficiently structured class timetables for learners with autism, impacting their understanding of routine and autonomy (Sterling-Turner & Jordan, 2007; Panerai et al., 2009). The absence of transition activities further compounded difficulties in adapting to routines, highlighting the importance of structured environments for promoting learning and independence among autistic students.

Behaviour and Sensory Processing Management

The questionnaire revealed substantial uncertainty or disagreement among teachers regarding the use of positive and negative reinforcements (19.6% and 29.4%) and sensory integration strategies (17.6% and 35.3%) for autistic students, highlighting challenges noted by Dovey et al. (2017).

Interviews highlight vital themes, underlining teachers' multifaceted challenges and the need for comprehensive training and support.

Behaviour Management Skills

Another theme that emerged from the study is sensory-behaviour management skills. For example, Teacher C commented,

.....when the child becomes so hyperactive that it is difficult to control him, we, the teachers in the class put the child in a special chair and sometimes restrain him tightly so it that makes it difficult for the child to get out to go and cause trouble.

The respondent's evidence reveals challenges in managing hyperactivity among learners with autism, often leading to punitive measures instead of recognizing underlying symptoms. Gourley et al. (2012) highlighted the importance of teachers having skills in the management of behavior and sensory problems. However, Gomez-Mari et al. (2021) also indicates teachers have limited proficiency in behaviour management approaches which is consistent with findings of the current study.

These findings indicated that teachers felt less skilled in teaching children with autism, managing behavioral and sensory challenges and effectively communicating and interacting with them. These results align with Dixon et al. (2014), who found that teachers face difficulties adapting the instruction for diverse learners, and with Gómez-Marí et al. (2021), who reported that teachers had limited skills in managing challenging behaviors in students with autism.

Conclusions

The study concludes that educators lacked in-depth knowledge about autism, and what they do know is often based on their observations. This shows that they need further training to learn more about autism spectrum disorder. Many teachers did not feel ready to educate kids with autism, especially when it comes to communication tactics, social skills, and behavioral interventions. This illustrates the importance of having thorough professional development programs. Additionally, teachers lacked effective communication, teaching and behaviour management skills, highlighting the importance of providing them with specialized

training to enhance their abilities and better support students with autism in the classroom.

Recommendations

Based on the conclusions, it is essential to enhance training programs for educators who work with students with autism spectrum disorder, enabling them to acquire the necessary knowledge and effective teaching methods. Additionally, educators should attend regular professional development seminars to enhance their confidence in communication, social skills and behavior interventions. Lastly, establishing peer support networks will facilitate collaboration among teachers and the sharing of resources, ultimately fostering a community of ongoing learning and growth.

References

- Alhassan, S. and Abosi, C. O. (2014). Teacher effectiveness in adapting instruction for pupils with learning difficulties in regular classrooms in Ghana. *SAGE Open*, 4(1), 1–9.
- Alamer, K. S. (2020). An examination of early childhood teachers' experiences and perceptions regarding evidence-based practices used to improve functional communication skills of young children with autism spectrum disorder. The University of North Carolina at Greensboro.
- Al-Sharbaty, M. M., Al-Farsi, Y. M., Ouhtit, A., Waly, M. I., Al-Shafae, M., Al-Farsi, O., ... and Al-Adawi, S. (2015). Awareness about autism among schoolteachers in Oman: A cross-sectional study. *Autism*, 19(1), 6-13.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- Awuna, J., Nyamador, S.A. and Dzage, E. J. (2024). Navigating Autism in Inclusive Classrooms: Exploring Teacher Perspectives from Ghana. *Open Access Library Journal*, 11, 1-17. doi: 10.4236/oalib.1111258.
- Ayoka, G. (2018). Knowledge levels of pre-school teachers on autism spectrum disorder (ASD) in selected schools in Adentan and Madina municipalities. Master of Science in Speech and Language Therapy, University of Ghana, Legon.
- Bandura, A. (1977). Self-efficacy: Towards a unifying theory of behavioural change. *Psychological Review*. 84, 191 - 21.
- Bandura, A. (1997) *Self-Efficacy: The Exercise of Control*. W.H. Freeman and Company, New York.
- Bawa, A. and Osei, M. (2018). English Language Education and Children with Intellectual Disabilities. *International Journal of Development and Sustainability*, 7(11), 2704-2715.
- Boyle, C., Costello, S., Anderson, J., Collett, K., Page, A. and Allen, K.-A. (2022). Further development of the Teacher Attitudes to Inclusion Scale: Principal components and Rasch analysis. *Int. J. Inclusive Educ.* 1–16.
- Creger, E. (2019). Supporting early childhood students' communication skills within the classroom.
- Creswell, J. W. and Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Devi, A. and Ganguly, R. (2022). Preservice teachers and recent teacher graduates' perceptions of self-efficacy in teaching students with autism spectrum disorder—an exploratory case study. *International Journal of Inclusive Education*, 1-17.
- Dixon, F. A., Yssel, N., McConnell, J. M. and Hardin, T. (2014). Differentiated instruction, professional development, and teacher efficacy. *Journal for the Education of the Gifted*, 37(2), 111–127.
- Dovey, T. M., Francis, R., Corbett, S. and Dibb, B. (2017). Perception and use of reinforcement by special education teachers. *Journal of Research in Special Educational Needs*, 17(4), 282-293.
- Engelbrecht, P., Nel, M., Smit, S. and Van Deventer, M. (2016). The idealism of education policies and the realities in schools: The implementation of inclusive education in South Africa. *International journal of inclusive education*, 20(5), 520-535
- Forero, R., Nahidi, S., De Costa, J., Mohsin, M., Fitzgerald, G., Gibson, N., McCarthy, S. and Aboagye-Sarfo, P. (2018). Application of four-dimension criteria to assess the rigour of qualitative research in emergency medicine.

BMC Health Services Research, pp. 18, 120. <https://doi.org/10.1186/s12913-018-2915-2>.

Fraenkel, J. R. and Wallen, N. E. (2007). How to design and evaluate research in education (7th ed.). McGraw-Hill.

Frank, B. and Joshi, D. K. (2017). Including students with disabilities in education for all: Lessons from Ethiopia. *International Journal of Inclusive Education*, 21(4), 347–360.

Garrad, T. A., Rayner, C. and Pedersen, S. (2019). Attitudes of Australian primary school teachers towards the inclusion of students with autism spectrum disorders. *Journal of Research in Special Educational Needs*, 19(1), 58–67.

Garza, K. K., Bain, S. F. and Kupczynski, L. (2014). Resiliency, Self-Efficacy, and Persistence of College Seniors in Higher Education. *Research in Higher Education Journal*, 26.

Genovesi, E., Gaches, A., McKenzie, J., Hanlon, C. and Hoekstra, R. A. (2024). Inclusive strategies for children with developmental disabilities in mainstream classrooms in African countries: A systematic review of stakeholder experiences, attitudes, and perspectives. *Review of Educational Research*, 94(3), 470–504.

Georgiades, S., Tait, P. A., McNicholas, P. D., Duku, E., Zwaigenbaum, L., Smith, I. M., ... and Szatmari, P. (2022). Trajectories of symptom severity in children with autism: variability and turning points through the transition to school. *Journal of Autism and Developmental Disorders*, 1–10.

Ghana Education Service. (2011). Education Strategic Plan (ESP 2003–2015). Accra, Ghana.

Gómez-Marí, I., Sanz-Cervera, P. and Tárraga-Mínguez, R. (2021). Teachers' knowledge regarding autism spectrum disorder (ASD): A systematic review. *Sustainability*, 13(9), 5097.

Gómez-Marí, I., Sanz-Cervera, P. and Tárraga-Mínguez, R. (2021). Teachers' knowledge regarding autism spectrum disorder (ASD): A systematic review. *Sustainability*, 13(9), 5097.

Gourley, L., Wind, C., Henninger, E. M. and Chinitz, S. (2012). Sensory processing difficulties, behavioral problems, and parental stress in a clinical population of young children.

Journal of Child Family Studies. DOI 10.1007/s10826-012-9650-9.

Hair, J. F., Jr., Black, W. C., Babin, B. J. and Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Upper Saddle River, NJ: Prentice-Hall.

Hill-Jackson, V. and Lewis, C. W. (Eds.). (2023). *Transforming teacher education: What went wrong with teacher training, and how we can fix it*. Taylor & Francis.

Johnson, A., Soares, L. and Gutierrez de Blume, A. P. (2021). Professional development for working with students with autism spectrum disorders and teacher self-efficacy. *Georgia Educational Researcher*, 18(1), 1–25.

Kanjatanga, M., Fofie, D., Owusu, M. K., Marfo, R. and De-Heer, W. (2020). Assessment of strategies teachers use to enhance social interaction skills of autistic pupils in special schools for the intellectually disabled. *European Journal of Special Education Research*, 6(2).

Keen, D., Webster, A. and Ridley, G. (2016). How well are children with autism spectrum disorder doing academically at school? An Overview of Literature. *Autism*, 20(3), 276–294. <https://doi.org/10.1177/1362361315580962>.

Kissi-Abrokwa, B. and Kodua-Ntim, K. (2022). The concept of autism spectrum disorder: a study on knowledge sharing protocol among parents with autistic children in Ghana. *Advances in Autism*, 16 February 2022; 8 (2): 147–162. <https://doi.org/10.1108/AIA-12-2020-0074>.

Kuyini, A. A. R. and Abosi, O. (2014). Teacher effectiveness in adapting instruction to the needs of pupils with learning difficulties in regular primary schools in Ghana. *Sage Open*, 1–16.

Kuyini, A. B. and Desai, I. (2008). Providing instruction to students with special needs in inclusive classrooms in Ghana: Issues and challenges. *International Journal of Whole Schooling*, 4(1), 22–39.

Kuyini, A. B. and Desai, I. (2007). Principals' and teachers' attitudes and knowledge of inclusive education as predictors of effective teaching practices in Ghana. *Journal of Research in Special Educational Needs*, 7(2), 104–113.

- Lilley, R. (2015). Trading places: Autism inclusion disorder and school change. *International Journal of Inclusive Education*, 19(4), 379-396
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*, (1st ed.). Newbury Park: Sage.
- Maich, K., Hall, C. L., van Rhijn, T. and Squires, K. (2018). Investigating stay, play, & talk: A peer-mediated social skills intervention for young children with autism spectrum disorder and other social challenges.
- Matalaka, M., Ayasrah, F. T. M., Jarrah, H. Y., Jawarneh, M., Alkhawaldeh, B. Y., Darawsheh, S. R. and Fadlallah, H. R. (2024). The importance of effective learning technology utilization, teacher leadership, student engagement, and curriculum in the online learning environment. *International Journal of Data and Network Science*, 8, 1727–1740.
- Ministry of Education. (2019). *Education Strategic Plan 2018–2030: Transforming Ghana into a learning nation*. Retrieved from Ghana Ministry of Education website.
- Ministry of Education. (2003, May). *Government of Ghana Education Strategic Plan 2003*.
- Ministry of Education. (2015). *Inclusive education policy*. Government of Ghana Retrieved from: <https://sap.ghana.com/data/documents/Inclusive-Education-Policy-official-document.pdf>.
- Ministry of Education. (2018). *Education sector performance report*. Retrieved from: <https://www.globalpartnership.org/sites/default/files/document/file/2020-16-Ghana%20-%20ESP-IR.pdf>.
- Ndunguru, N. E., & Kisanga, S. E. (2023). Challenges encountered by teachers in supporting children with autism in primary schools in Tanzania. *Papers in Education and Development*, 41(1—Special Issue on Inclusive & Special Education), 55–68.
- Nunnally J. C. (1978). *Psychometric theory* (2nd ed.). New York, NY: McGraw-Hill.
- Odunsi, R., Preece, D. and Garner, P. (2017). Nigerian teachers' understanding of autism spectrum disorder: a comparative study of teachers from urban and rural areas of Lagos state. *Disability, CBR and Inclusive Development*, 29, 3, doi 10.5463/DCID.v29i3.63.
- Omolayo, B., Auta, M., Akinyemi, E. and Dennis, U. (2020). Knowledge and awareness of autism spectrum disorder among Ekiti State, Nigeria, teachers. *African Journal of Teacher Education*, 9(2), 43–61.
- Onwuegbuzie, A. and Collins, K. (2017). *The Role of Sampling in Mixed Methods-Research*. *Kölner Zeitschrift für Soziologie und Sozialpsychologie (KZfSS)*, 69.
- Oti-Boadi, M., Osei-Tutu, A. and Kwakye-Nuako, C. (2025). Caring for Children with Autism Spectrum Disorder: A Qualitative Exploration of Self-Care Experiences of Mothers in Ghana. *Global Social Welfare*. 1-14. 10.1007/s40609-025-00396-4.
- Panerai, S., Zingale, M., Trubia, G., Finocchiaro, M., Zuccarello, R., Ferri, R. and Elia, M. (2009). Special education versus inclusive education: The role of the TEACCH program. *Journal of Autism and Developmental Disorders*, 39, 874-882.
- Paraskevi, G. (2021). The inclusion of children with autism in the mainstream school classroom. Knowledge and perceptions of teachers and special education teachers. *Open Access Library Journal*, 8(9), 1-33.
- Paul, N. and Gabriel-Brisibe, C. (2015). Awareness of autism amongst primary school teachers in Yenagoa city, Bayelsa State. *Nigerian Journal of Paediatrics*, 4(1), 51-55.
- Rakap, S., Balikci, S., Parlak-Rakap, A. and Kalkan, S. (2016). An analysis of Turkish preservice teachers' knowledge of autism spectrum disorder: Implications for teacher preparation programs. *Sage Open*, 6(3), 2158244016668853.reinforcement," *Psychological Monographs*, vol. 80, no. 1, pp. 1–28, 1966.
- Robinson, D. (2017). Effective inclusive teacher education for special educational needs and disabilities: Some more thoughts on the way forward. *Teaching and Teacher Education*, 61, 164-178.
- Rose, D. H. and Meyer, A. (2002). *Teaching every student in the digital age: Universal design for learning*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of

- reinforcement. *Psychological Monographs*, 80(1), 1–28. <https://doi.org/10.1037/h0092976>
- Sdorow, L. M. (1993). *Psychology*. Brown & Benchmark Publishers.
- Senler, B. (2016). Pre-service science teachers' self-efficacy: The role of attitude, anxiety and locus of control. *Australian Journal of Education*, 60(1), 26–41.
- Senoo, E.J., Oti-Boadi, M., Senoo-Dogbey, E.V. et al. (2024). Barriers to inclusive education of children with autism: Ghanaian teachers' perspective. *Discov Educ* **3**, 146. <https://doi.org/10.1007/s44217-024-00242-3>.
- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22, 63–75 63.
- Sterling-Turner, H.E. and Jordan, S.S. (2007). Interventions addressing transition difficulties for individuals with autism. *Psychology in the Schools*, 44(7), 681–690.
- Taliaferro, A. R., Hammond, L. and Wyant, K. (2015). Preservice physical educators' self-efficacy beliefs toward inclusion: The impact of coursework and practicum. *Adapted Physical Activity Quarterly*, 32(1), 49–67.
- Talib, T. L. and Paulson, S. E. (2015). Differences in competence and beliefs about autism among teacher education students. *The Teacher Educator*, 50(4), 240–256.
- Tanner, P. (2023, January). Nested Sampling in Sequential Mixed Methods Research Designs: Comparing Recipe and Result. In *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research* 24(1).
- Tareh, S., Ahmad, N. A., Roslan, S., Ma'rof, A. M. and Zaid, S. (2020). Pre-school teachers' knowledge, belief, identification skills, and self-efficacy in identifying autism spectrum disorder (ASD): A conceptual framework to identify children with ASD. *Brain sciences*, 10(3), 165.
- Twi-Yeboah, A., Cadri, A., Nagumsi, B. A. A., Danso, N. A. A. and Mohammed-Sani, N. (2021). Knowledge and Perception of Child Autism Among Preschool Teachers in the Ledzokuku-Krowor Municipal Assembly, Ghana. *Health*, 7(2), 65–75.
- Warner, L. M. and Schwarzer, R. (2017). Self-efficacy. *The Wiley encyclopedia of health psychology*, 2.
- Wei, L. S. and Yasin, M. H. M. (2017). Teacher training is needed to increase Teachers' competency in teaching autistic children. *Journal of ICSAR*, 1(1), 1–5.
- Yasar P. and Cronin K. A. (2014). Perspectives of college of education students in Turkey on autism spectrum disorders. *International Journal of Special Education*, pp. 29, 61–75