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## Classroom Management Strategies for Managing Autistic Pupils in Inclusive Primary Schools in Akwa Ibom State

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### Abstract

This study examined strategies for managing pupils with autism in inclusive primary school settings, focusing on the impact of Discrete Trial Teaching (DTT) and observational methods in enhancing teachers' knowledge of autism management. Three research questions and corresponding hypotheses guided the study, tested at the 0.05 significance level. The target population comprised 639 teachers across twelve public primary schools in Uyo Local Government Area of Akwa Ibom State. A purposive sample of 84 teachers (28 males and 56 females) was selected from two schools with the highest concentration of autistic pupils. A quasi-experimental design using a pre-test and post-test control group structure was adopted over thirteen sessions. Data were collected using the Autism Management Knowledge among Teachers' Scale (AMKTS), which included demographic data and 20 items assessing autism-related knowledge. The instrument was validated by experts and had a reliability coefficient of 0.811 using Cronbach's Alpha. Data was analyzed using t-tests and ANOVA. Results showed a significant increase in teachers' knowledge after the intervention, with gender and teaching experience showing no significant influence. The study recommends sustained professional training and the inclusion of structured Guidance and Counselling services to support autism management in schools.

**Keywords:** Autism, Classroom Strategies, Discrete Trial Teaching, Inclusive Education, Teacher Knowledge.

### Introduction

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition typically diagnosed before age three, characterized by difficulties in communication, social interaction, and repetitive behaviours. Though children with autism often appear physically typical, they struggle with behavioural issues that hinder participation in typical classroom routines. These challenges are especially evident in primary schools, where many teachers are not adequately trained to handle such learners (CDC, 2023). In Akwa Ibom State, despite the presence of inclusive education policies, practical implementation remains weak due to limited diagnostic capacity and insufficient teacher preparation. This hinders meaningful participation of autistic pupils in mainstream settings. Globally, the CDC (2023) reports that ASD affects 1 in 36 children. In Nigeria, underreporting and cultural stigma obscure the actual prevalence. However, studies estimate autism rates in urban areas ranging from 0.8% to 2.3% (Ajuwon, 2016; Essien et al. 2017), indicating growing awareness and recognition. Essien et al. (2017) specifically reported a 1.1% autism prevalence in Uyo's public primary schools, highlighting the need for practical classroom strategies. Yet, autistic children continue to face social isolation, academic exclusion, and emotional challenges due to a lack of awareness and intervention (Bamigboye, 2020; Omodara et al., 2021). These challenges often result in absenteeism, aggression, low self-esteem, and further developmental delays. Additionally, many untrained teachers experience stress and burnout when forced to manage such cases without appropriate tools or strategies. To address this gap, studies have advocated evidence-based interventions such as Discrete Trial Training (DTT) and observational learning. DTT, developed by Ivar Lovaas in the 1970s and grounded in Applied Behaviour Analysis (ABA), uses structured instruction, prompting, and reinforcement to teach targeted skills. Bamigboye (2020) emphasized DTT's effectiveness in both home and school settings. Similarly, Dagmawi et al. (2023) showed that trained teachers using DTT significantly improved autistic pupils' communication skills. Peterson et al. (2024) further

demonstrated that combining DTT with other ABA techniques produced significant behaviour improvements across age groups.

This study is also grounded in Albert Bandura's Social Learning Theory (1977), which explains that individuals learn through observation, imitation, and modelling. Teachers can develop autism management strategies by watching peer demonstrations or expert modelling. The integration of observational learning and DTT enhances classroom application by equipping teachers with practical, behaviour-focused strategies rooted in real experiences. Teacher-related variables such as gender and experience have also been examined in autism intervention research. Aihie and Uwaoluetan (2022) found that in Edo State, teaching experience alone did not correlate with inclusive attitudes unless paired with specific training. On the other hand, Chezan et al. (2022) observed that more experienced teachers were more confident and frequent users of behavioural techniques central to DTT. Gilmore (2021) highlighted the role of teacher self-efficacy in readiness for inclusive education, though Yada and Savolainen (2021) warned that experience alone is insufficient without autism-specific development programs.

### Statement of the Problem

Despite the increasing number of pupils with autism in mainstream schools, many remain unidentified and unsupported. Teachers and school leaders often lack the necessary training, awareness, and empathy to respond appropriately to these learners' needs. As a result, children with learning and developmental difficulties are frequently misjudged as "lazy," "unintelligent," or "problematic," leading to exclusion, stigma, and academic neglect. Autistic learners, in particular, struggle with communication, social interaction, and adapting to classroom expectations. Without structured support, they are at risk of disengagement, poor academic performance, and behavioural issues. Public schools often lack the trained personnel and interventions needed to foster inclusion, raising critical concerns about fairness and the school system's capacity to meet diverse learning needs. Given the pivotal role teachers play in classroom delivery, there is an urgent need to equip them with the necessary knowledge and skills to identify and support pupils with autism effectively. Therefore, this study aims to train and empower teachers with practical intervention strategies including DTT and observational techniques to promote equitable access to quality education for all children, including those with special needs.

### Research Objectives

1. To evaluate the impact of the intervention on teachers' understanding of autism management by comparing post-intervention outcomes between the treatment and control groups.
2. To investigate whether teachers' gender plays a role in their level of knowledge about autism management following the intervention.
3. To explore how varying lengths of teaching experience influence teachers' post-intervention knowledge of autism management.

### Research Questions

1. Is there a significant difference in the post-intervention autism management knowledge between the treatment group and the control group of primary school teachers in Akwa Ibom State?
2. Is there any significant gender-related differences in the post-test knowledge of autism management among primary school teachers in Akwa Ibom State?
3. Is there any significant teaching experience difference in the post-intervention understanding of managing autism among primary school teachers in Akwa Ibom State?

### Research Hypotheses

To guide the study three null hypotheses were formulated.

1. There is no significant difference between the experimental and control groups in post treatment knowledge of managing autism among primary school teachers in Akwa Ibom State.
2. There is no significant difference in posttest treatment knowledge of managing autism among male and female primary school teachers in Akwa Ibom State.
3. There is no significant difference in the different years of teaching experience in post treatment knowledge of managing autism among primary school teachers in Akwa Ibom State.

### Methodology

This study adopted a quasi-experimental design with pre-test and post-test control group measures. The target population of comprised 639 teachers from twelve public primary schools in Uyo, Akwa Ibom State, who had prior experience with autistic pupils. A purposive sample of 84 teachers (28 males and 56 females) was drawn from two schools known to have the highest concentration of autistic pupils. Participants were divided into experimental and control groups, each containing 42 teachers. Within the experimental group, teachers were further classified based on teaching experience: 1–5 years, 6–10 years, and 11–16 years or more. The same classification was used for the control group, and the intervention spanned 13 sessions over six weeks. Data was collected using a structured test titled "the Autism Management Knowledge

*among Teachers' Scale*'' (AMKTS), consisting of two sections. Section A gathered demographic data (gender and experience), while Section B contained 20 items, 10 assessing knowledge of autism characteristics and 10 on intervention strategies. The instrument, which was validated by experts, had a Cronbach's Alpha reliability coefficient of 0.811. Both groups completed the AMKTS as a pre-test and post-test. Data analysis involved means and standard deviations for research questions, while t-tests and one-way ANOVA were used to test hypotheses at the 0.05 significance level.

## Treatment

Treatment Plan Summary for Teachers' Training on Autism Management knowledge

Session	Topic	Content Summary
Session 1	Pre-Treatment Orientation	and Introduction of the program, agreement on meeting schedules, explanation of training importance, pre-test (AMKTS) administered, questions addressed, and attendance taken.
Session 2	Understanding Autism: Definition, Types, and Characteristics	Definition and types of autism discussed. DSM-IV-TR classifications explained (Autism, Asperger's, Rett Syndrome). Symptoms like communication and behavior challenges were reviewed. Reading materials provided.
Session 3	Effects of Autism on Children	Explored how autism impacts communication, social interaction, behavior, and sensory responses. Reviewed previous assignments and recorded attendance.
Session 4	Building Relationships with Stakeholders	Focused on collaboration with parents, therapists, counselors using tools like emails, phone calls, visits. Emphasized awareness, trust, and cooperative care.
Session 5	Classroom Preparation	Covered sensory-friendly classroom setup: minimizing bright lights, noise, smells, and tactile discomfort. Discussed physical layout and support tools.
Sessions 6–7	Observational Learning as an Intervention Strategy	Introduced observational learning processes. Emphasized attention, modeling, and reinforcement. Used role-plays and practice of attention-capturing strategies.
Session 8	Use of Reinforcement	Taught positive and negative reinforcement strategies. Teachers practiced using praise, tokens, and task removal to shape behavior.
Session 9	Managing Behavioral Challenges	Addressed behavioral issues like tantrums, withdrawal, and aggression. Discussed causes (e.g., sensory overload). Role-play used for modeling responses.
Session 10	Introduction to Discrete Trial Teaching (DTT)	Introduced five DTT components: SD, SP, R, SR, and ITI. Illustrated using classroom examples and discussed each phase in depth.
Sessions 11–12	Applying DTT in Practice	Practical application of DTT. Teachers taught computer parts using trial sequences. Modeled and evaluated responses. Feedback provided by researchers.
Session 13	Summary and Post-Treatment Assessment	Reviewed key training topics. Post-test AMKTS administered. Participants appreciated and debriefed.

## Results

**Research question 1:** Is there a significant difference in the post-intervention autism management knowledge between the treatment group and the control group of primary school teachers in Akwa Ibom State?

**Table 1: Mean  $\bar{X}$  and Standard deviation (SD) of the difference in the post-intervention autism management knowledge between the treatment group and the control group of primary school teachers in Akwa Ibom State**

Group	N	Mean	Mean Difference	Std. Deviation
Experimental	42	61.88	9.0	4.650
Control	42	52.88		17.561
Total	84			

Table 1 shows a Mean  $\bar{X}$  and Standard deviation (SD) of the difference in the post-intervention autism management knowledge between the treatment group and the control group of primary school teachers in Akwa Ibom State. It shows

that the experimental group reported higher on the post-intervention autism management knowledge ( $M = 61.88$ ,  $SD = 4.650$ ) compared to control group ( $M = 52.88$ ,  $SD = 17.561$ ), suggesting greater post-intervention autism management knowledge of primary school teachers in Akwa Ibom State by experimental group.

**Research question 2:** Is there any significant gender-related differences in the post-test knowledge of autism management among primary school teachers in Akwa Ibom State?

**Table 2: Mean  $\bar{X}$  and Standard deviation (SD) of the gender-related differences in the post-test knowledge of autism management among primary school teachers in Akwa Ibom State.**

Gender	N	Mean	Mean Difference	Std. Deviation
Male Teachers	28	61.11	1.82	4.810
Female Teachers	56	59.29		11.455
Total	84			

Table 2 shows a Mean  $\bar{X}$  and Standard deviation (SD) of the gender-related differences in the post-test knowledge of autism management among primary school teachers in Akwa Ibom State. It shows that the male reported higher on the post-test knowledge of autism management among primary school teachers in Akwa Ibom State ( $M = 61.11$ ,  $SD = 4.810$ ) compared to control group ( $M = 59.29$ ,  $SD = 11.455$ ), suggesting greater post-test knowledge of autism management among primary school teachers in Akwa Ibom State by male teachers.

**Research question 3:** Is there any significant teaching experience difference in the post-intervention understanding of managing autism among primary school teachers in Akwa Ibom State?

**Table 3: Mean  $\bar{X}$  and Standard deviation (SD) of the difference in teaching experience in the post-intervention understanding of managing autism among primary school teachers in Akwa Ibom State**

Experience	N	Mean	Mean Difference	Std. Deviation
1-5 years	14	65.21	2.35	8.631
6-10 years	14	62.86		2.627
11 years and above	14	63.43		4.033
Total	42			

Table 3 shows a Mean  $\bar{X}$  and Standard deviation (SD) of the difference in teaching experience in the post-intervention understanding of managing autism among primary school teachers in Akwa Ibom State. It shows that 1-5 years' teachers reported higher on the teaching experience in the post-intervention understanding of managing autism ( $M = 65.21$ ,  $SD = 8.631$ ) compared to 6-10 years' teachers ( $M = 62.86$ ,  $SD = 2.627$ ), and 11 years and above teachers ( $M = 63.43$ ,  $SD = 4.033$ ), suggesting greater teaching experience in the post-intervention understanding of managing autism by 1-5 years' teachers.

**Hypothesis One ( $H_{01}$ ):** There is no significant difference between the experimental and control groups in post treatment knowledge of managing autism.

**Table 4: T-test of independent sample on the difference between the experimental and control groups in post treatment knowledge of managing autism.**

Variable	Group	N	Mean	Std. Deviation	df	t	Sig. (2-tailed)	Decision
Autism	Experimental	42	61.88	4.650	82	3.211	.002	Rejected
	Control	42	52.88	17.561				

$\alpha = 0.05$

Table 4 indicates that there was a statistically significant difference on the post treatment knowledge of managing autism

between experimental group ( $M = 61.88$ ,  $SD = 4.650$ ) and control group ( $M = 52.88$ ,  $SD = 17.561$ ),  $t(82) = 3.211$ ,  $p = .002$ . Therefore, the null hypothesis was rejected. This implies that there is a significant difference between the experimental and control groups in post treatment knowledge of managing autism. It is concluded that the treatment is effective in increasing teachers' knowledge of managing autism.

**Hypothesis Two (Ho<sub>2</sub>):** There is no significant difference between male and female teachers on their post treatment knowledge of managing autism.

**Table 5: T-test of independent sample on the difference between male and female teachers on their post treatment knowledge of managing autism.**

Variable	Gender	N	Mean	Std. Deviation	df	t	Sig. (2-tailed)	Decision
Autism	Male	28	61.11	4.810	82	1.023	.309	Retained
	Female	56	59.29	11.455				

$\alpha = 0.05$

Table 5 shows that there was no statistically significant difference on their post treatment knowledge of managing autism between male teachers ( $M = 61.11$ ,  $SD = 4.810$ ) and female teachers ( $M = 59.29$ ,  $SD = 11.455$ ),  $t(82) = 1.023$ ,  $p = .309$ . Therefore, the null hypothesis was retained. This implies that there is no significant difference between male and female teachers on their post treatment knowledge of managing autism.

### Hypothesis Three (Ho<sub>3</sub>)

There is no significant difference between the different years of teaching experience of teachers in post treatment knowledge of managing autism.

**Table 6: One-way Analysis of Variance (ANOVA) on the different years of teaching experience of teachers in post treatment knowledge of managing autism.**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	42.333	2	21.167	.650	.527
Within Groups	1269.500	39	32.551		
Total	1311.833	41			

$\alpha = 0.05$

Table 6 shows an F value of .650 and a p-value of .527. Testing at an alpha level of .05, the p-value is greater than the alpha level. So, the null hypothesis which states that There is no significant difference between the different years of teaching experience of teachers in post treatment knowledge of managing autism is retained. This implies that there is no significant difference between the different years of teaching experience of teachers in post treatment knowledge of managing autism.

## Discussion

The findings from the first hypothesis found a significant improvement in autism management knowledge among teachers in the experimental group compared to the control group, validating the effectiveness of the intervention. This supports prior research by Bamigboye (2020) and Dagmawi et al. (2023), who emphasized the value of structured interventions like Discrete Trial Training (DTT). Regarding the second hypothesis on gender differences, the study found no significant difference between male and female teachers in post-intervention knowledge gains, suggesting that DTT-based training is equally effective across genders. Although earlier studies noted female teachers' higher empathy (Obe, 2018; Emmanuel, 2022), this study underscores that structured training like DTT yields more impactful results.

Finally, the third hypothesis on teaching experience did not significantly influence knowledge outcomes, indicating that DTT is beneficial regardless of years in the profession. This aligns with Yada & Savolainen (2021) and Aihie and Uwaoluetan (2022), who emphasized the importance of targeted professional training over experience alone. However, the finding contrasts with Chezan et al. (2022), who linked experience to confidence in using behavioural strategies. Overall, the study affirms that effective training equips teachers regardless of gender or experience with the skills to manage autistic pupils successfully.

## Conclusion

This study aimed to identify effective strategies teachers can use to support autistic pupils in school. Evidence supports

that targeted interventions help address the behavioral and learning challenges of autism. The study showed that such techniques improved teachers' understanding and capacity to manage autistic behaviors. Teachers now recognize that these pupils may not respond to typical discipline and require structured behavior plans tailored to their specific traits and needs. Previously, many teachers had limited autism knowledge, but after intervention, they became more capable of supporting communication, social interaction, and learning outcomes. Given the shortage of special educators, continuous training for mainstream teachers is essential as the study is significant to primary school teachers, school counsellors, educational administrators/policymakers, parents/caregivers of autistic pupils and researchers.

### Recommendations

Based on the findings of the study, it is recommended among others that.

1. Teachers should undergo well-organized training programs such as Discrete Trial Teaching (DTT) to enhance their ability to manage autistic pupils.
2. Teachers should be equally included in autism management training to ensure fairness and equal opportunity in professional development.
3. Periodic in-service training and workshops should be held to reinforce all teachers' understanding of autism interventions regardless of their years in service.

### Counselling Implications

1. A functional counselling center with qualified counsellors should be established in all primary schools in the State.
2. Counsellors in schools should work closely with teachers to facilitate the successful use of autism strategies such as Discrete Trial Training (DTT).
3. Counsellors should assist in the early recognition of autistic learners and guide appropriate referrals for further evaluation and support.
4. Trained counsellors are expected to offer emotional and behavioral guidance that promotes both learning and social integration for autistic pupils.
5. Capacity-building sessions, including workshops and seminars, should be regularly held to equip teachers and caregivers.

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