

Examining the Outcomes of Behavioral Classroom Management on Mathematics Academic Engagement Among Upper Primary Pupils with Attention-Deficit/Hyperactivity Disorder in Obio-Akpor Local Government Area, Rivers State

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Abstract

This study evaluated the effect of Behavioural Classroom Management (BCM) on the Mathematics academic engagement and performance of upper primary pupils with Attention-Deficit/Hyperactivity Disorder (ADHD) in Obio-Akpor Local Government Area, Rivers State, Nigeria. Three research questions and three null hypotheses guided the study, tested at a 0.05 level of significance. The study adopted a quasi-experimental pretest-posttest non-equivalent control group design. The target population comprised approximately 27,500 upper primary school pupils across 55 public primary schools in Obio-Akpor LGA. A multi-stage sampling procedure was used to select 12 schools, yielding a sample size of 216 upper primary pupils identified with ADHD behaviors across three intact group conditions: Experimental Group 1 (Class Rules, $n = 60$), Experimental Group 2 (Structured Routines, $n = 49$), and Control Group (Conventional Instruction, $n = 107$). Data were collected using a researcher-developed instrument titled "Behavioural Classroom Management on Mathematics Academic Engagement" (BCMMAE), which was validated by three experts in Educational Measurement and Evaluation and Primary Education/Curriculum Studies. The instrument yielded an internal consistency coefficient of 0.82 via Kuder-Richardson Formula 20 (KR-20). Mean ($\bar{X}$) and Standard Deviation (SD) were used to answer the research questions, while Paired-Samples t -Test and Analysis of Covariance (ANCOVA) were used to test the null hypotheses. Results revealed that both explicit class rules (Mean Gain = 22.17, $t = 28.79$, $p < 0.05$) and structured daily routines (Mean Gain = 25.70, $t = 40.13$, $p < 0.05$) produced statistically significant gains in posttest Mathematics performance among pupils with ADHD. ANCOVA results confirmed a significant main effect of intervention type across groups ($F_{2,212} = 377.54$, $p < 0.05$), with structured daily routines demonstrating the highest efficacy, while conventional instruction yielded minimal improvement (Mean Gain = 4.25). It was concluded that proactive BCM strategies serve as effective external cognitive scaffolds for neurodivergent learners. It is recommended, among others, that primary school Mathematics teachers systematically integrate structured daily routines and co-created, positively stated class rules into daily classroom instruction, while the Rivers State Universal Basic

Education Board (SUBEB) should provide targeted professional development on proactive behavioral interventions.

Keywords: *Behavioural Classroom Management, Mathematics Performance, ADHD, Class Rules, Structured Routines, Primary Education, Obio-Akpor LGA.*

Introduction

Academic engagement is a fundamental prerequisite for effective learning, skill acquisition, and scholastic achievement. It encompasses behavioral dimensions (such as active participation, task persistence, and adherence to instructions), cognitive dimensions (such as self-regulation and problem-solving effort), and affective dimensions (such as positive attitudes toward learning tasks). However, maintaining high levels of academic engagement presents a formidable challenge for pupils with Attention-Deficit/Hyperactivity Disorder (ADHD).

Attention deficit hyperactivity disorder (ADHD) is the most commonly diagnosed psychological disorder of childhood. Prevalence of ADHD currently is estimated at 5% among school-age children making it a serious concern for educators. One aspect of ADHD, however, that has received comparatively little attention is the academic difficulties that are commonly associated with ADHD. Attention Deficit Hyperactivity Disorder (ADHD) is characterised by attention problems, impulsiveness and hyperactivity that may hamper the performance of students in school. ADHD is a neurodevelopmental disorder characterized by persistent patterns of inattention, hyperactivity, and impulsivity that interfere with daily functioning and academic performance. Lack of concentration, organization of tasks and completion of academic tasks are common problems among students with ADHD and may adversely affect their performance in the subjects (Ayansiji, 2026). Neurodevelopmental disorder is called Attention Deficit Hyperactivity Disorder (ADHD) and characterized by repetitive cycles of impulsiveness, hyperactivity and inattention that hinder the functioning in any of the spheres of life including school (Adamou, Kehagias & Antoniou, 2025). In the primary school classroom, upper primary pupils (typically ages 8–12) are expected to transition from foundational play-based activities to independent, sustained cognitive work. Pupils with ADHD frequently struggle with this transition due to underlying executive function deficits, including weaknesses in working memory, response inhibition, time management, and cognitive flexibility. Kılıç and Ahmetoğlu (2025) assert that in a typical classroom setting, these pupils may exhibit constant fidgeting, task avoidance, difficulty following multi-step directions, and frequent off-task behaviors, which not only impede their own learning but also disrupt the broader instructional environment. In Nigeria, public primary schools in urban and peri-urban hubs such as Obio-Akpor Local Government Area (LGA) in Rivers State face unique structural realities. Classrooms are often characterised by high pupil-to-teacher ratios, noise overhead, and minimal access to specialised educational technology or dedicated learning support assistants. Historically, misbehavior or off-task behavior stemming from neurodevelopmental conditions like ADHD has been misinterpreted as willful disobedience or laziness, often met with reactive disciplinary measures, including verbal reprimands or corporal punishment. Such punitive approaches rarely address the core cognitive deficits associated with ADHD and frequently heighten anxiety, lower self-esteem, and escalate task avoidance among affected pupils.

To address these challenges effectively within resource-constrained environments, educational researchers and special educators advocate for evidence-based **Behavioural Classroom Management (BCM)** interventions. **BCM** can be defined as the process which support learners

to make positive choice that are helpful for learning. Behaviour management not only makes students well-disciplined but also nurturing their social and emotional development. It makes them able to express themselves (Baidya & Das, 2024). Behaviour management remains a critical teaching strategy employed by teachers in the classroom to maintain orderliness. Although common misbehaviours, such as talking out of turn, low levels of attention, idleness, and hindering others, may seem minor, their repetitive nature can interrupt the smooth flow of learning activities (Kwok, 2020). Additionally, behaviour problems in the classroom elevate stress levels for both teachers and pupils, disrupt lesson BCM is a proactive, antecedents-focused approach that structures the learning environment to promote desirable academic and social behaviors while preventing disruptions before they occur Aloka, & Seyi, 2024). Behaviour Classroom Management is one of the most complex processes. There is no single strategy that fit for the management of students' behaviour appropriately. Effective BCM requires establishing a small set (typically 3–5) of positively stated, clear, and observable expectations (e.g., "Raise your hand before speaking" rather than "Do not shout out"). In BCM, rules are explicitly taught, visually displayed at eye level, and consistently reinforced through praise or secondary reinforcers. Verbal disruptions, noncompliance, and being off-task (i.e., disengaged) are the most frequently identified challenging behaviours, and assistance with classroom management is the most frequent request made by teachers (Peter & Todd, 2017). Ineffective classroom management has deleterious effects on the overall classroom environment, affecting students' social and academic outcomes. Two foundational pillars of BCM are the formulation of **explicit class rules** and the establishment of **structured daily routines**. Classroom rules are specific guidelines and behavioral expectations set by teachers to create a safe, organised, and productive learning environment. They are set of rules and behaviour guidelines that are imposed by the teacher that the class must follow. These rules are designed to assist the teacher in behaviour management and ensure there is a positive environment for learning where all pupils feel comfortable and safe. They are often drafted with input from the students so that everyone has a say on how they want everyone to behave in lessons. These rules vary depending on the school, teacher and class.

Principles of Class Rules

- 1.Be clear about what your rules are. This will make it much easier in the long run to teach classroom rules effectively as children will have a clear understanding of your expectations.
- 2.Apply rules, expectations, and consequences fairly and predictably every single day to build trust and eliminate perceived favoritism.
- 3.Make the rules along with the learners. It will give the learners sense of belonging. respect.
- 4.Continually reinforce your classroom rules while teaching day-to-day.
- 5.The rules should be recited before commencing any lesson. That will help the learners to be used to the rules. in real-life scenarios.
- 6.If your classroom rules are being broken, be sure to call attention to this as soon as it happens. That way, the child/children will learn where they've gone while it's fresh in their memory.
- 7.Eliminate perceived favoritism while applying the rules.

Components of Class Rules

- 1.Make sure that the expectations are established and defined.
- 2.Teach and prompt expected behaviours.
- 3.Positive behaviours should not go without reinforcement.

4. Make sure wrong or unexpected behaviours are called and punished.

Class Routines is a digital document that outlines the scheduled times, daily activities, and behavioural procedures for a school classroom. It refers to predictable, standardised procedures for daily classroom transitions and recurring activities such as entering the classroom, submitting homework, transitioning between subjects, retrieving learning materials, and organizing desks. Mccrea (2024) posits that a routine is a sequence of actions triggered by a specific cue, occurring with minimal cognitive effort. Research shows that forming a habit takes about 66 days of consistent repetition within a stable context, although simpler actions may become automatic sooner (Lemov, 2021). In the classroom, consistent routines such as signaling for attention or using mini-whiteboards for whole-class responses allow students to internalise behaviours more quickly. This approach helps to free up space in working memory so that students can focus cognitive attention on learning rather than the procedures themselves.

Schools should invest time to strengthen routines by having all staff use the same procedures, cues and action sequences. Routines make the classroom predictable so students know what to expect in any given lesson (Australian Education Research Organisation (AERO), 2023). Automating these procedures so they become part of the environment means that more time can be spent on learning. For pupils with ADHD, whose internal executive planning is often impaired, externalised, predictable routines serve as a cognitive scaffold, reducing ambiguity and decision fatigue. Classroom routines help a teacher to run a smooth from the beginning of the day right through dismissal, with handy classroom management tips and resource recommendations included throughout. Implementing these routines is a surefire way to establish classroom control and maximize instructional time (Shanae, 2026).

Core Principles of Effective Class Routines

- Define exact steps for every routine (such as entering the room or passing out papers) so students know precisely what is expected.
- Demonstrate the routine step-by-step ("I do") before asking the class to perform it, using techniques like think-aloud or visual cues.
- Allow students to practice the sequence with support ("We do") until they can perform it correctly and cooperatively.
- Maintain the same expectations every day and reward smooth execution with positive praise to make the behavior automatic.
- Keep routines brief (taking only a few minutes) to protect instructional time and minimize wasted transitions.
- Transfer responsibility to the students ("You do") over time so they manage the routines autonomously

Core Components of a Routine

- An event, time, or preceding action that signals the start of the sequence (such as waking up or closing your laptop at the end of the work day).
- Two or more manageable actions performed in roughly the same order.
- Fixed daily events like meals or a set bedtime that stabilise your schedule even when the rest of your day changes.

Statement of the problem

Mathematics plays an important role in developing pupils' ability to think logically, solve problems, and apply knowledge to everyday situations. However, some upper primary pupils with Attention-Deficit/Hyperactivity Disorder (ADHD) find it difficult to concentrate, remain on task, follow classroom instructions, and participate consistently during mathematics lessons. These difficulties can limit their involvement in learning activities and may affect their academic progress. Teachers often face challenges in managing behaviours such as distractibility, impulsive responses, excessive talking, and failure to complete assigned tasks among pupils with ADHD. When classroom management practices do not adequately respond to these needs, the pupils may become less interested and actively involved in mathematics lessons. Behavioural classroom management, which may include structured routines, positive reinforcement, clear expectations, and immediate feedback, could provide a more supportive learning environment for these pupils. Despite the possible benefits of such strategies, there is limited empirical evidence on their effectiveness in promoting mathematics academic engagement among upper primary pupils with ADHD in Obio-Akpor Local Government Area of Rivers State. Therefore, the problem of the study is "Does Behavioural Classroom Management affect Mathematics Academic Engagement of Upper Primary Pupils with Attention-Deficit/Hyperactivity Disorder in Obio-Akpor Local Government Area, Rivers State?"

Aim and Objectives of the Study

The primary aim of this study was to examine the outcomes of Behavioural Classroom Management (specifically class rules and routines) on academic engagement among upper primary pupils with Attention-Deficit/Hyperactivity Disorder (ADHD) in public primary schools in Obio-Akpor Local Government Area, Rivers State, Nigeria.

Specifically, the study sought to:

1. Determine the outcome of class rules on Mathematics academic engagement among upper primary pupils with ADHD.
2. Evaluate the outcome of structured daily class routines on Mathematics academic engagement among upper primary pupils with ADHD.
3. Examine the effect of class rules and routines on Mathematics academic engagement among upper primary pupils with ADHD and those without both class rules and structured routines.

Research Questions

The following research questions guided the study:

1. What differences exist on Mathematics pretest and posttest scores of upper primary pupils with ADHD taught in classrooms using class rules?
2. What differences exist on Mathematics pretest and posttest scores of upper primary pupils with ADHD taught in classrooms making use of structured daily class routines?
3. What are the effects of class rules and routines on Mathematics pretest and posttest scores of upper primary pupils with ADHD and those without both class rules and structured routines?

Null Hypotheses

The following null hypotheses were formulated and tested at the 0.05 level of significance:

H_{01} : There is no significant difference between Mathematics pretest and posttest scores of upper primary pupils with ADHD and class rules.

H_{02} : The Mathematics pretest and posttest scores of upper primary pupils with ADHD taught in classrooms with structured daily routines do not differ significantly.

H_{03} : There is no significant difference between Mathematics pretest and posttest scores of upper primary pupils with ADHD exposed to class rules and routines and those without both class rules and structured daily routines.

Methodology

Research Design: The study adopted a quasi-experimental pretest-posttest non-equivalent control group design. The target population comprised upper primary school pupils (Primary 4, 5, and 6) in public primary schools across Obio-Akpor LGA, Rivers State. There are 55 public primary school in Obio-Akpor with about an estimate of about 27, 500 pupils. A multi-stage sampling procedure was used to select 12 schools. Intact upper primary classes were selected from the sampled schools. Within these classes, pupils identified misbehaving, not following the **BCM** used in the different classes during teaching then formed the samples size as shown in the table below.

Group	Intervention	Schools	Pri4	Pri5	Pri6	Total
Exp group1	Class rules	A	2	3	5	60
		B	6	4	6	
		C	5	4	7	
		D	4	8	6	
Exp group2	Structured Routines	E	3	3	6	49
		F	3	1	3	
		G	10	6	2	
		H	4	4	4	
Control group	Conventional instruction	I	13	7	8	107
		J	9	11	10	
		K	15	5	8	
		L	5	7	9	
TOTAL		12 Schools	79	63	74	216

From the table above, 216 upper public primary pupils formed the sample of the study. The instrument for data collection was the researcher-developed instrument titled “The **Behavioural Classroom Management on Mathematics Academic Engagement (BCMMAE)**”. To ensure face and content validity, the instrument draft was reviewed by three experts: two in Educational Measurement and Evaluation and one in Primary Education/Curriculum Studies from the Faculty of Education. The experts evaluated item clarity, appropriateness of language, curriculum alignment, and coverage of research objectives. Revisions were incorporated into the final version based on their feedback. The reliability of the instrument was established through a pilot test conducted on 20 upper primary pupils in a public primary school in Port Harcourt City LGA (outside the study location but sharing demographic traits). The internal consistency was computed using **Kuder-Richardson 20 (KR-20)** and a reliability coefficient of 0.82 was obtained, indicating high reliability for field administration. Data collection proceeded across three phases:

1. **Pre-test Phase:** Administered to establish baseline comparability between groups prior to intervention.

2. **Treatment Phase:** Experimental groups received experimental instructional/behavioral treatment, while control groups were taught using conventional methods over a specified period.

3. Post-test Phase: Re-administered to all sampled pupils across both groups to measure post-intervention performance gains. The research questions were answered using descriptive statistics, specifically **Mean ($\bar{X}$)** and **Standard Deviation (SD)** while the null hypotheses were tested using Paired t-Test and **Analysis of Covariance (ANCOVA)** at the 0.05 level of significance, controlling for pre-test baseline scores as covariates.

Result and Data analyses

Research Question 1: What differences exist on Mathematics pretest and posttest scores of upper primary pupils with ADHD taught in classrooms using class rules?

Table 1: Descriptive Statistics for Pretest and Posttest Scores of Pupils Taught with Class Rules

Group	N	Pretest Mean ($\bar{X}$)	Pretest SD	Posttest Mean ($\bar{X}$)	Posttest SD	Mean Gain
Experimental Group 1 (Class Rules)	60	41.34	6.81	63.51	7.23	22.17

Table 1 shows that pupils with ADHD taught using explicit class rules achieved a pretest mean score of 41.34 ($SD = 6.81$) and a posttest mean score of 63.51 ($SD = 7.23$). This yielded a mean gain of 22.17 points, indicating an improvement in Mathematics academic performance after intervention.

Research Question 2: What differences exist on Mathematics pretest and posttest scores of upper primary pupils with ADHD taught in classrooms making use of structured daily class routines?

Table 3: Descriptive Statistics for Pretest and Posttest Scores of Pupils Taught with Structured Routines

Group	N	Pretest Mean ($\bar{X}$)	Pretest SD	Posttest Mean ($\bar{X}$)	Posttest SD	Mean Gain
Experimental Group 2 (Structured Routines)	49	42.76	7.06	68.45	7.06	25.70

Table 3 indicates that pupils with ADHD taught in classrooms using structured daily routines recorded a baseline pretest mean of 42.76 ($SD = 7.06$) and a posttest mean of 68.45 ($SD = 7.06$). The mean gain score of 25.70 reflects an increase in performance following routine-based instruction.

Research Question 3: What are the effects of class rules and routines on Mathematics pretest and posttest scores of upper primary pupils with ADHD and those without both class rules and structured routines?

Table 3: Comparative Descriptive Statistics Across Intervention and Control Groups

Group	Intervention	N	Pretest Mean ($\bar{X}$)	Pretest SD	Posttest Mean ($\bar{X}$)	Posttest SD	Mean Gain
Exp Group 1	Class Rules	60	41.34	6.81	63.51	7.23	22.17
Exp Group 2	Structured Routines	49	42.76	7.06	68.45	7.06	25.70
Control Group	Conventional Instruction	107	43.04	8.02	47.29	8.09	4.25
Total		216	42.51	7.48	56.57	12.58	14.06

Table 3 shows that pupils in Experimental Group 2 (Structured Routines) achieved the highest posttest performance and mean gain ($\bar{X} = 68.45$, Gain = 25.70), followed by Experimental Group 1 (Class Rules) ($\bar{X} = 63.51$, Gain = 22.17). The Control Group recorded a minimal mean gain of 4.25 ($\bar{X} = 47.29$).

Null Hypothesis 1: There is no significant difference between Mathematics pretest and posttest scores of upper primary pupils with ADHD and class rules.

Table 4: Paired-Samples t-Test Analysis for H_{01}

Variable	N	Mean ($\bar{X}$)	SD	Mean Diff.	df	t-cal	Sig. (p-value)	Decision at $\alpha=0.05$
Pretest Score	60	41.34	6.81	22.17	59	28.79	0.000	Null Hypothesis Rejected
Posttest Score	60	63.51	7.23					

Table 4 shows a calculated t-value of 28.79 with a significance level of $p = 0.000$. Because the p-value is less than the 0.05 significance threshold ($p < 0.05$), the null hypothesis (H_{01}) is rejected. Thus, there is a statistically significant difference between the pretest and posttest Mathematics scores of upper primary pupils with ADHD taught using explicit classroom rules.

Null Hypothesis 2: The Mathematics pretest and posttest scores of upper primary pupils with ADHD taught in classrooms with structured daily routines do not differ significantly.

Table 5: Paired-Samples t-Test Analysis for H_{02}

Variable	N	Mean (X ⁻)	SD	Mean Diff.	df	t-cal	Sig. (p-value)	Decision at $\alpha=0.05$
Pretest Score	49	42.76	7.06	25.70	48	40.13	0.000	Null Hypothesis Rejected
Posttest Score	49	68.45	7.06					

Interpretation & Decision:

Table 5 displays a calculated t-value of 40.13 with $df = 48$ and a p-value of 0.000. Since $p < 0.05$, H_{02} is rejected. This confirms that Mathematics pretest and posttest scores of pupils with ADHD exposed to structured daily classroom routines differ significantly.

Null Hypothesis 3: There is no significant difference between Mathematics pretest and posttest scores of upper primary pupils with ADHD exposed to class rules and routines and those without both class rules and structured daily routines.

Table 6: Analysis of Covariance (ANCOVA) Summary Table for H_{03}

Source of Variation	Type III Sum of Squares	df	Mean Square	F-calculated	Sig. (p-value)	Decision at $\alpha=0.05$
Corrected Model	27032.75	3	9010.92	334.82	0.000	Significant
Intercept	480.12	1	480.12	17.84	0.000	Significant
Pretest (Covariate)	6716.87	1	6716.87	249.65	0.000	Significant
Group (Main Effect)	20315.87	2	10157.94	377.54	0.000	Null Hypothesis Rejected
Error	5703.91	212	26.91			
Total	722137.00	216				

Source of Variation	Type III Sum of Squares	df	Mean Square	F-calculated	Sig. (p-value)	Decision at $\alpha=0.05$
Corrected Total	32736.66	215				

Table 6 shows the main effect of behavioral intervention group ($F_{2,212} = 377.54, p = 0.000$). Because the associated p-value (0.000) is less than the 0.05 alpha level, null hypothesis 3 (H_{03}) is rejected. After adjusting for baseline pretest scores, a statistically significant difference exists in posttest Mathematics performance among upper primary pupils with ADHD exposed to class rules, structured daily routines, and conventional instructional environments. Structured daily routines yielded the highest efficacy.

Discussion of Findings

Effect of Class Rules on Mathematics Performance among Pupils with ADHD

The findings corresponding to Research Question 1 and Null Hypothesis 1 (H_{01}) demonstrated a statistically significant improvement in the Mathematics scores of pupils with ADHD taught in classrooms using explicit class rules ($\bar{X}_{pre} = 41.34, \bar{X}_{post} = 63.51, \text{Mean Gain} = 22.17, t = 28.79, p < 0.05$). The rejection of H_{01} indicates that establishing clear, positively stated behavioural expectations significantly enhances academic outcomes for pupils experiencing attention deficits and hyperactivity.

This result aligns with the assertions of Kwok (2020) and Baidya and Das (2024), who emphasised that proactive behavior management creates a predictable learning environment that curbs repetitive classroom disruptions such as talking out of turn and off-task behavior. In public primary school classrooms in Obio-Akpor LGA—where high pupil-to-teacher ratios and overhead environmental noise frequently trigger off-task behaviors—explicit class rules serve as an external regulatory mechanism. For pupils with ADHD who struggle with response inhibition, having 3–5 clearly defined rules visually displayed at eye level and consistently reinforced reduces ambiguity regarding expected classroom conduct. By minimizing behavioral friction during Mathematics instruction, pupils are able to direct more cognitive effort toward instructional tasks, leading to higher posttest gains.

Effect of Structured Daily Routines on Mathematics Performance among Pupils with ADHD

The results for Research Question 2 and Null Hypothesis 2 (H_{02}) revealed that structured daily routines yielded significant positive gains in Mathematics performance among upper primary pupils with ADHD ($\bar{X}_{pre} = 42.76, \bar{X}_{post} = 68.45, \text{Mean Gain} = 25.70, t = 40.13, p < 0.05$). Rejection of H_{02} confirms that automating daily classroom transitions and recurring activities creates a stable framework that directly supports academic learning.

This finding strongly supports the theoretical perspectives of McCrea (2024) and Lemov (2021), who argued that consistent classroom routines reduce cognitive load and decision fatigue by transforming procedural actions into automatic habits. Pupils with ADHD suffer from underlying executive function deficits, particularly in working memory and self-regulation (Kılıç & Ahmetoğlu, 2025). When routine activities—such as entering the classroom, retrieving

Mathematics materials, or transitioning between activities—are standardized and rehearsed, working memory capacity is freed up. Consequently, pupils can devote their limited attentional resources directly to mathematical problem-solving rather than navigating procedural uncertainty. This aligns with findings from the Australian Education Research Organisation (AERO, 2023) and Shanae (2026), which highlight that predictable daily routines maximize actual instructional time and boost academic engagement in inclusive classrooms.

Comparative Effects of Class Rules, Structured Routines, and Conventional Instruction

The findings for Research Question 3 and Null Hypothesis 3 (H_{03}) showed a statistically significant overall difference across the treatment and control conditions ($F_{2,212} = 377.54, p < 0.000$). While the conventional instruction control group recorded a minor mean gain of 4.25 ($\bar{X}_{pre} = 43.04, \bar{X}_{post} = 47.29$), both experimental interventions demonstrated superior performance, with structured routines (Gain = 25.70) outperforming explicit class rules (Gain = 22.17). The marked underperformance of the control group highlights the inadequacy of traditional classroom environments for neurodivergent learners. In conventional settings, off-task behaviors are frequently met with reactive disciplinary measures or verbal reprimands (Aloka & Seyi, 2024), which exacerbate task avoidance and anxiety rather than addressing executive dysfunction. The relative advantage of structured daily routines over class rules alone can be attributed to the continuous nature of routine execution. While class rules establish general boundaries, structured routines provide sequential, step-by-step behavioral scripts throughout the entire lesson period. As Ayansiji (2026) and Adamou et al. (2025) observed, pupils with ADHD struggle continuously with task initiation, organization, and completion. Structured routines provide continuous cognitive scaffolding from lesson commencement to dismissal, ensuring higher sustained academic engagement during Mathematics instruction.

Conclusion

Based on the empirical findings of this study, it is concluded that Behavioural Classroom Management (BCM) practices significantly improve the Mathematics academic performance and engagement of upper primary pupils with Attention-Deficit/Hyperactivity Disorder (ADHD) in Obio-Akpor Local Government Area, Rivers State.

Specifically, both class rules and structured daily routines serve as vital external regulatory frameworks that cushion the executive function deficits associated with ADHD. While explicit class rules effectively establish clear behavioral boundaries and reduce classroom disruptions, structured daily routines provide continuous cognitive scaffolding that minimizes transition fatigue and conserves working memory capacity for core mathematical problem-solving. Overall, proactive, antecedents-focused behavioural interventions are far superior to conventional instructional approaches in fostering academic growth and engagement among neurodivergent pupils in resource-constrained public primary school settings.

Recommendations

Based on the findings and conclusions of the study, the following recommendations are made:

1. Adoption of Structured Daily Routines by Primary Mathematics Teachers:

Mathematics teachers in public primary schools should systematically design, explicitly teach, and consistently enforce standardized daily routines for recurring classroom activities (such as lesson

transitions, retrieval of instructional materials, and task submission). This will help minimize cognitive load and maximize instructional time for pupils with ADHD.

2, Establishment of Co-created, Positively Stated Class Rules:

School heads and classroom teachers should formulate a concise set (3–5) of clear, positively framed behavioral rules displayed at eye level in every classroom. Teachers should ensure rules are recited before commencing lessons and reinforced through consistent praise rather than reactive punishment.

3, In-Service Training and Professional Development on BCM:

The Rivers State Universal Basic Education Board (SUBEB) and the Obio-Akpor Local Education Authority should organize regular capacity-building workshops and seminars for primary school teachers on proactive Behavioural Classroom Management techniques specifically tailored to managing neurodevelopmental needs like ADHD.

4. Shift from Reactive Discipline to Proactive Behavioural Supports:

School administrators and teachers should phase out punitive and reactive disciplinary measures (such as verbal reprimands and corporal punishment) for off-task behaviors, replacing them with antecedent-based behavioral interventions that foster a supportive and inclusive learning environment.

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