

# **CLASS SIZE AND PUPILS' ATTENTIVENESS AS DETERMINANTS OF PRIMARY SCHOOL PUPILS' ACADEMIC PERFORMANCE IN THE WEST COAST REGION, THE GAMBIA**

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## **Abstract**

This study examined the influence of class size and pupils' attentiveness on the academic performance of primary school pupils in the West Coast Region of The Gambia. A descriptive survey design was adopted. The sample comprised 188 teachers selected through stratified random sampling from four primary schools (two public and two private). Data were collected using a validated 24-item instrument, the Class Size and Pupils' Attentiveness Academic Performance Questionnaire (CSPAAPQ). Data were analysed using Pearson correlation and multiple regression analyses at the 0.05 level of significance. The findings revealed that class size and pupils' attentiveness jointly explained 42.0% of the variance in pupils' academic performance (Adjusted  $R^2 = 42.0$ ,  $p < 0.05$ ). However, pupils' attentiveness ( $\beta = 0.651$ ,  $p < 0.05$ ) emerged as a significant predictor of academic performance, whereas class size ( $\beta = 0.015$ ,  $p > 0.05$ ) did not make a statistically significant contribution. The study concludes that pupils' attentiveness is a more critical determinant of academic performance than class size. It is therefore recommended that educational policies and classroom practices prioritize strategies that enhance learner engagement, alongside efforts to improve classroom management and learning conditions.

**Keywords:** Class size; pupils' attentiveness; academic performance; primary education; The Gambia.

## **Introduction**

Education is widely recognised as a fundamental driver of national development, contributing to human capital formation, economic growth, and social stability. Academic performance, as a key indicator of educational effectiveness, reflects learners' ability to acquire, process, and apply knowledge. Consequently, understanding the factors that influence pupils' academic performance remains a central concern in educational research and policy. Among the structural factors influencing learning outcomes, class size has received considerable scholarly attention. Early large-scale studies, such as the Student–Teacher Achievement Ratio (STAR) project, demonstrated that pupils in smaller classes tend to achieve better academic outcomes due to increased opportunities for individualized instruction, improved classroom management, and enhanced teacher–student interaction (Finn & Achilles, 1999). Subsequent studies have reinforced these findings, indicating that smaller class sizes promote greater pupil engagement and participation (Blatchford et al., 2011; Krueger, 2003). However, other researchers argue that the effects of class size are context-dependent and may be mediated by factors such as

teaching quality, classroom practices, and resource availability (Hanushek & Rivkin, 2010; Chingos, 2018).

In addition to structural factors, behavioural variables such as pupils' attentiveness has emerged as critical determinants of academic performance (Smith, 2020). Attentiveness refers to the ability of learners to concentrate, sustain focus, and actively engage in instructional activities. Studies have shown that attentive pupils are more likely to process information effectively, participate in classroom interactions, and achieve higher academic outcomes (Johnson & Lee, 2018; Kumar & Upadhyay, 2019). Furthermore, learner attentiveness has been linked to motivation, classroom climate, and instructional strategies, suggesting that it is both an individual and context-dependent variable (Reeve, 2009; Skinner, 2010).

Empirical studies examining the relationship between class size and attentiveness suggest that smaller classes may create more conducive learning environments that foster engagement and reduce distractions (Blatchford et al., 2003). However, the extent to which class size directly influences academic performance remains debated. Some studies report significant effects, while others find minimal or indirect relationships, emphasizing the role of mediating variables such as attentiveness and teacher effectiveness (Jones & Brown, 2010; Hattie, 2005). Within the African context, large class sizes are a common challenge due to rapid population growth, increased school enrolment, and limited educational resources. Studies conducted in countries such as Kenya and Ethiopia indicate that overcrowded classrooms can limit teacher–pupil interaction and reduce pupils' attentiveness, thereby negatively affecting academic performance (Ng'eno et al., 2019; Mekasha & Tsegaye, 2018). However, evidence also suggests that effective classroom management and teaching strategies can mitigate these challenges, highlighting the importance of behavioural and pedagogical factors.

In The Gambia, the education system has made significant progress in expanding access to primary education. However, this expansion has been accompanied by challenges related to classroom overcrowding and resource constraints. Despite policy guidelines recommending optimal pupil–teacher ratios, actual class sizes in many schools exceed these standards, particularly in densely populated regions. While efforts such as the Performance Management System (PMS) have been introduced to improve instructional delivery, limited empirical research exists on how classroom conditions and pupil behaviours jointly influence academic outcomes in this context. Theoretically, this study is anchored on Social Learning Theory and Ecological Systems Theory. Social Learning Theory emphasizes the role of observation, interaction, and reinforcement in shaping behaviour, suggesting that classroom environments that promote engagement can enhance attentiveness and learning outcomes (Bandura, 1986). Ecological Systems Theory, on the other hand, highlights the influence of environmental factors such as classroom structure and teacher practices on individual development (Bronfenbrenner, 1979). Together, these frameworks provide a comprehensive lens for understanding how class size and attentiveness interact to influence academic performance.

Despite extensive research on class size and increasing attention to pupil engagement, there remains a gap in the literature regarding the combined and relative effects of class size and pupils' attentiveness on academic performance, particularly in the Gambian context. Most existing studies have examined these variables in isolation, with limited focus on their interaction within real classroom settings. This study therefore sought to address this gap by examining the relationship, joint contribution, and relative influence of class size and pupils' attentiveness on academic performance among primary school pupils in the West Coast Region of The Gambia

### Statement of the Problem

Despite policy efforts to improve primary education in The Gambia, pupils' academic performance remains persistently low, as evidenced by poor National Assessment Test (NAT 5) results in English and Mathematics between 2018 and 2022. Overcrowded classrooms and limited resources characterize many schools in the West Coast Region, potentially undermining pupils' attentiveness and learning outcomes. While class size and attentiveness are widely recognized as critical determinants of academic performance, no known study in The Gambia has empirically examined their combined and relative influence on primary school pupils' achievement. This gap limits evidence-based interventions to address declining performance standards. Consequently, this study investigated the influence of class size and pupils' attentiveness on academic performance among primary school pupils in the Jamisa Cluster, West Coast Region, The Gambia.

### Research Questions

The following research questions guided the study:

1. What is the relationship between class size, pupils' attentiveness, and academic performance among primary school pupils in the West Coast Region of The Gambia?
2. What is the joint contribution of class size and pupils' attentiveness to academic performance?
3. What is the relative contribution of class size and pupils' attentiveness to academic performance?

### Methodology

This study adopted quantitative research design using a descriptive survey approach. This design enabled the collection of data through structured instruments to identify patterns and relationships among variables. The population comprised 4,218 primary school teachers in Regional Education Directorate 2 (RED2), The Gambia. The sample size of 188 teachers was determined using Yamane's (1967) formula. A stratified random sampling technique was employed to select four primary schools in the West Coast Region, consisting of two public and two private schools. Each stratum contributed 94 respondents, resulting in a total sample of 188 teachers. Data were collected using a researcher-developed instrument titled the Class Size and Pupils' Attentiveness–Academic Performance Questionnaire (CSPAAPQ). The CSPAAPQ comprised 24 items organized into four sections:

- **Section A:** Demographic Information (e.g., age, gender, years of teaching experience, educational qualification).
- **Section B:** Class Size (items capturing actual number of pupils per class and perceived adequacy of class size).
- **Section C:** Pupils' Attentiveness (10 items measuring behaviours such as responding to questions, concentration, staying on task, and avoiding distractions).
- **Section D:** Academic Performance (items capturing teachers' ratings of pupils' performance based on continuous assessment scores, class participation, and completion of assignments).

Items in Sections B–D were rated on a 5-point Likert-type scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), except for class size in Section B, which also included a direct numeric entry for the number of pupils per class. The instrument was subjected to expert review to ensure face and content validity. A pilot study was conducted with 26 respondents outside the study population. Reliability was established using Cronbach's alpha, yielding a coefficient of  $\alpha = .867$  for the Pupils' Attentiveness scale and  $\alpha = .884$  for the Academic Performance scale, indicating high internal consistency for both subscales. Data were analyzed using Pearson's correlation coefficient to determine the strength and direction of relationships

between variables, and multiple regression analysis to examine the joint and predictive relationships among combined variables at the 0.05 level of significance ( $p < .05$ ).

## Results

### Respondents' Demographic Characteristics

**Table 1: Descriptive Statistics of Respondents' Demographic Variables**

| Variable                     | M     | SD   | Min | Max |
|------------------------------|-------|------|-----|-----|
| Age (years)                  | 33.23 | —    | 19  | 63  |
| Years of Teaching Experience | 8.89  | —    | 1   | 35  |
| Number of Pupils per Class   | 40.87 | 5.54 | 30  | 54  |

*Note.*  $N = 188$ . Age and teaching experience are in years.

The final sample consisted of 188 primary school teachers from the West Coast Region of The Gambia. Female teachers constituted the majority of respondents ( $n = 122$ , 64.9%), compared to male teachers ( $n = 66$ , 35.1%). Regarding educational qualifications, the majority of respondents held a Primary Teacher Certificate (PTC) (68.0%), followed by a Diploma in Primary Education (29.3%). Fewer respondents possessed higher qualifications, such as a Bachelor of Science (BSc) degree (1.8%) or a Higher National Diploma (HND) (0.6%). These figures reflect the typical qualification profile of primary school teachers in the region, where certificate and diploma holders form the bulk of the teaching workforce.

Respondents had a mean age of 33.23 years ( $SD = 9.87$ ), ranging from 19 to 63 years, indicating a relatively young teaching workforce. The mean years of teaching experience was 8.89 ( $SD = 7.42$ ), suggesting moderate professional experience among the respondents. The mean class size was 40.87 pupils ( $SD = 5.54$ ), with a minimum of 30 and a maximum of 54, indicating relatively large but consistent class sizes across the sampled schools.

**Table 2: Teachers' Ratings of Pupils' Attentiveness**

| S/N | Item                                                    | Mean | SD   |
|-----|---------------------------------------------------------|------|------|
| 1   | Responds to questions in class promptly                 | 3.24 | 1.34 |
| 2   | Copies detailed notes given by the teacher              | 3.99 | 0.99 |
| 3   | Concentrates on tasks even when there are distractions  | 3.31 | 1.30 |
| 4   | Stays interested in class discussions                   | 3.82 | 1.04 |
| 5   | Opens subject text quickly compared to peers            | 3.76 | 1.13 |
| 6   | Stays on task until work is completed                   | 3.94 | 1.14 |
| 7   | Asks questions to clarify understanding                 | 3.59 | 1.28 |
| 8   | Pays close attention to teacher instructions            | 4.03 | 1.08 |
| 9   | Avoids distractions while studying or doing assignments | 2.94 | 1.24 |
| 10  | Attempts exercises given by the teacher                 | 3.87 | 0.99 |

*Note.* Ratings were on a 5-point scale (1 = low attentiveness, 5 = high attentiveness).  $N = 188$ . The results in Table 2 indicate that pupils generally demonstrated moderate to high levels of attentiveness, as most items recorded mean scores above 3.00. The highest ratings were observed for paying close attention to teacher instructions ( $M = 4.03$ ,  $SD = 1.08$ ), copying detailed notes given by the teacher ( $M = 3.99$ ,  $SD = 0.99$ ), and staying on task until work is completed ( $M = 3.94$ ,  $SD = 1.14$ ). The lowest rating was recorded for avoiding distractions while studying or doing assignments ( $M = 2.94$ ,  $SD = 1.24$ ), suggesting some challenges in sustained concentration.

**Research Question 1.** What is the relationship between class size and pupils' attentiveness, and academic performance of primary schools' pupils in West Coast Region?

**Table 3: Pearson Correlation Matrix**

| Variables                | 1     | 2       | 3 |
|--------------------------|-------|---------|---|
| 1. Class Size            | 1     |         |   |
| 2. Pupils' Attentiveness | 0.137 | 1       |   |
| 3. Academic Performance  | 0.104 | 0.653** | 1 |

Note. Note. \*\* $p < .01$  (2-tailed).

Pearson correlation analysis was conducted to examine the relationships among class size, pupils' attentiveness, and academic performance. The results indicate a strong, positive, and statistically significant relationship between pupils' attentiveness and academic performance ( $r = 0.653$ ,  $p < 0.01$ ). This suggests that higher levels of attentiveness are associated with improved academic outcomes. However, the relationships between class size and pupils' attentiveness ( $r = 0.137$ ,  $p = 0.054$ ), and between class size and academic performance ( $r = 0.104$ ,  $p = 0.141$ ), were weak and not statistically significant. This implies that class size does not have a direct significant relationship with either attentiveness or academic performance within the sampled population.

**Research Question 2:** What is the joint contribution of class size and pupils' attentiveness to the academic performance of primary school pupils in, west Coast Region?

**Table 4 : Model summary and ANOVA for multiple regression**

**Model Summary**

| R     | R <sup>2</sup> | Adjusted R <sup>2</sup> | Std. Error |
|-------|----------------|-------------------------|------------|
| 0.653 | 0.426          | 0.420                   | 16.076     |

**ANOVA**

| Source     | Sum of Squares | df  | Mean Square | F      | Sig. |
|------------|----------------|-----|-------------|--------|------|
| Regression | 37834.985      | 2   | 18917.492   | 73.198 | .000 |
| Residual   | 50913.470      | 197 | 258.444     |        |      |
| Total      | 88748.455      | 199 |             |        |      |

Multiple regression analysis was conducted to determine the joint contribution of class size and pupils' attentiveness to academic performance. The results show that the regression model was statistically significant ( $F(2,197) = 73.198$ ,  $p < 0.05$ ), indicating that the predictors jointly influence academic performance. The model produced an  $R^2$  value of 0.426 and an adjusted  $R^2$  of 0.420, indicating that approximately 42.6% of the variance in academic performance is explained by class size and pupils' attentiveness. This reflects a moderately strong explanatory power. These findings suggest that while both variables contribute jointly to academic performance, a substantial proportion of variance (57.4%) is explained by other factors not included in the model.

**Research Question 3:** What is the relative contribution of class size and pupils' attentiveness to academic performance of primary schools in West Coast Region?

**Table 5: Regression coefficients predicting academic performance from class size and pupils' attentiveness**

| Predictor             | B     | Std. Error | Beta ( $\beta$ ) | t      | Sig.  |
|-----------------------|-------|------------|------------------|--------|-------|
| Constant              | 3.115 | 6.360      |                  | 0.490  | 0.625 |
| Class Size            | 0.029 | 0.104      | 0.015            | 0.284  | 0.777 |
| Pupils' Attentiveness | 1.725 | 0.144      | 0.651            | 11.944 | 0.000 |

The relative contributions of the independent variables were assessed using standardized beta coefficients. The results show that pupils' attentiveness made a significant and strong contribution to academic performance ( $\beta = 0.651$ ,  $t = 11.944$ ,  $p < 0.05$ ). In contrast, class size did not make a significant contribution ( $\beta = 0.015$ ,  $t = 0.284$ ,  $p = 0.777$ ), indicating that it is

not a meaningful predictor of academic performance in this study. These findings suggest that pupils' attentiveness is the dominant predictor of academic performance, while class size has a negligible and statistically insignificant effect when both variables are considered simultaneously

### **Discussion of Findings**

The findings of this study provide important insights into the relationship, joint contribution, and relative influence of class size and pupils' attentiveness on academic performance among primary school pupils in the West Coast Region of The Gambia. With respect to the first research question, the results revealed a strong and statistically significant positive relationship between pupils' attentiveness and academic performance. This indicates that pupils who are more attentive in class tend to achieve better academic outcomes. In contrast, class size showed weak and non-significant relationships with both pupils' attentiveness and academic performance, suggesting that it does not directly influence learning outcomes within the sampled context. These findings support previous studies which emphasize the critical role of attentiveness in enhancing academic achievement (Johnson & Lee, 2018; Kumar & Upadhyay, 2019).

However, the non-significant effect of class size in this study contrasts with findings from other contexts. Omedo and Sekiswa (2024) and Utsu, Isaac, and Erdoo (2026) reported that class size plays a significant role in academic performance, with smaller classes facilitating better teacher–pupil interaction and improved learning outcomes. Similarly, studies in African contexts have shown that large class sizes can limit teacher–pupil interaction and reduce pupils' attentiveness, thereby negatively affecting academic performance (Mekasha & Tsegaye, 2018; Ng'eno et al., 2019). Conversely, systematic reviews suggest that while extremely large classes negatively impact student performance, the difference between moderately large and small classes is often negligible (Campbell Collaboration, 2018). This aligns with the present study's finding that class size did not significantly predict academic performance when pupils' attentiveness was considered, suggesting that other factors such as teacher quality, availability of learning materials, and learner engagement may play more significant roles.

Regarding the second research question, the regression analysis showed that class size and pupils' attentiveness jointly made a significant contribution to academic performance. This finding is consistent with Blatchford, Edmonds, and Martin (2003), who reported that class size and pupil engagement behaviours collectively influence educational outcomes. More recently, meta-analytic evidence has demonstrated that structural factors (like class size) and behavioural factors (like engagement) jointly account for substantial variance in student achievement, though the relative contribution of each varies by context (Patall et al., 2024). However, the joint effect in this study appears to be largely driven by pupils' attentiveness rather than class size, suggesting that behavioural factors may mediate the relationship between structural variables and learning outcomes.

For the third research question, the results demonstrated that pupils' attentiveness is a strong and statistically significant predictor of academic performance, whereas class size has no significant effect when both variables are considered simultaneously. This finding aligns with recent evidence showing that student behaviours and engagement are stronger predictors of educational outcomes than class size alone (Reio & Callahan, 2022). Furthermore, systematic reviews indicate that while class size may affect the learning environment, its impact on academic performance is often offset by instructional quality and student engagement strategies (Campbell Collaboration, 2018). The present study extends this literature by demonstrating that in the Gambian primary school context, pupils' attentiveness is a more critical determinant of academic performance than class size. Overall, the findings suggest that while class size may influence the learning environment, its effect on academic performance is indirect and less

significant compared to pupils' attentiveness. This underscores the need for greater emphasis on strategies that enhance pupil engagement, concentration, and active participation in the classroom as a means of improving academic outcomes.

### **Conclusion and Implications**

This study examined the influence of class size and pupils' attentiveness on academic performance among primary school pupils in the West Coast Region of The Gambia. The findings reveal that pupils' attentiveness is a significantly stronger predictor of academic performance than class size, underscoring the central role of learner engagement in shaping educational outcomes. Although class size remains an important structural feature of the learning environment, its effect appears indirect and comparatively less influential than behavioural factors such as attentiveness. This suggests that interventions aimed at enhancing pupils' focus, participation, and sustained engagement are likely to produce more immediate and meaningful improvements in academic performance than structural adjustments alone.

The findings have important implications for educational policy and practice. Policymakers, particularly within the Ministry of Basic and Secondary Education, should complement efforts to manage class size with targeted initiatives that promote active learning, effective classroom management, and learner-centred pedagogical practices. While investment in educational infrastructure such as the provision of additional classrooms and learning facilities remains essential for improving the learning environment, such structural measures should be integrated with strategies that directly enhance pupils' attentiveness. At the classroom level, teachers should adopt interactive instructional approaches that foster participation, sustain attention, and minimise distractions. Continuous professional development programmes are also necessary to equip teachers with effective classroom management skills, learner engagement techniques, and motivational strategies that support sustained pupil involvement.

Furthermore, educational stakeholders should be sensitised to the critical role of attentiveness in determining academic success, particularly at the primary school level. Maintaining optimal class sizes remains important, especially where large enrolments may hinder individual attention and effective teacher-pupil interaction. However, priority should be given to interventions that integrate manageable class sizes with attentiveness-focused strategies. It is also important to recognise that academic performance is influenced by multiple interrelated factors beyond those examined in this study, including teaching quality, availability of instructional resources, and pupils' socio-economic background. Consequently, efforts to improve learning outcomes should adopt a holistic approach that combines both structural and behavioural interventions.

Overall, this study contributes to the growing body of knowledge on classroom dynamics and academic achievement, highlighting pupils' attentiveness as a critical determinant of success in primary education within the Gambian context.

### **Recommendations**

- The Government of The Gambia, in collaboration with development partners, should provide funding to construct additional classrooms and procure learning facilities to reduce class sizes in primary schools.
- Educational stakeholders should be sensitized to the importance of pupils' attentiveness as a key determinant of academic performance in primary schools.
- The Ministry of Basic and Secondary Education (MoBSE) should review existing policies to improve resource allocation, classroom management strategies, and teacher support in primary schools.

- MoBSE, in collaboration with educational policymakers and school leaders, should implement strategies to optimize large class sizes while simultaneously promoting attentiveness-enhancing practices.
- Teachers and school administrators should implement classroom strategies that enhance pupils' attentiveness, such as interactive teaching, use of instructional aids, positive reinforcement, and structured opportunities for active participation.
- Continuous professional development should be offered to teachers, focusing on classroom management, learner engagement techniques, and motivational strategies that sustain pupils' focus and involvement.

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