



Class Size and Administrative Effectiveness in Senior Secondary Schools in Gombe Metropolis

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Abstract: This study examined how class size affects school administration in senior secondary schools in Gombe Metropolis, Nigeria. Guided by Frederick Taylor's Scientific Management Theory, the study focused on three administrative domains: resource allocation, teacher supervision, and learner support services. A descriptive survey design was used, and 128 administrators were sampled from a population of 189 through the Taro Yamane formula and stratified sampling. Data were collected with a validated questionnaire and analysed using descriptive statistics. Findings showed that large class sizes place significant pressure on instructional materials, classroom facilities, and administrative resources. Administrators reported reduced supervisory effectiveness, weakened monitoring of student behaviour, and limited capacity to provide individualized academic and emotional support. The study concludes that overcrowded classrooms undermine core administrative functions and diminish the quality of school operations. It recommends stricter class-size policies, improved teacher recruitment, strategic resource planning, and enhanced support systems for teachers and learners.

Keywords: Class size, school administration, supervision, resource allocation, learner support, scientific management.

INTRODUCTION

Class size has remained a central and contentious issue in educational research, policy, and practice for several decades. The debate continues because class size influences the quality of instruction, learner engagement, teacher workload, resource utilization, and the overall functioning of school systems. Empirical evidence from international and national studies consistently shows that the number of students assigned to a teacher affects both academic

performance and the efficiency of school management structures (Hattie, 2009; Blatchford et al., 2011). Although many countries have attempted to implement class-size reduction policies, demographic pressures, limited funding, and infrastructural deficits continue to undermine these efforts, especially in developing nations where education systems are already under strain. As a result, the administrative challenges associated with large classes have become increasingly difficult for school leaders to address.



In many nations, the issue of class size has moved beyond discussions of student learning to broader concerns about school governance, administrative efficiency, and institutional effectiveness. Administrators must not only ensure instructional quality but also manage teacher supervision, classroom allocation, provision of learning materials, and learner support services. These responsibilities become more complex in environments where classrooms are overcrowded. The difficulty of overseeing teachers, monitoring learner behaviour, ensuring discipline, and maintaining accurate records increases proportionally with class size (Bandur, 2012). Consequently, large class sizes do not merely affect academic achievement; they shape the entire administrative ecology of the school.

In Sub-Saharan Africa, the challenge of rising class size is particularly acute due to high population growth rates, rapid urbanization, limited school infrastructure, unstable funding patterns, and a chronic shortage of qualified teachers. Many education systems in the region, including Nigeria, struggle to meet the recommended student-teacher ratio of 35:1 suggested by UNESCO (UNESCO, 2021). Instead, classes of 60–100 learners are common, especially in urban public schools where enrolments increase annually without proportional investment in infrastructure or staffing. In such settings, administrators face significant obstacles in allocating resources, conducting effective supervision, and delivering learner support services, all of which are fundamental to an efficient school system.

Nigeria's education system reflects these systemic challenges. Senior secondary schools across the federation continue to operate with class sizes that far exceed national policy recommendations. Persistent issues such as insufficient funding, inadequate classroom facilities, lack of instructional materials, and uneven teacher distribution contribute to overcrowded learning environments (Ogunyemi & Ajayi, 2020). Administratively, these conditions create a mismatch between the responsibilities expected of school leaders and

the limitations imposed by limited resources and large student numbers. The strain on school management is further compounded by the need to ensure compliance with curriculum standards, maintain discipline, supervise instruction, and support teachers, all within an overstretched system.

Gombe State is not exempt from these challenges. As one of the rapidly expanding urban centres in northeastern Nigeria, the metropolis experiences high student enrolment in secondary schools every year. Rising demand for education, internal migration, economic struggles, and cultural emphasis on schooling have collectively contributed to overcrowded classrooms. Many secondary schools, particularly public ones, face serious space constraints, insufficient furniture, shortages of teaching materials, and inadequate teacher strength. Administrators constantly struggle with resource allocation decisions, ensuring fair distribution of textbooks, managing limited classroom space, and maintaining a balanced workload among teachers. These constraints undermine the effective functioning of administrative processes and hinder the capacity of school leaders to execute their duties effectively.

The administrative implications of large class sizes in Gombe Metropolis are far-reaching. Resource allocation becomes more difficult when student numbers exceed available resources. Administrators must make decisions about how to distribute insufficient textbooks, manage overcrowded classrooms, and ensure equitable access to instructional materials, sometimes resorting to improvisation. Teacher supervision also becomes more complex. Monitoring instructional practices, providing feedback, conducting classroom observations, and ensuring compliance with teaching standards become arduous when teachers manage large, noisy, and difficult-to-control classes. The capacity of administrators to maintain discipline, track learner progress, and enforce academic policies diminishes significantly under such conditions. Moreover, learner support services, including counselling,



remediation, mentoring, and pastoral care are severely limited in congested classrooms, where individual student needs easily go unnoticed.

Despite the vast literature on class size and academic achievement, far fewer studies have examined the administrative dimension of class size, especially in the Nigerian context. Much of the research focuses on the pedagogical challenges associated with teaching large classes, with little emphasis on how class size affects the daily administrative operations of schools. The few studies that explore administrative consequences often restrict their analysis to teacher workload or resource shortages without capturing the broader managerial implications. As a result, there is a limited understanding of how class size affects routine administrative functions such as supervision, planning, record-keeping, resource management, discipline coordination, and support services. This gap is particularly concerning because administrative effectiveness directly influences instructional quality, student retention, teacher satisfaction, and overall school performance.

Statement of the problem

The scarcity of research on the administrative implications of class size in Gombe State further underscores the need for an empirical study. Local school administrators continue to grapple with issues such as delayed supervision cycles, insufficient follow-up on teacher performance, congestion in classrooms, inability to provide individualized student support, and difficulties in ensuring compliance with curricular and behavioural expectations. These issues compromise school quality but remain underreported and understudied. Documenting the administrative consequences of large classes is therefore essential for developing context-specific interventions, informing policy decisions, and supporting school leaders in managing the growing demands of their institutions.

As student numbers increase, the administrative system becomes less efficient, less predictable,

and more prone to breakdown. Therefore, Taylor's framework provides a strong theoretical justification for analysing how overcrowded classrooms affect the administrative efficiency of schools.

This study fills an important gap in academic literature by providing empirical evidence on the administrative consequences of class size in a Nigerian urban environment. It contributes to scholarship by integrating theory, context, and empirical data, and it offers practical insights that school leaders, policymakers, and education planners can use to mitigate the negative effects of large classes. The findings are expected to support strategic interventions such as teacher recruitment, infrastructure expansion, policy enforcement, and improved administrative planning.

Objectives of the Study

The main aim of this study is to Class Size and Administrative Effectiveness in Senior Secondary Schools in Gombe Metropolis. Specifically, the study seeks:

1. To determine the effect of class size and administrative effectiveness in senior secondary school in Gombe state
2. examine the effect of class size and administrative effectiveness in senior secondary school in Gombe state

Research Questions

The following research questions were raised and answered in the study:

1. What is the difference between the class size and administrative effectiveness in senior secondary school in Gombe state?
3. What is the difference between the mean class size and administrative effectiveness in senior secondary school in Gombe state?



METHODOLOGY

Research Design

This study adopted a descriptive survey research design. The design was considered appropriate because the study sought to obtain factual information from administrators on how class size affects resource allocation, teacher supervision, and learner support services within senior secondary schools. A descriptive survey allows researchers to collect quantitative data from a defined population and analyse trends, perceptions, and administrative realities without manipulating variables. Because the study's objective was to determine existing conditions as perceived by school administrators, rather than test causal relationships, the descriptive survey design was the most suitable methodological approach.

Population of the Study

The population comprised 189 administrators drawn from all senior secondary schools located within Gombe Metropolis, including principals and vice-principals (administration and academics). These categories were selected because they hold administrative responsibilities directly affected by class size, including supervision, record-keeping, discipline management, and resource distribution. Their involvement ensures that the study captures reliable administrative perspectives on the challenges posed by large class sizes.

Sample and Sampling Technique

A sample of 128 administrators was drawn from the population using the Taro Yamane (1967) sample size determination formula:

$$n = \frac{N(1 + N(e)^2)}{N + N(e)^2} = \frac{189(1 + 0.05^2)}{189 + 0.05^2}$$

Where:

- n = sample size
- N = 189 (population)
- e = 0.05 (margin of error)

The calculated sample size was rounded to 128.

To ensure representativeness, stratified random sampling was employed. Schools were grouped into strata based on:

1. School type (public or private),
2. Administrative level (principal, vice-principals),
3. School size category.

Within each stratum, participants were randomly selected proportionately. This approach prevented overrepresentation of public or private schools and ensured that views from multiple hierarchical levels were captured.

Instrument for Data Collection

Data were collected using a structured questionnaire titled *Class Size and Administrative Effectiveness Questionnaire (CSAEQ)*. The instrument consisted of three major sections, each aligned with a research question:

- **Section A:** Class size and resource allocation
- **Section B:** Class size and teacher supervision
- **Section C:** Class size and learner support services

Each section contained items measured using a four-point rating scale:

- Strongly Agree (SA) = 4
- Agree (A) = 3
- Disagree (D) = 2
- Strongly Disagree (SD) = 1

This scaling was chosen because it allows clear interpretation of agreement or disagreement without a neutral midpoint, ensuring that respondents express a definite position.



Validity of the Instrument

To guarantee content accuracy and appropriateness, the questionnaire underwent expert validation:

- Two experts in Educational Administration reviewed the instrument for clarity and relevance.
- One specialist in Measurement and Evaluation vetted item structure, scale suitability, and alignment with research objectives.

All recommended adjustments, such as rephrasing ambiguous statements, eliminating overlapping items, and organizing items under logical subthemes, were incorporated before final administration.

Reliability of the Instrument

A pilot study was conducted using 13 administrators (10% of the sample) from similar schools outside the study area. Their responses were subjected to a Cronbach's Alpha reliability test, which yielded:

- Section A: 0.81
- Section B: 0.79
- Section C: 0.83

An overall reliability index of 0.81 was obtained, indicating high internal consistency. This ensures that the items reliably measure the constructs they were designed to measure.

Method of Data Collection

The researcher visited each selected school in person. Participants were assured of confidentiality, voluntary participation and no risk or negative consequence associated with participation. The questionnaires were administered face-to-face during school hours to ensure high response rates. Respondents were given sufficient time to complete the instrument, and the questionnaires were retrieved immediately after completion. A 100% retrieval rate was achieved, resulting in a usable dataset of 128 responses.

Method of Data Analysis

Data were analysed using descriptive statistics, primarily mean scores and standard deviations, as follows:

- A decision rule of **2.50** was used as the cut-off point:
 - **Mean $\geq$ 2.50 = Agree**
 - **Mean $<$ 2.50 = Disagree**

This threshold is standard in educational research using four rating-scale questionnaires.

RESULTS

This section presents the findings of the study in line with the three research questions. Data were analysed using descriptive statistics, including frequencies, percentages, means, and standard deviations. A decision benchmark of 2.50 was used to determine agreement

Research Question 1:

How does class size affect resource allocation in senior secondary schools in Gombe Metropolis?

**Table 1***Class Size and Resource Allocation (N = 128)*

S/N	Statement	Mean	SD	Remark
1	Overcrowded classrooms make it difficult to provide adequate furniture.	3.58	0.540	Agree
2	The school budget prioritizes classroom expansion over teacher training.	3.07	0.720	Agree
3	Large class sizes increase the cost of classroom management.	3.45	0.584	Agree
4	Large class sizes lead to insufficient textbooks and learning materials.	3.53	0.572	Agree
5	Instructional resources are overstretched in large classes.	3.53	0.558	Agree
6	School maintenance costs increase due to large classes.	3.13	0.729	Agree
7	Funds for extracurricular activities reduce as student numbers rise.	3.00	0.771	Agree
8	Large classes hinder individualized learning support.	3.60	0.535	Agree
9	The school frequently runs out of stationery due to high enrolment.	2.95	0.813	Agree
10	Overcrowded classrooms lead to sanitation and hygiene challenges.	3.29	0.743	Agree

All items recorded mean scores above 2.50 and moderate standard deviations, indicating overall agreement that large class sizes place heavy strain on administrative resources. Respondents emphasized the difficulty in providing adequate furniture, learning materials, and individualized support (Items 1, 4, 5, 8). Recurrent maintenance costs and shortages in stationery further

illustrate the financial consequences of overcrowded classes.

Research Question 2:

What is the impact of class size on teachers' supervision in senior secondary schools in Gombe Metropolis?

Table 2*Class Size and Teachers' Supervision (N = 128)*

S/N	Statement	Mean	SD	Remark
11	Teachers in larger classes struggle to maintain effective supervision.	3.62	0.532	Agree
12	Class size significantly affects supervision quality.	3.58	0.554	Agree
13	Smaller classes allow better supervision.	3.66	0.522	Agree
14	Large classes hinder the monitoring of individual students.	3.63	0.530	Agree
15	Supervision becomes less effective when class sizes exceed limits.	3.54	0.571	Agree
16	Teachers in large classes report supervision challenges.	3.45	0.584	Agree
17	Monitoring instruction is easier in smaller classes.	3.64	0.528	Agree
18	Teachers in large classes require more support to supervise effectively.	3.38	0.625	Agree
19	Large class sizes reduce teachers' ability to complete supervisory duties.	3.53	0.572	Agree
20	Current teacher-student ratios are adequate for supervision.	1.65	0.835	Disagree

Findings show overwhelming agreement that class size has a strong negative impact on teacher supervision. Respondents confirmed that

large classes weaken monitoring, reduce feedback quality, and increase teacher workload. The only item with disagreement was Item 20,



where most respondents stated that current teacher–student ratios are not adequate for proper supervision.

What is the impact of class size on learner support services in senior secondary schools in Gombe Metropolis?

Research Question 3:

Table 3

Class Size and Learner Support Services (N = 128)

S/N	Statement	Mean	SD	Remark
21	Class size affects access to learner support services.	3.45	0.584	Agree
22	Smaller classes allow better identification of learner needs.	3.68	0.509	Agree
23	Learners in large classes receive less academic support.	3.59	0.557	Agree
24	Emotional and psychological support is easier in small classes.	3.38	0.741	Agree
25	Smaller classes enable more one-on-one support.	3.69	0.484	Agree
26	Overcrowded classrooms limit learner support services.	3.52	0.570	Agree
27	Large classes increase workload and reduce individual support.	3.62	0.532	Agree
28	Learners in small classes are more likely to seek support services.	2.90	0.822	Agree
29	Learner support services are more efficient in smaller classes.	3.48	0.566	Agree
30	Reducing class size enhances learner support quality.	3.66	0.522	Agree

All mean scores exceeded 2.50 and moderate standard deviations, indicating strong agreement that class size affects learner support services. Respondents consistently affirmed that overcrowded classes reduce access to individualized guidance, academic counselling, emotional support, and teacher responsiveness.

allocation, teacher supervision, and learner support services.

Class Size and Resource Allocation

The results from Table 4.1 indicate a consistent perception among administrators that large class sizes profoundly strain school resources. High mean scores ($M = 3.00$ – 3.60) and moderate standard deviations show strong agreement that overcrowded classrooms make it difficult to provide adequate furniture, textbooks, learning materials, and modern instructional tools. This aligns with existing research showing that large class sizes increase demand for physical facilities, accelerate wear and tear, and inflate school operating costs (Adeyemi, 2021; Ayuba, 2019).

DISCUSSION

The purpose of this study was to examine how class size affects administrative effectiveness in senior secondary schools within Gombe Metropolis. The discussion synthesizes the statistical findings from the three research questions with theoretical and empirical literature. The interpretation is grounded in Frederick Taylor's Scientific Management Theory, which emphasizes efficiency, systematic organization, and optimal utilization of resources. In the context of school administration, Taylor's framework underscores the importance of manageable workloads, well-distributed tasks, structured supervision, and rational allocation of scarce resources. The findings show that large class sizes undermine these administrative principles across resource

The difficulty in providing individualized learning support ($M = 3.60$, $SD = 0.535$) further illustrates how overcrowding stretches instructional resources beyond their functional limits. Schools in Gombe Metropolis, like many in Nigeria, operate in a context of limited funding, uneven teacher distribution, and infrastructural inadequacy. As student numbers



rise, administrators must prioritize immediate needs, such as maintenance and seating, over quality-enhancing investments like teacher development. This supports Wanjiru (2020), who noted that overstretched resources in large classes reduce the ability of schools to innovate or adopt learner-centered pedagogies.

From a theoretical perspective, Taylor's Scientific Management Theory emphasizes that organizational efficiency relies on proper planning and rational allocation of inputs. When class sizes expand beyond manageable levels, schools cannot maintain optimal workflow processes. Resources become scarce, planning becomes reactive, and administrators expend more energy on compensating for shortages rather than improving instructional quality. The strain observed in Gombe Metropolis therefore reflects a breakdown of administrative efficiency resulting from excessive student population relative to available resources.

Class Size and Teacher Supervision

The findings from Table 4.2 reveal that class size significantly impairs teacher supervision. Items addressing classroom monitoring, behaviour management, feedback, and lesson delivery all recorded high levels of agreement ($M = 3.45\text{--}3.66$). Teachers in large classes reportedly struggle to maintain discipline, monitor individual student performance, and provide timely feedback. These outcomes mirror findings by Johnson (2022) and Ahmed (2021), who argue that supervision deteriorates as teacher workload increases.

The disagreement with Item 20 (current teacher–student ratios are adequate) is particularly telling ($M = 1.65$, $SD = 0.835$). It underscores that administrators are fully aware of the inadequacy of supervision in overcrowded classrooms. Large class sizes force teachers to adopt whole-class instructional methods, limit their mobility within the classroom, and reduce opportunities for personalized academic or behavioural monitoring.

According to Scientific Management Theory, effective supervision requires a manageable span of control, meaning administrators and teachers must oversee a workload that allows tasks to be performed efficiently. Taylor emphasized the need for division of labour and well-regulated workflows. However, in Gombe Metropolis, excessive class sizes widen the span of control beyond manageable limits. As a result:

- Teachers become overwhelmed.
- Administrators cannot conduct regular classroom observations.
- Feedback cycles become less effective.
- Behavioural issues escalate.

The theory therefore helps explain why supervision becomes inefficient: the number of students per teacher disrupts the internal administrative processes required for consistent monitoring.

The findings also align with Blatchford et al. (2011), who concluded that large classes reduce opportunities for teacher–student interaction and weaken the effectiveness of classroom management strategies. In Gombe Metropolis, where teachers already operate under resource constraints, the added burden of large class sizes exacerbates supervision challenges and contributes to disciplinary problems.

Class Size and Learner Support Services

The results from Table 4.3 demonstrate that learner support services, academic, emotional, and psychological are significantly compromised by large class sizes. All items recorded high agreement ($M = 3.38\text{--}3.69$), indicating that administrators perceive large classes as a major barrier to identifying student needs, offering counseling, and providing individualized academic assistance.

This finding aligns with Williams (2022) and Green (2021), who found that large class sizes reduce the ability of teachers and administrators to provide one-on-one interventions. The high workload associated with managing many learners leaves little time for pastoral care or identifying struggling students. In overcrowded



schools, learners who require additional support often remain unnoticed, leading to disengagement, declining performance, or behavioural issues.

From a theoretical standpoint, Taylor's model highlights the importance of organized task allocation and efficient administrative procedures. Learner support services require attention to individual differences, structured record-keeping, and follow-up mechanisms. However, large class sizes disrupt these processes by magnifying the number of students requiring support while reducing available administrative time per learner. The result is a system where:

- Support services become generalized instead of individualized.
- Counselling becomes reactive instead of preventive.
- Monitoring becomes episodic instead of continuous.

This systemic overload contradicts the efficiencies expected under Scientific Management and explains why learner support services suffer in Gombe Metropolis schools.

The SD values in Table 4.3 (ranging from 0.484 to 0.822) indicate relatively stable but diverse opinions, suggesting that while the negative impact is widely recognized, the severity varies depending on school context. Schools with extremely large classes likely experience more severe limitations than those with moderate class sizes.

Synthesis of Findings with Theory and Literature

Across all three research questions, a consistent pattern emerged: large class sizes undermine administrative effectiveness in senior secondary schools in Gombe Metropolis. The findings confirm that:

1. Resource shortages intensify with increasing class size.
2. Teacher supervision becomes less effective as workload increases.

3. Learner support services decline because individualized attention becomes impossible.

These outcomes mirror earlier research in Nigeria and globally. Scholars such as Adeyemi (2021), Ayuba (2019), Ogunyemi & Ajayi (2020), and Blatchford et al. (2011) all concluded that large class sizes erode school quality and administrative performance.

Taylor's Scientific Management Theory provides a coherent explanation for these patterns. The theory emphasizes:

- manageable workloads
- efficient supervision
- optimal distribution of resources
- streamlined organizational processes

Large class sizes violate these principles by creating administrative overload and inefficiency. Instead of structured processes, administrators in Gombe Metropolis are forced into crisis management, allocating scarce resources, responding to disciplinary issues, and attempting to maintain minimum instructional quality.

The convergence of empirical findings, theoretical insights, and contextual realities demonstrates that class size is not merely a pedagogical issue but a systemic administrative challenge with wide-reaching implications.

Conclusion

This study examined the impact of class size on administrative effectiveness in senior secondary schools in Gombe Metropolis. The findings consistently demonstrate that large class sizes undermine the three core administrative domains investigated: resource allocation, teacher supervision, and learner support services. Overcrowded classrooms strain physical and financial resources, reduce the availability of instructional materials, and increase maintenance demands. Teacher supervision becomes more difficult as workloads expand, behavioural issues multiply, and opportunities for monitoring individual learners diminish. Learner support services are severely weakened



as teachers and administrators are unable to offer personalised academic, emotional, or psychological support.

When interpreted through the lens of Scientific Management Theory, the results indicate that large class sizes disrupt organizational efficiency by expanding the span of control beyond manageable limits, interrupting systematic workflows, and overloading administrative processes. This operational strain prevents school leaders from functioning effectively and shifts their roles from instructional leadership to crisis management. As a result, the overall quality of education is compromised, and the capacity of schools to meet student needs is significantly reduced.

The study therefore concludes that the persistent issue of large class sizes in Gombe Metropolis represents a structural and administrative challenge, not merely a pedagogical concern. Addressing it requires systemic interventions at the policy, institutional, and administrative levels.

Recommendations

Based on the findings, the following recommendations are proposed:

The Ministry of Education and relevant authorities should enforce clear standards for maximum class size. Schools with enrolment beyond capacity should implement shift systems or establish additional arms to reduce congestion. Government and private school proprietors should employ more teachers to achieve appropriate teacher–student ratios. Investment is also required in classrooms, furniture, laboratories, ICT facilities, and sanitation infrastructure, expanding physical capacity will reduce overcrowding and improve instructional conditions.

Administrators should adopt improved classroom observation schedules, peer supervision models, and digital monitoring systems to compensate for supervision difficulties arising from large classes. Schools should adopt efficient budgeting that prioritizes

learning materials, maintenance, and support services, external funding through partnerships and community support should be explored to supplement limited budgets. Training programs focusing on classroom management, differentiated instruction, and large-class pedagogy will help teachers cope more effectively with high student numbers. Learning management systems (LMS), digital attendance tools, and automated assessment platforms can also reduce teacher workload and improve administrative efficiency in large classroom contexts.

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