Teachers-Pupils Ratio and Infrastructural Quality on Universal Basic Education (UBE) Performance in Kaduna State

[1]Stephen Awamim Ledawo, [2]Philomena Member Solomon, [3]Kelechi Goodluck Areo
[1]Educational Foundations Department,
[2&3]General Studies Education Department
Faculty of Education,
Federal University of Education, Zaria

ABSTRACT

This study assess the Teachers-Pupils Ratio and Infrastructural Quality on Universal Basic Education Performance in Kaduna State. Two research questions and hypotheses were formulated to examine variables such as teachers-pupils' ratio, Provisions of infrastructural Facilities and UBE Performance in Kaduna State. This section review the related literature from the variables of the research titles: concepts of UBE, Teachers and pupils' ratio, infrastructural facilities and quality of the available facilities, empirical studies was undertaken by the researchers to review the studies of other experts. Methodology for embarking on the research was presented in the study. The results were organized and presented using frequency tables to provide a clear and comprehensive picture of the findings. Both descriptive and inferential statistical tools were utilized in analysing the data, the results and analysis of the data collected, along with the hypothesis testing were presented. Null hypotheses were tested using the t-test at a 0.05 level of significance. In each case, the calculated t-value was less than the critical t-value. Therefore, all the hypotheses were retained. This indicates that the opinions of teachers and UBE personnel in Kaduna State regarding the research topic do not differ significantly. Hence, the respondents provided relevant and consistent answers. The performance of the UBE programmes in Kaduna State reveals that teachers-pupils ratio and infrastructural facilities are critical factors influencing success of UBE programme. The study identified significant inadequacies, which pose constraints to performance of pupils and teachers' delivery. To improve performance of UBE programmes, relevant authorities should prioritize providing necessary infrastructure, resources, and qualified manpower were highlighted as recommendation.

INTRODUCTION

The foundation of every society's development rests heavily on the quality of its education system. Education equips individuals with the knowledge, skills, competencies, and values needed to function effectively within their communities and contribute to national advancement. It fosters intellectual, moral, social, and technological growth, enabling individuals to participate meaningfully in societal and economic activities. Primary education, in particular, plays a crucial role in shaping children's cognitive abilities, providing essential skills in reading, writing, and mathematics, and laying the groundwork for scientific and reflective thinking.

In Nigeria, education is viewed as a major instrument for national development. To address disparities and improve access to basic

Corresponding author: Stephen Awamim Ledawo
✉ *steveawamim@gmail.com*
Educational Foundations Department, Faculty of Education, Federal University of Education, Zaria.

education, the Federal Government introduced the Universal Primary Education (UPE) scheme in 1976 and later re-launched it as the Universal Basic Education (UBE) programme in 1999. The UBE initiative was designed to provide nine years of free, compulsory, and uninterrupted basic education, aligning with global commitments such as the Education for All (EFA) goals and the Millennium Development Goal (MDG) on universal primary education. States, including Kaduna, established State Universal Basic Education Boards (SUBEBs) to support the programmes implementation.

Despite these efforts, the UBE programme continues to face numerous challenges. Nigeria is still ranked among countries with high illiteracy rates, with millions of children out of school, particularly in the northern region. Kaduna State, once known as a prominent centre of learning, has witnessed a decline in educational quality. Issues such as dilapidated infrastructure, inadequate seating, overcrowded classrooms, and shortages of qualified teachers have raised concerns about the effectiveness of UBE implementation in the state.

Infrastructure and facilities refer to those physical and spatial enablers of teaching and learning. They include classrooms, libraries, laboratories, workshops, play grounds, school farms and gardens, as well as provisions for water and sanitation. (Implementation guidelines for UBE, FME, 1999) in Iliyasu (2009). These listed infrastructure and facilities have to be of the appropriate quality, size and quantity to meet the minimum standard for promoting any meaningful teaching and learning under the Basic Education programme. An essential task in the planning process of Universal Basic Education Programme was a census of existing infrastructure and facilities. These facilities and infrastructure were assessed for their quality appropriateness and adequacy, and the findings are that the task of refurbishing dilapidated schools and building new ones is indeed enormous.

In facing this challenge, the Federal Government will support the efforts of states and local governments in a big way, while the populace will be taken along the entire process, to ensure complete interface between school, and other forms of teaching-learning environments and their immediate communities, Long before the start of the ill-fated Universal Primary Education scheme, government realized the need to invest heavily in the states for the purposes of education. According to Sofolahan in Iliyasu (2009) between 1974 and 1977 the Federal Government gave grants to all states to provide the additional classrooms required for all the anticipated number of pupils of about 8 million between the ages 6 and 12 to be in school. Additional funds were provided for the renovation of existing classrooms and to assist the states with the running expenses of primary education. However, it would appear that with more than 6-7 years of the official launching of the Universal Basic Educational Programme, the impact of government preparatory strategies in terms of infrastructures and facilities is yet to be seen or felt. Infrastructural facilities play an important role in the quality of education.

Realizing the numerous benefits derivable from primary education, the Federal Government of Nigeria launched the Universal Primary Education (UPE) programme in 1976, and the Universal Basic Education (UBE) scheme in 1999. It also came out with policy statements meant to enhance both the quantity and quality of education. Government stated that it would enhance the learning environment by providing physical and material facilities, including support services such as libraries, elementary science laboratories, basic health scheme, counselling, media and ICT centres for primary schools in the country. The learning environment plays an important role in the lives of young learners. Buttressing this statement, Siraj-Blatchford (2008) argues that the quality of the learning environment is probably the most important factor when understanding and explaining students' differences in learning. It can add a significant dimension to children's experience and development when the learning environment is carefully and knowingly arranged.

A learning environment, called 'the third teacher' in the Reggio Emilia Schools (Gandini, 2002) enhances and supports the child's ability to do something himself, take care of himself, initiate

Corresponding author: Stephen Awamim Ledawo
✉ *steveawamim@gmail.com*
Educational Foundations Department, Faculty of Education, Federal University of Education, Zaria.

and complete activities, take control of his own actions and responsibilities, communicate and interact with others easily, and have better perceptual and motor skills. Enhancing the learning environment includes the provision of physical and material facilities through which pupils can have unlimited access to knowledge and develop their potential maximally.

In spite of government's publicly declared statements of intention to provide facilities for all primary schools, lack of adequate infrastructure has been identified as a common feature of most public primary schools in Nigeria. Ajayi (2007) and Sulaiman (2004) have observed that infrastructural facilities such as classrooms, laboratories, libraries, furniture and fittings, textbooks and instructional materials were still inadequate in Nigerian primary schools and that where they were available, they were inadequate or in very bad state. The question then is: how available and adequate are infrastructural facilities needed for the successful implementation of the Universal Basic Education programme in Kaduna state schools?

STATEMENT OF THE PROBLEM

The core problem stems from the inability of some states, including Kaduna, to meet the performance requirements outlined by the Federal Ministry of Education and the Universal Basic Education Commission (UBEC). A successful UBE programme requires adequate teacher supply, instructional materials, infrastructure, and continuous training. However, evidence suggests that Kaduna State lacks the requisite personnel and facilities for optimal programme performance. This gap necessitated the present study, which examines the relationship between teacher–pupil ratios, infrastructure quality, and overall UBE performance in the state.

The findings of this study are expected to provide valuable insights for policymakers, SUBEB officials, UBE planners, educational administrators, and other stakeholders. By identifying the key challenges affecting UBE implementation, the study will contribute to the development of strategies aimed at improving

basic education delivery, reducing illiteracy, and ensuring that the programme achieves its fundamental goal of providing quality education for all children of school age in Kaduna State and Nigeria at large.

Objectives of the Study

The study aims to assess teacher–pupil ratios and infrastructural facilities as determinants of UBE performance. Specifically, it investigates
1. Teachers-pupils ratio on UBE performance in Kaduna state.
2. The Provisions of infrastructural Facilities and UBE Performance in Kaduna State.

Research Questions

The following research questions were formulated to guide the investigation:
1. What is the teachers-pupils ratio and UBE performance in Kaduna State?
2. What is the level of quality and availability of infrastructural facilities in UBE schools in Kaduna State?

Hypotheses

The following null hypotheses were tested in the study:
1. There is no significant difference between the opinions of UBE personnel and teachers regarding the teachers-pupils ratio of UBE programme in Kaduna State.
2. There is no significant difference between the opinions of UBE personnel and teachers on the adequacy and quality of infrastructural facilities in UBE programme in Kaduna State.

METHODOLOGY

The methodological procedures adopted for the study was outlined, including the research design, population, sampling techniques, instrument development, pilot testing, data collection, and methods of data analysis. The study employed a descriptive survey design, chosen for its ability to capture first-hand information from respondents and describe

Corresponding author: Stephen Awamim Ledawo
✉ *steveawamim@gmail.com*
Educational Foundations Department, Faculty of Education, Federal University of Education, Zaria.

conditions as they exist. This design allowed the researcher to investigate prevailing issues related to the performance of the Universal Basic Education (UBE) programme in Kaduna State.

The population consisted of all primary and junior secondary school students and teachers in northern and southern Kaduna, with approximately 67,000 teachers employed by the State Universal Basic Education Board (SUBEB). From this population, 210 teachers and UBE personnel were selected using stratified proportional random sampling. Ten Local Government Areas (LGAs) were sampled across the three senatorial districts, and from each LGA, one UBE school and one UBE office were selected.

A structured questionnaire titled Teachers' Pupils Ratio and Infrastructural Quality Checklist (TPRIQC) served as the instrument for data collection. It comprised two sections: Section A on demographic information and Section B on variables related to UBE implementation—teachers-pupils ratio, training and retraining of teachers, access to school locations, infrastructural facilities, and adequacy of qualified teachers. A total of 210 questionnaires were administered, but 200 were valid for analysis.

A pilot study with 25 respondents in GSS Kudan, Kudan LGA tested the instrument's usability. The questionnaire's validity was ensured through expert reviews in educational planning and measurement, leading to item revision and approval. The reliability of the instrument was determined using split-half testing and the Brown Prophecy Formula.

Data collection was supported by school staff and UBE officials, and relevant documents were also reviewed. Collected data were coded and analysed using SPSS Version 13, employing descriptive statistics (frequencies, percentages, means, and tables) and inferential statistics. A one-tailed t-test at a 0.05 significance level was used to test the study's hypotheses. Information from the above, affirming both descriptive and inferential methods were used to present and interpret the findings, providing a clear picture of UBE programme performance in Kaduna State.

RESULTS

Table 1, presents respondents' perceptions on key aspects of Universal Basic Education (UBE) performance in Kaduna State, based on mean scores and standard deviations from questionnaire responses.

Teachers–Pupils Ratio and UBE Performance

Table 1: Mean scores of Teachers-Pupils Ratio on UBE Performance

S/N	Variables	N	UBE Personnel		Teachers	
			Mean	SD	Mean	SD
1	The teacher-pupil ratio in my school allows for effective classroom management	100	1.10	.30	1.22	.48
2	The impact of the current Teachers-Pupils ratio is negatively affecting learning outcomes of pupils in my school.	100	1.44	.54	1.36	.52
3	I believe lower Teachers-Pupils ratio will receive the attention each pupil in the classroom.	100	2.32	1.03	2.43	.99
4	Teachers in my school are always overwhelmed by the number of pupils they are responsible for.	100	2.14	1.02	2.24	1.13
5	There are numbers of challenges affecting my school as a result of current overwhelming Teachers-Pupils ratio.	100	1.20	.62	1.11	.43
6	The relationship between the Teachers-Pupils ratio and pupil engagement in class activities is positive irrespective of the number	100	2.69	1.08	2.67	1.04

Corresponding author: Stephen Awamim Ledawo
✉ *steveawamim@gmail.com*
Educational Foundations Department, Faculty of Education, Federal University of Education, Zaria.

The first research question examined the state of the teachers–pupils' ratio in UBE schools. Analysis of mean scores (Table 1) showed that both UBE personnel and teachers generally agreed that UBE classrooms are congested. Low mean values revealed challenges such as ineffective classroom management, overwhelmed teachers, and negative effects on learning outcomes. Both groups held similar views, indicating strong agreement on the impact of high pupil numbers and reinforcing the reliability of findings.

Appraisal on the Provisions of Infrastructural Facilities in UBE schools

The second objective of the study focused on evaluating the Provisions of Facilities in UBE schools. Particularly those used for skills acquisition within the UBE Programme in Kaduna State. To guide this assessment, the following questions were posed:

how adequate is the provision of teaching and learning facilities in UBE schools?

How functional are these facilities in supporting performance of pupils in UBE schools?

Respondents' opinions regarding the availability, condition, and usability of these facilities were collected and analysed. Their views were summarized using mean scores and standard deviations, as presented in Table 2 These results provide insight into how well-equipped the schools are in terms of facilities necessary for practical, skills-based learning under the UBE programme.

Table 2: Mean scores of respondents on Provisions of Facilities and UBE Performance

S/N	Variables	N	UBE Personnel		Teachers	
			Mean	SD	Mean	SD
1	There is 100% educational facilities currently available in schools implementing UBE	100	2.39	1.16	2.25	1.19
2	The availability and condition of classroom facilities (e.g., desks, chairs, ventilation, and lighting) impact teaching effectiveness and pupils' academic performance in UBE school	100	2.86	1.33	2.96	1.36
3	Laboratory and library facilities enhance the practical learning experiences of pupils in my school	100	2.12	1.13	1.66	1.16
4	Access to technological facilities (e.g., computers, internet connectivity) affect the engagement and academic performance of pupils in UBE schools	100	2.25	.99	2.30	1.05
5	There is inadequate facilities for inclusive education (e.g., for students with disabilities) within the context of UBE schools	100	2.23	.96	2.05	.97
6	There are 100% educational facilities currently available in schools implementing UBE	100	2.41	1.01	2.51	.93

The mean scores of the two groups (UBE personnel and teachers) presented in the table indicate that the respondents generally agreed that the Provisions of Facilities are adequate for the implementation of the UBE Programme. This consensus is reflected in the mean responses to items 2, 3, 4, and 5 in the table. While all respondents affirmed the availability of Facilities, there was no full agreement between the two groups regarding the functionality of some of these Facilities. This divergence is particularly evident in their responses to item 3, which shows that access to technology (computer and network) are not considered functional by both groups.

Corresponding author: Stephen Awamim Ledawo
✉ *steveawamim@gmail.com*
Educational Foundations Department, Faculty of Education, Federal University of Education, Zaria.

Testing of Hypotheses

Hypotheses were formulated to determine whether significant differences exist between the opinions of teachers in Universal Basic Education (UBE) schools and personnel of the UBE Board regarding the appraisal of UBE programme performance in Kaduna State.

Hypothesis 1

There is no significant difference between the opinions of UBE personnel and teachers regarding the teachers–pupils' ratio of the UBE programme in Kaduna State.

To test this hypothesis, the scores of both groups were analysed using a two-tailed t-test. This test was considered appropriate because the hypothesis involved two levels of the independent variable, making it suitable for determining whether a significant difference exists between the opinions of respondents on the teachers–pupils' ratio in UBE schools.

Table 3: Summary of t-test Analysis on the Opinions of UBE Personnel and Teachers Regarding Teachers–Pupils Ratio

Variable	NO	$\overline{X}$	SD	df	t-value	P	t-critical	Decision
UBE personnel	100	11.2400	2.5470	198	.644	.084	1.96	N/S
Teacher	100	11.0300	2.0323					Accepted

Source: Field work (2025) t-calculated value = .644 P=.084

The result in Table 3 shows that the significance level (p = .084) is greater than the alpha level (α = 0.05). Likewise, the calculated t-value (0.644) is less than the critical t-value (1.96) at 198 degrees of freedom. This implies that there is **no significant difference** between the opinions of teachers and UBE personnel regarding the teachers–pupils' ratio in UBE schools in Kaduna State. Therefore, **the null hypothesis is accepted**. This finding confirms that both groups hold similar views concerning the teachers–pupils' ratio.

Hypothesis 2

There is no significant difference between the opinions of UBE personnel and teachers on the provision of infrastructural facilities in UBE programme in Kaduna State.

This hypothesis was formulated to determine whether a significant difference exists between the views of UBE personnel and teachers concerning the adequacy of instructional materials provided for UBE Programme implementation in Kaduna State.

Table 4: Summary of t-test analysis of the opinions of both groups regarding the adequacy of teaching and learning facilities for UBE Programme in the state.

Variable	NO	$\overline{X}$	SD	df	t-value	P	t-critical	Decision
UBE personnel	100	14.1100	3.5044	198	.840	0.68	1.96	N/S
Teacher	100	13.7400	2.6728					Accepted

Source: Field work (2025), T – calculated = .840 P=0.68

The table above observed significant level (P) of 0.68 which is greater or higher than (a) = 0.05. The t – calculated of .840 is lower than the t – critical of 1.96 at 198 degrees of freedom (df). This explains that there is no significant difference between the opinions of UBE personnel and teachers on the adequacy of instructional materials of UBE programmes in Kaduna State. Thus, the null hypothesis is retained.

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✉ steveawamim@gmail.com
Educational Foundations Department, Faculty of Education, Federal University of Education, Zaria.

DISCUSSION OF FINDINGS

Teachers-Pupils Ratio and UBE Performance

The data indicates that both UBE personnel and teachers perceive the classroom environment as congested, with low mean scores (around 1.10–1.22), reflecting agreement that the high number of pupils impacts effective classroom management. They also agree that the current ratio negatively affects learning outcomes and that smaller pupil-teacher ratios would enable better attention and engagement. Both groups concur that the ratio influences pupil engagement positively, highlighting a shared understanding of the challenges posed by overcrowded classrooms. The perception of congestion and its negative impact suggests a need to address teacher-pupil ratios to improve classroom management and learning outcomes.

Provisions of Infrastructural Facilities and UBE Performance

Respondents agree that facilities such as classrooms, laboratories, libraries, and technology are generally available, with mean scores indicating moderate agreement (around 2.12–2.96). However, there is scepticism about the functionality of technological facilities, with responses indicating these may not be fully operational or effective, highlighting a gap between availability and usability. Facilities need to be functional and well-maintained to truly support effective teaching and learning.

Summary of Major Findings

Based on the data collected, analysed, and reviewed alongside relevant literature, the major findings are as follows:

1. Teachers-Pupils Ratio: Both UBE personnel and teachers perceive classrooms as overcrowded, negatively affecting classroom management and learning outcomes. They agree that reducing pupil-teacher ratios would improve student engagement, indicating a shared concern that needs addressing.

2. Facilities & Resources: Facilities like classrooms, labs, and libraries are mostly available, but their functionality, especially technological tools, is questionable. Maintenance and operational status are crucial for supporting effective education.

3. Hypothesis 1: No significant difference exists between the opinions of personnel and teachers regarding the teachers-pupils ratio in the performance of UBE programme in Kaduna State. The t-test yielded a t-value of 0.664, which is less than the critical value of 1.96 at 198 degrees of freedom, leading to the acceptance of the null hypothesis. This indicates no significant difference in their opinions on programme performance.

4. Hypothesis 2: No significant difference exists concerning the provision of instructional facilities. The t-value of 0.840 supports retaining the null hypothesis, indicating agreement on facilities provision.

CONCLUSION

The appraisal of the UBE program's implementation in Kaduna State reveals that human and material resources are critical factors influencing success. The study identified significant inadequacies in these resources, which pose constraints to effective program delivery. To improve implementation, relevant authorities should prioritize providing necessary infrastructure, resources, and qualified manpower. Addressing these issues will facilitate the achievement of the programmes set goals. The data collectively highlights a shared acknowledgment among UBE personnel and teachers of certain strengths (like accessibility and retraining efforts) but also emphasizes critical areas needing improvement, such as infrastructural quality, teacher-pupil ratios, and teacher motivation. Addressing these issues holistically can lead to enhanced UBE program performance and better student outcomes.

Corresponding author: Stephen Awamim Ledawo
✉ *steveawamim@gmail.com*
Educational Foundations Department, Faculty of Education, Federal University of Education, Zaria.

RECOMMENDATIONS

Based on the findings, the following recommendations are proposed:

1. Reduce Pupil-Teacher Ratios: Implement policies to recruit and deploy more teachers to ensure smaller class sizes, thereby enhancing classroom management and student engagement.
2. Improve Facility Functionality: Ensure that existing facilities, especially technological resources, are properly maintained, operational, and updated to support effective teaching and learning activities.

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Corresponding author: Stephen Awamim Ledawo
✉ *steveawamim@gmail.com*
Educational Foundations Department, Faculty of Education, Federal University of Education, Zaria.