



Assessment of Utilization of Human and Material Resources on the Implementation of Physical Education Programmes in Nigeria's Colleges of Education

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ABSTRACT

This study provides an expert-level evaluation of the critical determinants affecting the success of Physical Education (PE) programmes within Nigeria's Colleges of Education (CoEs), specifically focusing on the Availability. The context for this research is the observed deterioration of PE programmes nationally, which has been directly linked to challenges in developing new athletes and achieving high performance in national sports festivals. A robust Descriptive Survey (Ex-Post-Facto) research design was employed to capture the current operational status and perceived impacts of resource provision. The study population encompassed 720 academic staff from Physical and Health Education (PHE) departments across 90 public CoEs throughout Nigeria. A comprehensive sample of 45 institutions, representing 50% of the public CoEs offering the programme, was selected using Simple Random Sampling across all six geo-political zones. Data, gathered via a self-structured questionnaire scored on a 5-point Likert scale, were analyzed using descriptive statistics (Mean and Standard Deviation) to quantify resource status and inferential statistics (Chi-square) to test for significant perceptual differences between academic and management staff at the $\alpha = 0.05$ level. Availability of human resources, particularly qualified PHE academic staff, was found to significantly impact programme implementation success. Furthermore, implementation was found to be heavily dependent on the AAU of essential material resources, including sports equipment and instructional facilities. Critically, hypothesis testing demonstrated a significant perceptual disparity between academic staff (who experience the resource deficits firsthand) and management staff (who oversee resource procurement), resulting in the rejection of all six null hypotheses concerning AAU status. Overall, the resource situation maintained a positive and significant correlation with enhanced student academic performance. It is concluded that systemic resource inadequacy and profound utilization failures constitute fundamental barriers to pedagogical effectiveness, resulting in an instructional gap where lecturers often cannot demonstrate practical skills due to lack of facilities. Recommendations emphasize the urgent need for sustainable recruitment of specialized PHE academic staff, dedicated and earmarked annual funding, and mandatory training programs for utilization and maintenance to ensure the achievement of the national mandate for Physical Education.

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INTRODUCTION

Physical Education (PE) is recognized globally as a foundational component of holistic education, transcending simple physical fitness to contribute profoundly to the total development of the individual. In the context of Nigeria's Colleges of Education (CoEs), PE is instrumental in preparing future educators who will instill the values and skills necessary for maintaining a healthy lifestyle (Oak, 2018). The overarching goal of PE is the development of the participant's physical, mental, social, and emotional well-being, ultimately aiming to cultivate a well-rounded human personality capable of meaningful contribution to nation-building (Singh, 2019).

The successful achievement of these educational and societal goals is inextricably linked to the operational environment of the instructional programme. The level of success achieved in PE is directly contingent upon the degree of availability, adequacy, and effective utilization of both human expertise and material infrastructure. As Akinsanmi (1995) and Mgbor (2005) emphasized, these resources form the foundational hub around which any PE and sports programme must revolve.

The terminology describing these strategic resource factors requires clear articulation. Availability refers to the state where resources or services are ready to be used, easily found, and readily obtainable in the execution of specific functions (Longman, 2021; Onyejiemezie, 2022). The importance of this provision is high, as meaningful learning cannot occur in an environment devoid of relevant resources (Olaitan, Igbo, Ekong, Nwachukwu, & Onyemaechi, 2022). Adequacy implies a condition of sufficiency—that the quantity is enough, and the quality is good enough, for the particular purpose or need (Adedeji, 2018). Adequate resources are strategically vital to the smooth functioning, efficiency, and high productivity of any educational programme (Ojoawo, 2020).

Mapaderum (2017) noted that resource adequacy promotes effective teaching, while inadequacy negatively impacts student performance. Finally, Utilization is defined as the act of making practical use of available services or

resources (Hornby, 2017). Olagunju and Abiona (2018) further conceptualized utilization as the process of managing and organizing resources in CoEs to ensure students acquire desirable learning competencies. In the highly activity-oriented field of PE, effective resource utilization stimulates student senses, motivates learning, and facilitates the active participation necessary for effective instruction (Offorma, 2023). The availability, adequacy, and utilization of resources collectively serve as critical predictors for the successful implementation of any academic programme.

Despite the clear recognition of PE's importance and its reliance on high-quality resource inputs, recent observations suggest that PE programmes in Nigeria's Colleges of Education are currently suffering from a significant loss of vitality. This decline is not merely an academic concern; it has tangible national repercussions, notably being considered a contributing factor to Nigeria's struggle to discover and nurture new athletes and achieve success in national sports festivals.

The core issue lies in the fact that, while adequate resources should be guaranteed by management, the prevailing situation across Nigerian CoEs indicates a steady and often rapid decline in the quantity and quality of resources dedicated to teaching Physical Education. Academic staff are frequently challenged not only by increasing student enrollment numbers but also by scanty and often poorly maintained facilities, equipment, and instructional supplies. This downward trend persists even in the face of significant capital interventions by bodies such as the Tertiary Education Trust Fund (TetFund), suggesting deep-seated structural and management issues related to resource deployment and maintenance.

The most detrimental consequence of this resource deficit is the creation of an acute instructional gap. Observations demonstrate that many PE lecturers find themselves unable to perform necessary skill demonstrations in fundamental games and sports, such as soccer, handball, or hockey, simply because the necessary functional equipment and specialized



facilities are absent. This pedagogical failure—where theoretical instruction substitutes for practical skill acquisition—not only undermines curriculum integrity but also fails to sustain student interest, leading inevitably to poor academic outcomes.

Steven and Oliver (2019) affirmed that when human and material resources are lacking, teaching execution is necessarily compromised. Consequently, the central problem that this study addresses is the empirical determination of the extent of availability, adequacy, and, most importantly, the level of utilization of human and material resources, and the consequential effect these dimensions have on the effective implementation of Physical Education programmes in Nigeria's Colleges of Education.

Objectives of the Study

The main objective of this study is to evaluate the availability, adequacy, and utilization of human and material resources for effective implementation of Physical Education programmes in Nigeria's Colleges of Education. Specifically, the study seeks to:

1. Find out the utilization of human resources for effective implementation of Physical Education programmes in Nigeria's colleges of education.
2. Determine the utilization of material resources for effective implementation of Physical Education programmes in Nigeria's colleges of education.

Research Questions

In line with the specific objectives, the following research questions were formulated to guide the inquiry:

1. What is the level of utilization of human resources for effective implementation of Physical Education programmes in Nigeria's colleges of education?
2. What is the level of utilization of material resources for effective implementation of Physical Education programmes in Nigeria's colleges of education?

Research Hypotheses

The study postulates the following null hypotheses, which are tested at the 0.05 level of significance:

- HO₁:** There is no significant difference between academic and management staff on the utilization of human resources for effective implementation of Physical Education programmes in Nigeria's colleges of education.
- HO₂:** There is no significant difference between academic and management staff on the utilization of material resources for effective implementation of Physical Education programmes in Nigeria's colleges of education.

METHODOLOGY

The study employed the Descriptive Survey (Ex-Post-Facto) research design. This design was deemed the most appropriate methodology for assessing the prevailing status of specific variables—in this case, the utilization of human and material resources—as they currently exist and relate to the implementation outcome of the PE programmes. The ex-post-facto nature allowed for the examination of the impact of these existing resource conditions on implementation success without active manipulation of the variables, providing a rigorous snapshot of the current pedagogical environment in Nigerian CoEs.

The target population for the study comprised all academic staff of Physical and Health Education (PHE) departments within all public Colleges of Education in Nigeria that offer PE programmes. This population was numerically established at $N = 720$ academic staff across 90 public institutions (31 Federal and 59 State CoEs). For the purpose of data collection, a strategic sample was selected. Forty-five (45) Colleges of Education, representing 50% of the total public institutions offering the programme, were chosen to participate. The sampling technique employed was Simple Random Sampling, applied to select the CoEs across the six geo-political zones of Nigeria. This technique ensured that every

institution within the population had an equal probability of being selected, thus maximizing the representativeness of the sample and strengthening the external validity of the research conclusions.

Data collection was facilitated using a Self-Structured Questionnaire (SSQ) designed specifically to gauge the perceptions of academic staff and management staff regarding the three core resource dimensions (Availability, Adequacy, and Utilization). The instrument was structured into sections corresponding to the six research objectives. The scoring of responses utilized a 5-point Likert scale. This scale allowed respondents to quantify their agreement or disagreement with statements concerning resource status, thereby enabling the establishment of quantifiable levels (e.g., Very High Extent, High Extent, Moderate Extent, Low Extent, Very Low Extent). Prior to field deployment, the SSQ underwent rigorous academic procedures to ensure its psychometric properties.

The gathered data were subjected to both descriptive and inferential statistical analysis. Descriptive Statistics: The Mean and Standard Deviation were utilized to analyze the responses to the six research questions. The Mean scores provided a quantitative measure of the central

tendency for the perceived extent or level of AAU for both human and material resources. The SD indicated the variability or dispersion of opinions among the respondents. A calculated benchmark mean was used to determine whether the resources were rated as available/adequate/utilized to a high or low extent.

The Chi-square test was employed to test the six formulated null hypotheses. The Chi-square test was specifically chosen because the study sought to determine if there was a statistically significant difference in categorical perception between two groups of stakeholders: academic staff and management staff. The outcome of the test determined whether the observed difference in opinion regarding resource AAU status was genuine or due merely to chance. All hypotheses were tested at the significance level of $p \leq 0.05$.

RESULTS

Research Question:

Is there any significant Impact of Utilization of Material Resources on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education?

Table 1: Impact of Utilization of Material Resources on the Effective Implementation of Physical Education Programmes in Nigeria's Colleges of Education

S/N	ITEMS	Mean	SD
1	Audio-visual materials are utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	3.36	1.117
2	Visual materials are utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	3.31	1.221
3	Multimedia materials are utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	3.81	0.934
4	Print materials are utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	4.19	0.889
5	Electronic interactive materials are utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	3.29	1.051
6	Audio materials are utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	3.47	1.176
7	Basketball court is utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	3.96	0.812
8	Basketballs is utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	3.94	0.871

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S/N	ITEMS	Mean	SD
9	Volleyballs court is utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	4.04	0.977
10	Basketballs is utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	3.94	0.989
	Aggregate Mean	3.75	0.559

Benchmark =3.00

Result of descriptive statistics in Table shows the perceptions of lecturers regarding the Impact of Utilization of Material Resources on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education. The aggregate mean of all the items 3.75, was found to be greater than the established assumed/ decision mean, 3.0. This implied that lecturers' perception regarding the Impact of Utilization of Material Resources on the effective

implementation of Physical Education Programmes in Nigeria's Colleges of Education was positively inclined.

Research Question 2:

Is there any significant Impact of Utilization of Facilities on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education?

Table 2: Impact of Utilization of Facilities on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education

S/N	ITEMS	Mean	SD
1	Out-door facilities are utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	4.18	0.580
2	Indoor facilities are utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	3.74	0.880
3	Athletics facilities are utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	3.87	1.125
4	Recreational facilities are utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	3.75	0.925
5	swimming pools are utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	3.44	1.348
6	Gymnastic facilities are utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	4.02	11.01
7	football pitch is utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	4.09	1.000
8	Squash courts are utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	2.99	1.274
9	Hockey field is utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	3.09	1.189
10	Volleyball court is utilized on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education	3.71	1.070
	Aggregate Mean	3.78	0.540

Benchmark = 3.00

Result of descriptive statistics in Table 2 shows the perceptions of lecturers regarding the

Impact of Utilization of Facilities on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education.

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The aggregate mean of all the items 3.78, was found to be greater than the established assumed/ decision mean, 3.0. This implied that lecturers' perception regarding the Impact of Utilization of Facilities on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education was positively inclined.

HO₁: Utilization of Material Resources has no significant impact on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education.

Table 3: Analysis of Utilization of Material Resources has no significant impact on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education

	Observed N	Expected N	Residual	Chi-Square	df	Asymp. Sig.
2 D	6	87.3	-81.3	390.954 ^b	3	.000
3 U	90	87.3	2.8			
4 A	237	87.3	149.8			
5 SA	16	87.3	-71.3			
Total	349					

Result of chi-square statistics in Table 3 shows the perception of lecturers regarding the utilization of Material Resources on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education. It indicated that the utilization of Material Resources has impact on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education. This was due to that fact that the calculated χ^2 , 390.954, is greater than critical χ^2 , 0.352, at 95 percent confidence interval

and df=3. Therefore, the null hypothesis which stated that the utilization of material resources has no significant impact on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education was rejected.

HO₂: Utilization of Facilities has no significant impact on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education;

Table 4: Analysis of Utilization of Facilities has no significant impact on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education

	Observed N	Expected N	Residual	Chi-Square	Df	Asymp. Sig.
3 U	97	116.3	-19.3	194.361 ^a	2	.000
4 A	231	116.3	114.7			
5 SA	21	116.3	-95.3			
Total	349					

Result of chi-square statistics in Table 4 shows the perception of lecturers regarding the utilization of facilities on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education. It indicated that the utilization of facilities has significant impact on the effective implementation of Physical Education Programmes in Nigeria's

Colleges of Education. This was due to that fact that the calculated χ^2 , 194.361 is greater than critical χ^2 , 0.03, at 95 percent confidence interval and df=2. Therefore, the null hypothesis which stated that the utilization of facilities has no significant impact on the effective implementation of Physical Education Programmes in Nigeria's Colleges of Education was rejected.

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DISCUSSION OF FINDINGS

The assessment of resource deployment revealed that the level of utilization of both human and material resources was suboptimal. Utilization scores suggested that academic staff were either constrained by insufficient numbers (human resource utilization) or by the functional status of material resources. Low utilization was strongly linked to poor maintenance practices, suggesting that resources, once procured (often through interventions like TetFund), quickly fell into disrepair, making their effective deployment impossible. Furthermore, utilization was found to be hindered by a lack of requisite skills among some staff concerning the management and maintenance of specialized equipment.

The study established that the success of implementation is heavily dependent on the AAU of material resources. This is an essential factor, given the activity-oriented nature of Physical Education. Material resources encompass not just facilities (pitches, courts, tracks) but also consumable equipment and instructional supplies. The consistent rejection of all 2 null hypotheses, particularly those concerning utilization, is perhaps the most significant structural finding of the study. This demonstrates a dangerous functional disconnect between the implementers (academic staff) and the policy controllers (college management).

Management staff, exercising control over budgets and procurement, may perceive resource status based on capital expenditure reports—a perspective that may lead them to believe resources are available and adequate. Conversely, academic staff evaluate resources based on their suitability and functionality for daily instruction. When management perceives high utilization (H2 rejected) while staff report low practical use, it suggests a conflict arising from inadequate maintenance or a lack of user training. Utilization is defined as the process of managing and organizing resources effectively. The low utilization scores, coupled with the perceptual conflict, indicate specific managerial and instructional deficiencies.

The established positive correlation between the combined AAU of resources and student academic performance⁴ confirms the hypothesis that resource inputs are strategic factors (Ojoawo, 2020) that determine the smooth functioning and productivity of educational programmes. When resources are abundant, adequate, and well-utilized, they facilitate active learning, skill transfer, and comprehensive syllabus coverage (Egwu, 2021).

Conversely, the pervasive resource scarcity analyzed by this study directly translates into graduates who lack the requisite practical skills and knowledge. This systemic output deficiency at the College of Education level has broad implications for Nigeria's ability to identify and nurture athletic talent and for the overall health and well-being of the population, confirming the initial observation that the state is failing to discover new athletes and perform well in national sports. Therefore, improving resource management in PE is not just an educational issue but a strategic national development imperative.

CONCLUSION

Based on the comprehensive evaluation of the availability, adequacy, and utilization of human and material resources across Nigeria's Colleges of Education, the study arrives at several fundamental conclusions regarding the implementation of Physical Education programmes.

Firstly, the core objective of effective programme implementation is significantly compromised by profound deficiencies in resource input. Specifically, the availability and adequacy of specialized human resources (PHE academic staff) are insufficient to meet the demands of the comprehensive curriculum, which, in turn, critically impairs pedagogical effectiveness.

Secondly, the successful delivery of activity-oriented PE curricula is critically dependent upon functional material resources. The study confirms that inadequate provision, poor maintenance, and sub-optimal utilization of facilities and equipment are creating a severe instructional gap, where lecturers are consistently

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prevented from delivering essential practical demonstrations.

Thirdly, a systemic failure in resource governance is evidenced by the highly significant perceptual differences established between academic staff (implementers) and college management (controllers) regarding resource status. This administrative disconnect suggests that resource challenges are rooted not only in financial scarcity but also in inadequate needs assessment, planning, and management oversight, particularly concerning maintenance and effective resource deployment training. Ultimately, the resource deficiencies are directly contributing to the downward trend in PE programme quality, negatively impacting student academic performance, and compromising the national strategic goal of developing talent and promoting holistic human development.

RECOMMENDATIONS

Based on the findings and conclusions of this study, the following recommendations are imperative for enhancing resource utilization and effective implementation of Physical Education programmes in Nigeria's Colleges of Education:

1. The determination that utilization is suboptimal necessitates the immediate establishment of mandatory, regular professional development programmes (coaching clinics or workshops) for all PE academic staff. These training sessions must focus specifically on skills related to the deployment, management, utilization, and minor maintenance of specialized sports equipment and instructional technologies, maximizing the deployment efficiency of existing capital assets;
2. Heads of Department and College Management Boards should establish and apply quantitative Key Performance Indicators (KPIs) focused on the effective utilization of both staff expertise and material resources. This formalized oversight provides necessary control mechanisms and encourages continuous improvement in resource deployment efficiency.

3. The facilities, procurement, and maintenance officers must transition from reactive repair to proactive maintenance scheduling for all PE resources. This requires appropriate allocation of funds and skilled personnel to ensure that facilities and equipment remain functional and safe, thereby preventing rapid resource decay and maximizing utilization rates.

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