

Management of Educational Materials for Instruction, Delivery, and Integration as a Component of Effective Learning: Tertiary Education in Nigerian School Administration

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Abstract:

The largest business in Nigeria is education, which is examined in this article as an investment. Three questions were formulated and addressed. Three hypotheses were developed and put to the test at significance level of 0.05. There are forty-two people in the study's population. There are still 42 people in the study's sample. This is due to the population size's manageability. The t-test statistics were used to test the null hypotheses, and the mean was used to answer the study questions. According to the study's findings, all 50 questions on organizing, planning, managing, and coordinating were deemed necessary by participants for the efficient use of material resources in higher education. The findings of the tests of the null hypotheses showed that the respondents'

mean answers about the planning, organizing, controlling, and coordinating techniques for effective material resource management did not differ significantly efficient instruction and learning in higher education. The study suggested that in order to improve lecturers' and instructors' understanding of material resource management, the government, through the ministry of education, should host workshops based on the study's findings. Additionally, the state's educational administrators should make sure that lecturers are competent in organizing, planning, managing, and coordinating the use of resources in the state's higher education system. To boost their effectiveness in higher education, school administrators should be urged to create strategies for wise material resource management.

Keywords: teacher, school system, quality education, tertiary education, management, effective teaching, and material resources.

1. Overview

Without a doubt, education is a helpful tool that society can employ to accomplish her needs and goals. It unquestionably has a positive impact on poverty reduction and economic progress. The four main goals of tertiary education are to: - Develop human capital (mainly through instruction); - Build knowledge bases (mainly through research and knowledge development); - Disseminate and use knowledge (mainly through interactions with knowledge users); and - Maintain knowledge (intergenerational storage and transmission of knowledge). These goals help tertiary education contribute to social and economic development. Higher education is a frequent term used to describe the tertiary education or institution. All tertiary-level planned learning activities are included in higher education. Universities, colleges of education, polytechnics, and monotechnic are all considered higher education according to the Nigerian National Policy on Education (2019). The Nigerian National Policy on Education said that the following were the main goals of higher education:

- a) To support national growth by means of high-level appropriate training for personnel.
- b) To cultivate and instill moral principles necessary for both individual and societal survival.
- c) To enhance a person's intellectual capacity to comprehend and value their immediate and distant surroundings.
- d) To develop intellectual and physical abilities that will help people become independent and contribute to society.
- e) To support and encourage community service and scholarship.
- f) To establish and strengthen national cohesion; and
- g) To encourage communication and understanding on a national and worldwide level. In Nigeria, universities, colleges of education, and polytechnics are essentially considered to be the same as higher education.

Currently, the nation's higher education is offered by both private citizens and government agencies, including the federal government, state governments, and religious institutions Ajiteru (2022). A school is an establishment created to help pupils change their attitudes and learn under the guidance of teachers. It is a location or educational establishment created with the intention of educating people (Musgrave, 2018). There are formal education systems in almost every nation, and they are all required. According to Sulaiman (2020), a school system is an establishment that has the facilities and tools necessary to offer instruction to students in kindergarten through high school. Any school system's main objective is to improve the standard of living for its constituents and supply society with the workforce it needs for growth. There are now a remarkably large number of

schools in practically every community across the country as a result of the democratization of education Nigerians can attend primary, secondary, or both types of schools, and some have higher institutions that are known for providing pertinent knowledge (Abalaka, 2023).

2. Problem Description

There are still issues with resource management, even with the government's and non-governmental organizations' best efforts to provide educational materials and resources. Certain tertiary education administrations are deficient in administrative techniques for overseeing the resources and materials used in instruction. In the provision of postsecondary education, the efficient administration of material resources for teaching and learning has been hampered by a lack of control, appropriate planning, organizational abilities, and coordination skills.

3. The Study's Goal

The primary goal of the research is to investigate how to manage material resources for efficient instruction and Education in Nigeria Implications for the delivery of high-quality postsecondary education. The particular goals are to:

1. Determine the planning techniques required for effective material resource management in tertiary education teaching and learning.
2. Look at the organizational techniques that will support the efficient use of material resources for tertiary education's teaching and learning.
3. Identify the regulating techniques required for appropriate material resource management for successful teaching and learning in postsecondary education.

4. Questions for Research

The following research questions were addressed by the study.

1. What planning techniques are required for effective material resource management in tertiary education teaching and learning?
2. What are the organizational techniques that will support efficient material resource management educating and learning?
3. What are the regulating techniques required for appropriate material resource management for successful tertiary teaching and learning?

5. Hypotheses

The investigation was guided by the following null hypotheses, which were assessed at the 0.05 level of significance.

H_01 : The mean answers of lecturers and higher education instructors about the planning abilities required for effective material resource management do not differ significantly.

H_02 : The mean replies of lecturers and higher education instructors about the organizational abilities that will aid in the management of material resources for effective teaching and learning in tertiary education do not significantly differ from one another.

H_03 : The mean replies of lecturers and instructors on the controlled variables do not differ significantly abilities required to effectively handle material resources for instruction and learning in higher education.

6. Conceptual Structure

i. Tertiary Education in Nigeria

The Federal Government of Nigeria (2014) classified postsecondary education as including universities, colleges of education, polytechnics, and monotechnic in its current National Policy on Education. The Nigerian National Policy on Education said that the following were the main goals of higher education:

- a) To support national development by providing highly qualified, pertinent manpower training.
- b) To cultivate and instill moral principles necessary for both individual and societal survival.
- c) To develop the intellectual capability of individual to understand and appreciate their local and external environment.
- d) To develop the mental and physical abilities necessary to become self-sufficient and valuable contributors to the community.
- e) To support and encourage community service and scholarship.
- f) To establish and strengthen national cohesion; and
- g) To encourage communication and understanding on a national and worldwide level.

In Nigeria, universities, colleges of education, and polytechnics are essentially considered to be the same as higher education. Currently, the nation's higher education is offered by both private citizens and government agencies, including the federal government, state governments, and religious institutions. Higher education's significance and reach have evolved dramatically. Tertiary education, often known as higher education, took place in universities more than 40 years ago (Abalaka, 2023).

ii. Educational Materials for Postsecondary Education

To help youngsters better understand concepts, instructional materials are necessary (Caples, 2016). Resources for instruction are the fundamental elements of instruction at all educational levels, but particularly in higher education. When students see and handle the actual object, they are better able to comprehend what is being taught. Ajiteru (2022). By offering a range of first-hand, developmentally appropriate experiences and assisting students in gaining symbolic knowledge by portraying their experiences, the materials resources give students the chance to both expand and deepen their knowledge. Sulaiman (2020). A visual presentation of an idea or concept utilizing pictures, charts, and models aids students in creating mental images of the subject the lecturer is discussing, claims Croft (2020). The accomplishment of educational objectives is greatly aided by material resource management, which maximizes profitability through efficient and effective use of it. Abalaka (2023) asserts that efficient and successful material functions raise school profitability, boost performance, and result in a considerable decrease in the overall cost of materials.

iii. The idea of resource management for school materials

The idea behind material management is the potential benefits of managing the movement of goods and materials from suppliers through retail, production, and shipping. Thus, purchasing, stores, inventory control, production scheduling, and physical distribution would all be included in the total control. Material resource management in schools is a specific activity of school administration to generate beneficial end outcomes, according to UNESCO (2014). In higher education, the tangible resources include teaching items like writing supplies, classrooms, the school's playground, tables, seats, boards, books, and other indoor and outdoor sporting activities. In higher education, material resources management entails a concerted effort to efficiently manage the school's available material resources in order to support learning by meticulous planning, organizing, regulating, and assessing such resources. According to Ajiteru (2021), equipment, buildings, funds, and instructional materials are among the material resources needed in higher education.

iv. Preservation of Educational Resources

Depending on funding availability, the school administrator is frequently tasked for maintaining and replacing the majority of the school's facilities. According to Sulaiman (2018), managing material resources is just as crucial as managing human resources. Resources in material form in

higher education tend to depreciate as soon as they are provided and put into use. Therefore, there is need for maintenance through repair and servicing of components in order to restore their physical condition and sustain their working capacity. Maintenance of the material resources by school administrators in the tertiary education setting enhances performance and durability of the materials for teaching the students. The maintenance of the material resources according to Adeboyeje (2020) are preventive, corrective, breakdown and shutdown maintenance services. Preventive maintenance occurs regularly by checking and rechecking the available material resource use for educational purposes Ajiteru, (2022).

v. Skills for Material Resource Management.

Tarig (2024) defines management as the process of organizing work activities to be carried out effectively and efficiently with and through people. He continued by stating that management is the process of organizing, planning, guiding, and regulating every aspect of the company's operations in order to achieve pre-established goals. Planning, organizing, leading or inspiring, coordinating, and controlling are among the managerial functions mentioned by Davis (2021).

7. The idea of school administration.

The idea of school administration has been developed from a variety of angles and is a topic of general concern. School administration, as defined by NOUN (2019), is a social activity that aims to recognize, preserve, stimulate, govern, and unite formally and informally organized human and material energies within an interpretive system. However, according to Okendu (2019), school administration encompasses all of the procedures used in educational establishments to mobilize resources in order to achieve educational objectives. It is the process of directing school resources to meet desired learning objectives. In order to ensure effective management of the general operations of the school and achieve educational results, school administration is a process that calls for knowledge and training in educational concepts and practices. According to Abalaka (2023), school administration consists of managing school resources and facilitating the implementation of programs in order to accomplish school goals. School administration is the area of pedagogy that examines how schools are run and identifies the unique aspects of the educational system. management, and examines the particular issues that arise with setting up such a system. Sulaiman (2020) summarizes school administration as management, curriculum and teaching administration, pastoral care, discipline, assessment, evaluation, and examination, resource allocation, costing and forward planning, staff appraisal, community relations, and the application of practices essential to the organization's survival, including decision-making, negotiation, bargaining, communication, conflict resolution, meeting management, and so forth.

A. Fundamentals of School Management

According to NOUN (2014), school administration is governed by a number of principles, some of which are listed below:

The goal of school management must be to establish a community of students who are efficient, attentive, and in good physical and mental health, and whose actions are socially acceptable.

The school needs to be run in a manner that fosters teamwork among teaching and non-teaching personnel. Every student should receive support to help them discover their unique talents and make the biggest possible contribution to the school's advancement.

When making choices on school rules, regulations, and programs, an effective school administration requires that both staff and students play a significant role. Everyone should be involved in the operation of the school through staff meetings, committees, and organizations of student representative clubs; therefore, appropriate delegation of authority and responsibility must prevail in school management.

Decisions and practices made by school administrators must align with the school's core values. These selections should always be made with the school's goals in mind. School administration should encourage and provide for the professional growth of teachers through planned educational seminars, conferences and in-service education.

School head and his staff must always keep the ministry of education, school boards and the general public fully informed of the policies, programmes, failures and successes of the school.

B. Type of School Administrators:

Depending on the type of school, there are various types of school administration. According to NOUN (2018), there are three main categories of educational administrators in Nigeria, which are discussed below:

(i) Local School/Primary Administrators:

This group consists of school heads and their assistants at the local level. School administration is the primary governing body of the school and plays a major role in making decisions related to students, facilities, and the overall status of the school. They should also support and facilitate the professional development of teachers through planned educational seminars, conferences, and in-service training the educational institution. They are Education Officers and the Local Inspectorate of Education (LIE), who keep an eye on the activities of elementary and secondary school instructors. While education officers in state and federal ministries of education keep an eye on activities at secondary schools, teacher training programs, and technical colleges, the LIE keeps an eye on activities at elementary schools.

(iii) Higher Education Institution Officials

Chief executives from higher education institutions, such as universities, polytechnics, and colleges of education, make up this group. They go by the titles of Vice-Chancellor at the Universities, Provost at the College of Education, and Rectors at the Polytechnic. With the exception of privately owned institutions, they are chosen by the owner, which is typically the government. Their Deputies help them as well.

8. Issues Concerning the Availability and Use of Resources in Administration of Schools.

A thorough analysis of Nigeria's educational system identifies a number of issues that have plagued it and prevented it from reaching its ambitious objectives: According to NOUN (2019), the following are some enduring issues with the availability and use of resources in Nigerian schools:

(i) Insufficient Funds

This might explain why academic institution administrators do poorly. Funds have consistently been insufficient at all levels of Nigerian institutions, resulting in a discrepancy between the actual achievement and the anticipated level. Other resources must be purchased, secured, and maintained with funds; if there is not a sufficient supply, productivity suffers. According to this reasoning, the

government and private citizens ought to give the education sector and its management top priority, particularly in the financial sector in order to cover their capital and ongoing costs.

(ii) Concerns about politics

Politicians' priorities are not focused on the system since they have stolen funding meant for education. The system was inefficient as a result of this. The level of care that current political leaders have for the educational system determines the amount and quality of resources that are allocated to it. Over time, Nigeria's educational sector has suffered due to the "Kick-back" scenario that predominates in political leaders' approval of allocation.

(iii) Abuse of School Property

Staff members may purposefully, carelessly, or owing to a lack of technical expertise abuse the school's physical and material resources. Overuse and neglect may also be present of school infrastructure as a result of poor planning.

(iv) Ineffective Leadership

According to Ajiteru (2021), certain administrators of institutions are not exempt from corrupt practices and poor financial management. Such actions are frequently the result of the desire and inclination to get wealthy. Management issues related to resource availability and use include theft of school property, poor maintenance, and improper inventory.

(v) Poor school administration

Because of their inexperience, some school administrators are unable to demand complete leadership responsiveness from their subordinates. Such a leader encourages unprofessional behavior in the school by letting subordinates behave as they like. No one is held accountable for damage to school property because the leadership style does not place a strong emphasis on checks and balances.

9. A Workable Solution to the Issues Found

To improve the efficiency of using the resources that are available, school administrators should be encouraged to adopt methods of sensible resource management.

Administrators and staff at all institutions should regularly participate in in-service training and refresher courses.

The amount and quality of resources (material, financial, and human) that the government provides to schools must be improved. By establishing a resource allocation criterion that would sufficiently support schools, the government should also try to close the significant gap in the resources available to educational institutions.

Every member of the school staff should adopt a positive outlook when using the physical resources made available to them.

various tiers of government, school officials, and Planners should launch specific initiatives to raise awareness of the value and necessity of maintaining and properly using school resources, most likely through special appeals or the media.

Frequent oversight will improve the early identification of any issue pertaining to the resources at hand and avert facility failure. It will also make it possible to maintain and use the facilities appropriately.

The outdated facilities should be replaced with more modern ones, and staff members should receive enough training on how to use them. They will be able to do their jobs more effectively and efficiently as a result.

10. Approach

A survey research design was used for the investigation. Since this study provided information on methods or abilities for managing material resources for efficient instruction, this design was appropriate in higher learning. The study was conducted in Nigeria's South-South states. Abia, Akwa Ibom, Delta, Edo, Bayelsa, River States, and Cross River are among the states. Higher education in these states was the subject of the study. 42 respondents (27 lecturers and 15 instructors) working in higher education in the South-South states made up the study's population. Information gathered from each school's personnel service unit served as the basis for the population. There was no sampling because the entire population was examined. Finding the variance of each item on the instrument as well as the variance of the total number of items in each part of the instrument allowed for the analysis of the collected data. The instrument's alpha coefficient was determined using the variances. The outcome is a The instrument's dependability coefficient was represented by the co-efficient of his value. The questionnaire was distributed and gathered by the researcher and five research assistants. To guarantee a high percentage return, the research assistants received training on how to deliver the questionnaire. The three research questions were answered using mean. The response categories were given numerical values ranging from strongly agree to strongly disagree (5-1) in order to calculate the mean. The response category's mean is 3. 2.50 is the lower limit and 3.50 is the higher limit. Consequently, those with a mean of 3.50 or above will be regarded as agreeing, while those with a mean of less than 3.50 will be regarded as disagreeing. This is due to the fact that the answer continuum's genuine lower limit for agreeing is 3.50. The theory was examined using the t-test with 40 degrees of freedom and a significance threshold of 0.05. When the t-calculated value was less than the t-table value, the null hypothesis was accepted; otherwise, it was rejected for items with t-calculated values greater than the table value.

11. Findings

First research question: What planning abilities are required for effective material resource management in education teaching and learning?

Table 1 shows the average answers from lecturers and instructors regarding the planning abilities required for effective material resource management in higher education teaching and learning.

Item		
<u>S/N</u>	<u>The planning strategies should involve</u>	<u>Remark</u>
1.	Providing adequate funds for the purchase of consumable materials and maintenance of existing facilities.	4.48 Agree
2.	Workshop facilities should be planned based on current students' enrolment Agree	3.57
3.	Adequate number of tools and equipment should be provided in the workshops and laboratories.	4.45 Agree
4.	Materials and equipment should be located appropriately in the classroom. Agree	4.31
5.	Equipment and tools should be planned based on the school curriculum. Agree	4.38

6.	Equipment, tools and materials used in teaching /learning of courses should be planned yearly.	4.21 Agree
7.	Shop stores should be provided for safety of consumables Agree	4.36
8.	Infrastructures should be located for convenience and safety. Agree	4.21
9.	Planning the workshop to cater for student's practical work in areas of Agree construction of appliances.	4.26
10.	Deciding the method of storage required for each material used in tertiary education.	4.02 Agree
11.	Material management committee should be set up to comprise of lecturers and instructors	4.33 Agree
12.	Borrower-loss replacement system should be adopted to check losses.	4.00 Agree
13.	Stores should be planned with adequate ventilation, illumination and artificial lighting	4.36 Agree
14.	Maintenance schedule should be developed for regular maintenance of tools and Agree machines	4.36
15.	Develop and operate within constraints of a budget. Agree	4.19

Table 1 above revealed that all items on planning skills were rated by the respondents with their means scores ranging from 3.37 to 4.48. This signifies that all the items on planning skills are effective in management of material resources for effective teaching/ education.

Research Question 2: *What are the organizational skills that will help in the management of material resources for effective teaching in tertiary education?*

Table 2: Mean responses of lecturers and instructors on organizing skills that will help in the management of material resources for effective teaching/learning in tertiary education.

Item	S/No	Organization of material resources should involve	x	Remark
16.	Equipment should be arranged to facilitate teaching and learning	4.33 Agree		
17.	Arrangement of tools and materials before and after use	Agree	4.33	
18.	Proper records of all the shop equipment and tools should be kept.	4.33 Agree		
19.	Tools and equipment should be used for activities they are designed for	Agree	4.36	

20.	There should be regular supervision of material inventories to check losses 4.43 Agree	
21.	Safety inspections should be conducted regularly and hazardous condition Agree corrected.	4.48
22.	Develop a procedure to ensure proper laboratory clean up. 4.21 Agree	
23.	Equipment in school workshop should be well arranged to enhance safety Agree efficiency, and learning.	4.24
24.	Procedures to facilitate storage, checkout, and security of tools and 4.24 Agree equipment should be developed	
25.	Work stations should be designate and equipping for each skill area such as 4.21 Agree installation, repairs, maintenance, design and construction.	
26.	Professional service person should be invited to make major equipment Agree repairs	4.33
27.	Storing the materials in a lockable cabinet Agree	4.07
28.	Minor repairs (predictive maintenance) of the facilities should be made to Agree avoid breakdown	4.38
29.	Equipment should be organized to facilitate movement of people in the Agree workshop	4.26
30.	Students should be grouped during practical to enhance mastery. Agree	4.19

Table 2 showed that all the 15 items on organizing skills had their mean scores between 4.07 to 4.48. This indicated that respondents agreed to all the items as important organizing skills for management of material resources for effective teaching/learning in tertiary education.

Research Question 3: *What are the controlling skills needed for proper management of material resources for effective teaching in tertiary education?*

Table 3: Mean responses of lecturers and instructors on controlling strategies needed for proper management of material resources for effective teaching in tertiary education.

Item		
<u>S/No</u>	<u>Controlling strategies should involve</u>	<u>Remark</u>
31.	Selecting, storing, and maintaining material for student use. Agree	4.26
32.	Promoting material and environmental safety by colour coding equipment, Agree marking safety zones, and posting appropriate safety signs.	4.38

33.	An identification system should be used to deter material theft. Agree	4.26
34.	Students should be guided in the use of appropriate tools, equipment and Agree	4.24
35.	machine in the school.	
36.	Lecturer and workshop staff should prepare directives for the use of Agree	4.31
37.	machines, tools and materials.	
38.	Maintaining a complete inventory of tools at the end of each class. Agree	4.21
39.	There should be a competent storekeeper who should be responsible for the Agree security of tools and equipment.	4.31
40.	Tool loan slips should be given to students and staff who want to borrow any Agree tool/equipment.	4.88
41.	Accurate inventory of materials in stock should be kept. Agree	4.31
42.	There should be adequate check to avoid careless loss of material due to Agree	4.31
43.	pilferation and vandalism.	
44.	Maintenance and storage material t should be well supervised. Agree	4.29

Table 3 indicated that all the 11 items on controlling strategies are needed in management of material resources for effective teaching/learning in tertiary education. All the items were rated agree with their mean scores ranging between 3.88 to 4.38.

Hypothesis 1: There is no significant difference in the mean responses of lecturers and instructors on the planning activities needed for proper management of material resources.

Table 4: T-test analysis of mean rating of respondents on planning skills needed for proper management of material resources for effective teaching in tertiary education.

S/ No	Planning Strategies	$\frac{N_1 = 27}{-2}$ x_{IS1}	$\frac{N_2 = 15}{-2}$ x_{2s2}	Lectur ers	Instr uctor s	t-cal	t- tab	Remark
1.	Providing adequate funds for the purchase of consumable materials and maintenance of existing facilities.	4.25	0.26	4.33	0.24	1.19	2.02	Not Significant
2.	Workshop facilities should	4.19	0.85	4.13	0.12	0.30	2.02	Not

	be planned based on current student' enrolment							Significant
3.	Adequate number of tools and equipment should be provided in the workshop and laboratories	4.52	0.26	4.40	0.26	0.73	20.2	Not Significant
4.	Materials and equipment should be located appropriately in the school	4.41	0.25	4.27	0.21	0.92	2.02	Not Significant
5.	Equipment and materials should be planned based on the curriculum.	4.52	0.26	4.27	0.21	1.64	2.02	Not Significant
6.	Equipment, tools and materials used in teaching/learning courses should be planned yearly.	4.52	0.26	4.47	0.41	0.26	2.02	Not Significant
7.	Shop stores should be provided for safety of consumables.	4.48	0.26	4.40	0.40	0.42	2.02	Not Significant
8.	Infrastructure should be located for convenience and safety.	4.26	0.43	4.33	0.24	- 0.39	2.02	Not Significant
9.	Planning the workshop to cater for students practical work in areas of construction of appliances.	4.30	0.29	4.33	0.24	- 0.18	2.02	Not Significant
10.	Deciding the method of storage required for each material used in the school.	4.19	0.55	4.00	0.14	1.10	2.02	Not Significant
11.	Material management committee should be set up to comprise of lecturers.	4.41	0.33	4.33	0.24	0.48	2.02	Not Significant
12.	Borrower –loss replacement system should be adopted to check losses.	4.19	0.29	3.60	1.11	2.03	2.02	Not Significant
13.	Stores should be planned with adequate ventilation, illumination and artificial lighting.	4.48	0.26	4.27	0.35	1.16	2.02	Not Significant
14.	Maintenance schedule should be developed for regular maintenance of materials.	4.52	0.26	4.33	0.38	1.02	2.02	Not Significant
15.	Develop and operate within constraints of a budget.	4.04	0.50	4.47	0.27	- 2.25	2.02	Not Significant

Overall, 4.38 0.32 4.26 0.36 0.63 2.02 NS

Degree of freedom = 40; prob of 0.05, t-table = 2.02.

The data presented on table 5 showed that of 15 items in the table, there was no significant difference on all the 15 items, while item 12 showed significant difference on the responses of lecturers and instructors. The overall t-cal for the table is 0.63, which is less than t-table value. Hence the null hypothesis was upheld.

Hypothesis 2: There is no significant difference in the mean responses of lecturers and instructors on the organization strategies that will help in management of material resources for effective teaching/learning in tertiary education

Table 5: T –test analysis on the mean responses of the respondents on the organization strategies for proper management of material resources.

16. Organizing strategies <u>N₁</u> <u>= 27</u>	<u>N₂=15</u> <u>-2 - 2</u> <u>x2s2</u> <u>1s1</u>	Lecturers	Instructors	t- cal	t-tab	Remark	
17. Equipment should be arranged to 4.41 facilitate teaching and learning.	0.25	4.27	0.21	0.92	2.02	Not Significant	
18. Arrangement of tools and materials 4.44 before and after use.	0.26	4.20	0.17	1.66	2.02	Not Significant	
19. Proper records of all the shop 4.48 equipment and tools should be kept.	0.26	4.27	0.21	1.37	2.02	Not Significant	
20. Tools and equipment should be used 4.44 for activities they are designed for.	0.26	4.27	0.21	1.11	2.02	Not Significant	
21. There should be regular supervision 4.41 of inventories to check losses	0.25	4.47	0.41	- 0.37	2.02	Not Significant	
22. Safety inspections should be 4.52 conducted regularly and hazardous condition corrected	0.26	4.47	0.27	0.30	2.02	Not Significant	
23. Develop a procedure to insure 4.30 proper laboratory clean up.	0.22	4.13	0.55	0.90	2.02	Not Significant	
24. Equipment in school workshop 4.41 should be well arrange to enhance safety, efficiency, and learning	0.25	4.33	0.24	0.50	2.02	Not Significant	
25. Procedures to facilitate storage, checkout, and security of tools and equipment should be developed.	4.30	0.22	4.13	0.41	0.90	2.02	Not Significant
26. Work stations should be designate and equipping for each skill area such as installation, repairs, maintenance, design and construction.	4.19	0.39	4.27	0.50	- 0.37	2.02	Not Significant
27. Professional service person should be invited	4.52	0.26	4.33	0.24	1.19	2.02	Not Significant

to make major equipment repairs.							
28. Storing the materials in a lockable cabinet.	4.30	0.37	3.73	1.07	- 1.47	2.02	Not Significant
29. Minor repairs (predictive maintenance) of the facilities should be made to avoid breakdown.	4.37	0.32	4.47	0.27	- 0.58	2.02	Not Significant
30. Equipment should be organized to facilitate movement of people in the workshop.	4.33	0.46	4.20	0.31	0.67	2.02	Not Significant
31. Students should be grouped during 4.37 practical session to enhance mastery.	0.55		4.20	0.31	0.8	2.02	Not Significant

Df = 40

Table 5 showed that all the items had their t-calculated less than t-table. This indicated that there was no significant difference on the mean responses of the two groups. Therefore, the null hypothesis of no significant difference was upheld.

Hypothesis 3: There is no significant difference between the mean responses of lecturers and instructors on the controlling skills needed for management of material resources for effective teaching in education.

Table 6: T-test analysis on the mean responses of respondents on controlling strategies for proper management of material resources.

S/ No	Controlling strategies	$N_1 =$ 27 - 2 x_{IS1}	$N_2 = 15$ - -2 x_2s2	Lecturers	Instructors	t-cal	t- tab	Remark
32.	Selecting, storing, and maintaining materials. for student use.	4.33	0.23	4.20	0.31	0.76	2.02	Not Significant
33.	Promoting material and environmental safety by colour coding equipment marking safety zones, and posting appropriate safety signs.	4.48	0.34	4.33	0.24	0.89	2.02	Not Significant
34.	An identification system should be 4.33 used to deter material theft.	0.23	4.20	0.17	0.92	2.02	Not Significant	

35.	Students should be guided in the 4.52 use of appropriate tools, equipment and machine in the school.	0.26	4.20	0.46	1.59	2.02	Not Significant	
36.	Lecturer and workshop staff 4.41 should prepare directives for the use of machines, tools and materials.	0.25	4.13	0.27	1.70	2.02	Not Significant	
37.	Maintaining a complete inventory 4.07 tools at the end of each class.	1.07	4.13	0.98	- 0.57	2.02	Not Significant	
38.	There should be a competent 4.41 storekeeper who should be responsible for the security of tools and equipment.	0.33	4.13	0.27	1.63	2.02	Not Significant	
39.	Tool loan slips should be given to 4.33 students and staff who want to borrow any tool/equipment.	0.31	4.13	0.41	1.02	2.02	Not Significant	
40.	Accurate inventory of materials in 4.41 stock should be kept.	0.25	4.27	0.21	0.92	2.02	Not Significant	
41.	There should be adequate check to 4.48 avoid careless loss of materials due to pilferation and vandalization	0.26	4.20	0.17	1.93	2.02	Not Significant	
42.	Maintenance and storage of materials should be well supervised	4.44	0.26	4.13	0.27	1.86	2.02	Not Significant
	Overall	4.38	0.35	4.19	0.33	1.02	2.02	NS

At the 0.05 level of significance, the data in Table 6 showed that the estimated t-value for each item was less than the table value. This demonstrated that the two groups' mean responses did not differ statistically significantly. The table also showed that the t-calculated overall value was 1.02, which is lower than the t-test value of 2.02. The null hypothesis was thus maintained.

12. Results Discussion

Results showed that respondents Abalaka (2023) rated all 15 items on planning abilities for the management of material resources as agreeable. This can be the effect of how much weight management places on planning. The cornerstone of management for achieving material resource management success is the ability to plan goals in higher education at any affordable price. The results support the 2014 national strategy on education, which said that effective planning is essential to any educational system's success. As a result, lecturers and instructors in higher education ought to be well-versed in the planning of resources and activities that are conducted in the classroom. Plans based on the study's findings include those for the acquisition of equipment,

tools, and other consumables needed for creating the course outline, unit lessons, learning activities, techniques to be employed for a given lesson, and the amount of time needed for a unit lesson. The study's results also supported Sulaiman's (2020) assertion that planning gives direction, lowers uncertainty, and cuts down on waste and redundancy the experts' opinions mentioned above helped to justify the findings of the study on the planning skills needed in management of material resources for effective teaching/learning in tertiary education. The study found that 15 items on the organizing strategies were rated agreeably by the respondents as effective for proper management of material resources, including: arranging tools and materials before and after use; grouping students during practical sessions to enhance mastery; storing materials in cabinets; keeping accurate records of all the materials; and setting the standards for controlling educational activities be retained, etc. The results supported the assertion made by Ajiteru (2022) that organization is the process by which resources come together to accomplish goals. He clarified the duties of the workshop teacher or instructor in terms of setting up the materials and resources, such as: arranging all of the laboratory's resources in accordance with safety standards and keeping them in lockable cabinets or open pigeonhole boxes; grouping students for instruction and demonstrations in a small, comfortable space or around a piece of equipment; and setting up facilities that will improve the security of the laboratory's users. Similarly, the results supported Okorie's (2019) opinion that the following guidelines are crucial for efficiently allocating material resources: machines and tools should be arranged in accountability and reference; being close to users should be a top concern; and damaged or lost tools should be replaced to ensure the program continues. The results also support the contribution of Ajiteru (2022), who claimed that the resources that are actually in the school are known and that it is necessary to maintain current inventories that are examined on a regular basis. In order to reduce waste and improve efficient teaching and learning in postsecondary education, lecturers and instructors should maintain current inventories of supplies. The study's conclusions regarding the organizing techniques required in the management of material resources for efficient teaching and learning were supported by the views of the experts mentioned above. The results of the controlling strategies study demonstrated that the 11 items that are necessary for managing material resources for efficient teaching in postsecondary education are all agreed upon by the respondents. Among the conclusions are the following: a competent storekeeper should be in charge of the security of educational materials; lecturers and instructors should create guidelines for the use of tools, equipment, and materials; students should be guided in the use of appropriate materials in schools; and an identification system should be used to discourage material theft. Abalaka (2023).

13. Final thoughts.

The availability of educational resources has long been seen as a crucial and fundamental aspect of school management, primarily focused on enhancing all other aspects of the teaching and learning process to guarantee that the school provides high-quality services to the society. Effective school administration with strong leadership, efficient time management within the school system, the provision of sufficient financial resources to schools, frequent training and retraining of human resources within the school, harmonious community relations, and creative use of the resources available within the school system are all essential to the success of Nigerian schools.

Higher education's significance and reach have evolved dramatically. Tertiary education, or higher education as it was more widely known, was what took place in universities many years ago. The school's well-deserved teaching and learning activities are hampered by the inadequate management of the material resources available. When material resources are used wisely, teaching and learning can be made more effective. In order to contribute in this regard, the

study looks at methods for managing material resources to educate effectively in higher education. Thus, the study added the following to our understanding of and ability to manage material resources:

1. It has given lecturers and instructors knowledge about management techniques for successful tertiary education instruction.
2. It has given many state governments in South-South Nigeria information on managing material resources. To improve their ability to teach effectively in higher education, lecturers and instructors could benefit from the information.

Based on the study's findings, it was determined that mastering the skills necessary to plan, organize, control, and coordinate the use of material resources in teaching and learning in the state's tertiary education system would improve the attainment of the stated goals. Third-level state education

14. Suggestions

The study's conclusions led to the following recommendations.

1. In order to teach students skills, state governments should hold workshops on material resource management techniques and bundle them into workshop materials through the ministry of education.
2. Lecturers and instructors should utilize the knowledge learned in the resources material management skills for enhancing the capabilities of teachers and instructors
3. Through certification, curriculum planners should place a strong emphasis on managing material resources in the tertiary education curriculum.
4. The state's educational administrators put the knowledge they've learned about resource management abilities into practice by making sure lecturers are proficient in organizing, planning, regulating, and coordinating the usage of tangible resources for state-funded postsecondary education.
5. To boost their effectiveness in higher education, school administrators should be urged to create strategies for wise material resource management.

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