



A Comparative Study of the Use of Instructional Materials, Availability and Utilization in Tertiary Institutions in Kwara State and Kogi State, of North Central Nigeria

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DOI: <https://doi.org/10.55248/gengpi.5.0424.0904>

ABSTRACT

The purpose of this study was to carry out a comparative study of Instructional Materials, Availability and Utilization in Tertiary Institutions in Kwara State and Kogi State of North Central Nigeria. Four research questions were raised to guide the study. Two research instruments were used, namely: an inventory of availability of instructional materials ($r = 0.69$) and teacher's/student's questionnaire titled "Instructional Materials, Availability and Utilization (IMAUQ)" was employed for data collection for the study. The questionnaire was administered in fifteen (15) tertiary institutions in Kwara and Kogi States. Using the random selection technique, 750 respondents, consisting of instructors and students, were selected from the population. Standard deviation, mean, and basic percentages were used to examine the collected data. The findings showed that while there was a good amount of general resources, visual resources available, were not used to their full potentials. Additionally, audio-visual materials were neither easily accessible nor effectively used for teaching and learning. It was also discovered that issues impeding the efficient provision and use of instructional resources for teaching and learning included a lack of funding, a bad policy of implementation, and low staff motivation. It was suggested that the government guarantee sufficient provision and training for professors to receive ongoing in-house training in order to take advantage of the existing teaching resources.

Keywords: *Availability, Instructional resources, Tertiary Institutions, Instruction, Utilization.*

1.0 Introduction

Learning is a multifaceted process that can be summed up as a gradual, comparatively permanent change in behaviour. Newly gained abilities, perception, facts, principles, and current knowledge can all lead to learning (Adeyanju, 2018). Instructional materials can reinforce learning because they captivate, inspire, and focus students' attention while they are being taught. The tools used in schools for teaching and learning are called instructional materials. Instructional materials are those that teachers and students utilize in the classroom or workshop for teaching or demonstration purposes, according to Akamobi (2018). Emphasis has also been placed on objectives that develop the skills of reflective thinking in students. It is also to teach students to understand and to appreciate certain basic values and attitudes necessary in effectively participating in the society.

According to Chauha (2017), instructional materials are real tools that students utilize in a "hands-on" manner to achieve the level of abilities required by the source of the need. Real items, audio-visual aids, visual aids, and many more are examples of instructional materials. Among other things, visual aids include wall charts, illustrated photographs, pictorial materials, and textbooks. Thus, audio instructional resources that enhance audibility of the teachers are mainly microphones and public address systems. Adaptable audio-visual resources for teaching and learning include computers and projectors as they appeal to both the senses of hearing and seeing.

The senses are the entranceways to knowledge for humans. There is a greater chance that students will comprehend and value the material being taught when they are given the opportunity to see, hear, feel, smell, and even taste it. The achievement of stated objectives in the learning domains would be higher the more students the teacher is able to engage and apply to the topics being taught. Resources and materials can be used efficiently to achieve this goal. Certain topics have far too frequently been labelled as dull, uninteresting, and unchallenging. The identification, gathering, preparation, and application of instructional materials and resources can help to reverse this depressing and uninspiring situation (Ololobou, 2019).

The careful use of resources to challenge the different organs of the learners has a significant impact on the increase in the percentage of information that is retained and learned. Therefore, Njoku (2020) recommended that teachers in the current era refrain from attempting to teach any subject without first carefully choosing and utilizing instructional resources. In order to support good teaching and learning, this study looks at the tools that tertiary level educators might use effectively.

The careful use of resources to challenge the different organs of the learners has a significant impact on the increase in the percentage of information that is retained and learned. Therefore, Njoku (2020) recommended that teachers in the current era refrain from attempting to teach any subject without first carefully choosing and utilizing instructional resources. In order to support good teaching and learning, this study looks at the tools that tertiary level educators might use effectively. Ibe (2018) asserts that it is critical for teachers to prepare how to organize the presentation's mechanics and make the materials meaningful for the audience in order to effectively use teaching aids in support of their role as the manager of the learning process. According to Ibe (2008), the teacher should follow certain utilization steps, which include previewing the information, setting up the environment, getting the audience ready, and lastly presenting the materials.

It is nonetheless evident that people recall the objects they have seen, handled, and even engaged in play. Facilitating effective learning and comprehension of the subject matter is the main responsibility of teachers (Shoji, 2015). It is important to support the use of teaching tools in our classrooms to cater for the comprehension of language phenomena by all students. Most institutions face difficulties in providing educational resources and facilities. Resources are limited and educational services, including facilities, are provided in different ways. When it comes to developing and implementing educational programmes, there are always possibilities to make well-informed decisions amongst competitive alternatives.

1.1 Statement of the Problem

Because the world is so dynamic and ever-changing, the educational system has had to make several adaptations in order to keep up with demands and trends on a global scale, which has resulted in curricular changes on a regular basis. For many years, the majority of education-related services in Nigerian tertiary institutions have been provided using manual techniques, which can make instruction tedious and time-consuming at times.

With the introduction of instructional materials in post-secondary educational institutions, some significant paradigm changes in teaching and learning occurred. Through the use of audio-visual and electronic tools, instruction became more user-friendly, learner-centered, and engaging for both instructors and students. While most schools seem to be using audio-visual aids for teaching and learning at a modest pace, most are actually using the limited number of these resources.

According to this theory, providing sufficient instructional resources for efficient teaching and learning is the most difficult task. Nonetheless, several establishments have limitations in terms of funds, expertise, and other environmental aspects concerning the accessibility and application of educational resources to improve instruction and learning. It is also important to remember that we will only regress academically and lose our ability to compete on a global scale if we do not embrace the use of technology to enhance teaching and improve on students' academic achievement. instructional resources in teaching and learning. The justification for this research is the urgent necessity to work toward enhancing the quality of education by providing instructional materials and facilities in postsecondary institutions.

1.2 The Objective of the Study

The objective of the study was to determine the extent to which tertiary institutions in Kogi State and Kwara State:

- Provide instructional materials for teaching
- Which instructional materials/facilities are utilized
- Compare the application of educational resources/tools by tertiary institutions in Kogi State and Kwara State.
- Proffer solutions for the non-availability and non-utilization of teaching resources/facilities.

1.3 Research Issues

To direct the investigation, the following research issues were created:

1. What educational resources are accessible for use in tertiary institutions in Kwara State and Kogi State, North Central Nigeria?
2. How much do lecturers in these post-secondary schools use the instructional materials that are accessible for teaching and learning?
3. What are the impediments that prevent the necessary instructional materials for teaching and learning from being provided effectively?
4. What are the impediments to effectively utilizing the teaching and learning resources that are already available?

2.0 Methods

For the study, the researchers used descriptive survey research. All of the teachers at higher education institutions in the North Central Nigerian states of Kogi and Kwara comprised the target population. Simple random sampling of balloting was used to select fifteen (15), post-secondary institutions, consisting six (6) colleges of education, four (4) polytechnics, and five (5) universities from the Kogi and Kwara States. Fifty (50) respondents (lecturers and students from each of the institutions were employed), to make a total of seven hundred and fifty (750) respondents. For the investigation, two instruments were used.: An inventory of accessible instructional resources that are available (IAIR), the inventory contained the expected educational

resources required to enhance continual improvement in students' academic performance; and a questionnaire titled "Comparative Study of Instructional Materials Availability and Utilization Questionnaire (CSIMAUQ). Four components made up the questionnaire. The purpose of Section A was to give background information about the respondents, while Section B asked how frequently the lecturers used the teaching materials, using a four-point rating system: Very Often, Often, Rarely, and Never. The factors preventing the successful provision and use of instructional resources were discussed in Sections C and D using a four-point Likert scale: Strongly Agree, Agree, Disagree, and Strongly Disagree, respectively. In order to address research question one, the IAIR was created, with a 50% baseline. Items with a percentage above 50% were considered accessible, while those with a percentage below 50% were considered inaccessible. Using a four-point scale for positive statements (Strongly Agree, Very Often = 4; Agree, Often = 3; Disagree, Rarely = 2, and Strongly Disagree, = 1), score values were assigned to the replies for the CSIMAUQ. According to the decision-making criteria, any statement with a mean score of 2.50 or higher is indicated acceptable, while a mean score rating of less than 2.50 is indicated as unacceptable. Two experts in educational instruction and one expert in measurement and evaluation were provided drafts of the inventory and questionnaire to ensure the validity of the two instruments. It was necessary for the experts to verify that the items met the requirements for coverage, linguistic clarity, appropriateness, and applicability. The final instruments employed in this study came about as a result of the experts' comments and suggestions. Through a pilot research, the instruments' dependability was ascertained. The two instruments were given to instructors and students in four (4) post-secondary institutions that were not included in the sample in order to achieve this. Using the Cronbach Alpha method, the reliability coefficients of CSIMAUQ and IAIR were determined to be 0.73 and 0.75, respectively. The two instruments' reliability coefficients were deemed sufficient for the study's purposes. Eight (8) research assistants helped the researchers as they personally distributed the questionnaire and the inventory. The instruments were returned in a whole. To address research issue 1, the data were examined using a simple percentage; for research issues 2, 3, and 4, the mean and standard deviation were employed.

3.0 Results

3.1 Research Issue One:

What educational resources are accessible for use in tertiary institutions in Kwara State and Kogi State, North Central Nigeria?

Table 1: Percentage and Regularity of Availability of Instructional Resources in the Sampled Tertiary Institutions.

S/N	Educational Resources	Accessible		Not Accessible		Decision/Rule
		Regularity	Percentage (%)	Regularity	Percentage (%)	
A.	General Resources					
1.	Chalk boards/Marker boards	124	83	26	17	Accessible
2.	Electricity Supply	13	87	02	13	Accessible
3.	Fire Extinguishers	118	79	32	21	Accessible
4.	First Aid Boxes	60	80	15	20	Accessible
5.	Water Supply	12	80	03	20	Accessible
6.	White Marker Boards	125	83	25	17	Accessible
7.	Magnetic Boards	17	38	28	62	Not Accessible
8.	Internet Connectivity	10	67	05	33	Accessible
9.	Wall Charts	230	77	70	23	Accessible
10.	Text-books/work books	220	73	80	27	Accessible
11.	Electronic Boards	2	93	28	07	Not Accessible
B	Laboratory Apparatus					
12	Microscope	14	47	16	53	Not Accessible
13.	balances used in weighing	20	67	10	33	Accessible
14.	Jars	19	63	11	37	Accessible
15.	Gas/Bunsen burners	22	73	8	27	Accessible

16.	Evaporating Dishes	24	80	6	20	Accessible
17.	Vases	25	83	7	17	Accessible
18.	Funnels	26	87	4	13	Accessible
19.	Gas Containers	13	43	17	57	Not Accessible
20.	Glass rods	21	70	9	30	Accessible
21.	Picture/life samples	20	67	10	33	Accessible
22.	Pipingttes	18	60	12	40	Accessible
23.	Protective goggles	18	60	12	40	Accessible
24.	Rubber pipes	20	67	10	33	Accessible
25.	Testing containers	22	73	8	27	Accessible
26.	Sand buckets	21	70	9	30	Accessible
27.	Cleaning glassware	23	77	7	23	Accessible
28.	Mesh gauzes	23	77	7	23	Accessible
29.	Tables and Stools	22	73	8	27	Accessible
30.	Weighing bottles	20	67	10	33	Accessible
C.	Audio Materials					
31.	Public Address System	12	40	18	60	Not Accessible
32.	Loudspeakers	14	47	16	53	Not Accessible
33.	Microphones	08	27	22	73	Not Accessible
34.	Wireless Microphones	10	33	20	67	Not Accessible
35.	Recorded Lecture Players	07	23	23	77	Not Accessible
36.	Lecture recorders	16	53	14	47	Accessible
D.	Audio – Visual Resources					
37.	Computers	20	67	10	33	Accessible
38.	Education software	7	23	23	77	Not Accessible
39.	Digital whiteboards	12	40	18	60	Not Accessible
40.	Slides	8	27	22	73	Not Accessible
41.	Projectors	8	27	22	73	Not Accessible
42.	Laptops	22	73	08	27	Accessible
43.	Overhead projector/power point presentation	10	33	20	67	Not Accessible
44.	Internet and Satellite dishes	05	17	25	83	Not Accessible
45.	TV sets	14	47	16	53	Not Accessible
E.	Sporting Equipment					
46.	Athletics equipment	12	40	18	60	Not Accessible
47.	Football pitch	10	33	20	67	Not Accessible

48.	Basketball pitch	15	50	15	50	Accessible
49.	Volleyball pitch	15	50	15	50	Accessible
50.	Hockey pitch	05	17	25	83	Not Accessible
51.	Lawn Tennis Court	13	43	17	57	Not Accessible
52.	Badminton kits	10	33	20	67	Not Accessible
53.	Nets	23	77	07	23	Accessible
54.	Skipping ropes	28	93	02	07	Accessible
55.	Gymnastics mats	25	83	05	17	Accessible
56.	Stop watch	27		03		Accessible
57.	Sports bibs	20	67	10	33	Accessible
58.	Hoops	22		08		Accessible
59.	Rackets	10	33	20	67	Not Accessible
F.	Technical/Engineering Equipment					
60.	Opto-Mechanics	05	17	25	83	Not Accessible
61.	Escalator components	05	17	25	83	Not Accessible
62.	Simulators	08	27	22	73	Not Accessible
63.	Flash cards	23	77	07	23	Accessible
64.	Charts	22	73	08	27	Accessible
65.	Podcast	20	67	10	33	Accessible
66.	Photographs	20	67	10	33	Accessible
67.	Transparencies	12	40	18	60	Not Accessible
68.	Filmstrips	10	33	20	67	Not Accessible
69.	Technical Drawing tools	24	75	06	25	Accessible
70.	Electronic tablets	05	17	25	83	Not Accessible

Field Survey 2013

With the exception of items 07 and 11 (17 out of 45) and (02 out of 30), respectively, all of the general equipment under the subheading "General" is available, according to data in table 1. On the laboratory equipment, all the items were available except for items 12 (14 out of 30) and 19 (13 out of 60). For Audio instructional materials, most of them were inadequate as observed in items: 31, 32, 33, 34 and 35, (12 out of 30), (14 out of 30), (08 out of 30), (10 out of 30) and (07 out of 30) respectively. Table 1 further demonstrates that, of all the audio-visual teaching resources, only desktop and laptop computers were accessible; all other equipment received ratings of less than 50%, which indicates that it was insufficient. Additionally, Table 1 demonstrates that only desktop and laptop computers were available out of all the audio-visual instructional resources; all other equipment had a rating of less than 50%, suggesting that it was insufficient as identified in items: 46, 47, 50, 51 and 52, which had (12 out of 30), (10 out of 30), (05 out of 30), (13 out of 30) and (10 out of 30) in that order. Items listed under Technical and Engineering equipment showed that items: 60, 61, 62, 67, 68 and 70 were not adequate in most of the tertiary institutions sampled.

3.2 Research Issue Two:

How much do lecturers in these post-secondary schools use the instructional resources that are accessible for teaching and learning?

Table 2: Display of average ratings and standard deviation of responses about how lecturers use the instructional resources that are available for both teaching and learning.

S/N	Educational Resources	Average	S.D	Decision
A.	General Resources			
1.	Chalk boards/Marker boards	3.48	1.07	Used
2.	Electricity Supply	2.95	1.24	Used
3.	Fire Extinguishers	2.55	1.21	Used
4.	First Aid Boxes	3.36	1.23	Used
5.	Water Supply	3.64	1.12	Used
6.	White Marker Boards	3.06	1.11	Used
7.	Magnetic Boards	2.45	1.21	Not Used
8.	Internet Connectivity	2.63	1.245	Used
9.	Wall Charts	2.75	1.22	Used
10.	Text-books/work books	2.63	1.23	Used
11.	Electronic Boards	2.25	1.11	Not Used
B	Laboratory Apparatus			
12.	Microscope	2.15	1.10	Not Used
13.	Balances for weighing	3.35	1.15	Used
14.	Beakers	2.94	1.33	Used
15.	Gas/Bunsen burners	2.82	1.24	Used
16.	Evaporating Dishes	2.85	1.26	Used
17.	Flasks	3.17	1.18	Used
18.	Funnels	3.26	1.17	Used
19.	Gas Jars	2.14	1.12	Not Used
20.	Glass rods	2.78	1.32	Used
21.	Pictures and life samples	2.89	1.23	Used
22.	Pipettes	2.02	1.13	Used
23.	Protective goggles	2.58	1.27	Used
24.	Rubber tubing	2.66	1.24	Used
25.	Test Tubes	3.12	1.15	Used
26.	Sand buckets	3.22	1.28	Used
27.	Wash bottles	2.87	1.25	Used
28.	Wire gauzes	3.16	1.24	Used
29.	Tables and Stools	3.05	1.22	Used
30.	Weighing Instruments	3.15	1.19	Used
C.	Audio Materials			
31.	Public Address System	2.23	1.12	Not Used
32.	Loudspeakers	2.48	1.18	Not Used

33.	Microphones	2.17	1.13	Not Used
34.	Wireless Microphones	2.14	1.22	Not Used
35.	Recorded Lecture Players	2.32	1.26	Not Used
36.	Lecture recorders	3.43	1.14	Used
<i>D.</i>	<i>Audio – Visual Resources</i>			
37.	Computers	3.09	1.24	Used
38.	Education software	2.44	1.25	Not Used
39.	Digital whiteboards	2.25	1.17	Not Used
40.	Slides	2.02	1.15	Not Used
41.	Projectors	1.56	1.24	Not Used
42.	Laptops	3.32	1.19	Used
43.	Overhead projector/power point presentation	1.96	1.32	Not Used
44.	Internet and Satellite dishes	1.82	1.33	Not Used
45.	TV sets	2.15	1.24	Not Used
<i>E.</i>	<i>Sporting Equipment</i>			
46.	Athletics equipment	3.14	1.28	Not Used
47.	Football pitch	2.46	1.25	Not Used
48.	Basketball pitch	2.64	1.28	Used
49.	Volleyball pitch	2.65	1.27	Used
50.	Hockey pitch	2.33	1.18	Not Used
51.	Lawn Tennis	2.29	1.21	Not Used
52.	Badminton kits	2.18	1.20	Not Used
53.	Nets	2.74	1.24	Used
54.	Skipping ropes	2.76	1.28	Used
55.	Gymnastics mats	3.24	1.20	Used
56.	Stop watch	2.68	1.22	Used
57.	Sports bibs	2.75	1.28	Used
58.	Hoops	2.84	1.26	Used
59.	Rackets	2.16	1.24	Not Used
<i>F.</i>	<i>Technical/Engineering Equipment</i>			
60.	Opto-Mechatronics	2.16	1.24	Not Used
61.	Escalator components	2.18	1.24	Not Used
62.	Simulators	2.32	1.18	Not Used
63.	Flash cards	3.44	1.16	Used
64.	Charts	3.36	1.12	Used
65.	Podcast	2.58	1.20	Used

66.	Photographs	2.85	1.22	Used
67.	Transparencies	2.26	1.14	Not Used
68.	Filmstrips	2.21	1.16	Not Used
69.	Technical Drawing tools	3.28	1.12	Used
70.	Electronic tablets	2.35	1.18	Not Used

Field Survey 2013

Table 2 result shows that under the heading general resources, just two of the eleven items are not in use. (7 and 11). The rest nine items are used in various institutions for instruction. Under the audio materials, only tape recorders were used, as items 31-35 were not used and for audio-visual instructional materials, only the laptop and desktop computers were used; items 38-41 and 43-45 were not used for instruction. Most of the sporting equipment are used except for items 46,47,50,51,52 and 59 that were not used maximally. Under technical/engineering equipment, items 60,61,62,67,68 and 70 were not used.

3.3 Research Issue Three:

What are the impediments that prevent the necessary instructional resources for teaching and learning from being provided effectively?

Table 3: The factors that hinder the effective provision of instructional resources, measured by taking the mean rating and standard deviation of the responses from lecturers and students.

S/N	Factors	Average	SD	Decision
71.	Insufficient funds to buy teaching materials.	3.58	0.85	Accepted
72.	High price of educational resources.	3.46	0.94	Accepted
73.	Government's unwillingness.	3.20	0.90	Accepted
74.	Inadequate culture of upkeep	2.88	1.16	Accepted
75.	Misuse of funds intended for the purchase of educational supplies.	2.94	1.11	Accepted
76.	Poor execution of policy in education.	3.16	1.12	Accepted

Field Survey 2013

Table 3's outcome demonstrates that six components (71–76) received higher scores than 2.50 baseline mean. This implies that the six factors hinder the effective provision of instructional resources for teaching and learning in the various institutions investigated.

3.4 Research Issue Four:

What are the impediments to effectively utilizing the teaching and learning resources that are already available?

Table 4: Mean Rating and Standard Deviation on Lecturers' Responses on the Impediments to Effective Utilization of Educational Resources for Teaching and Learning.

S/N	Factors	Average	SD	Decision
77.	Lack of technical proficiency on the instructors' part.	2.64	1.21	Accepted
78.	Inadequate oversight by the school administration of lecturers.	2.85	1.14	Accepted
79.	Insufficient technicians and support workers.	3.01	1.01	Accepted
80.	Lecturers' lack of enthusiasm.	3.34	0.86	Accepted
81.	Brief lecture times are listed on the school schedule.	3.15	0.95	Accepted
82.	Overwhelming students' population.	2.86	1.07	Accepted

Field Survey 2013

Table 4 shows that the mean scores for items 77 through 82 were higher than the permissible cut-off of 2.50 and higher. These imply that a high percentage of the lecturers concur that all the above six items are impediments to effective utilization of educational resources for teaching and learning in various tertiary institutions.

4.0 Conclusion

The results of this investigation showed that despite the availability of internet connectivity in most of the tertiary institutions sampled, there were no electronic boards and they do not have adequate audio materials for lecture delivery. Public address systems were either not available or in a state of disrepair, while audio-visual resources were not provided to complement the teaching and learning process. Most of the laboratories have and utilized sufficient apparatus but do have modern microscopes. From table 2, the findings revealed that some vital sporting instructional materials were not available for use, such as badminton sets, a lawn tennis court, a hockey pitch, and a functioning football field. Similarly, the technical/engineering equipment to support learning like simulators, filmstrips, and electronic tablets were not available for use in most of the tertiary institutions used for the study.

5.0 Recommendations

For optimal supply and application of educational resources in tertiary institutions, the following recommendations were made:

1. The various tertiary institutions and government should endeavour to provide crucial instructional materials to make teaching and learning effective.
2. Audio and audio-visual instructional materials should be made available to lecturers for good lecture delivery, particularly for classrooms with a lot of students, to make students learn with what they see and hear.
3. The various institutions should have a monitoring team to ensure compliance and adequate use of available instructional materials.
4. There should be periodic training and re-training of lecturers in proper utilization of current and new instructional materials.
5. Lecturers who put the various instructional materials into excellent use should be applauded and those who do otherwise be punished or reprimanded.

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