

The Impact of Instructional Resources on Academic Achievement: A Study of Library and Information Science Postgraduates in Nigeria

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Abstract - Students' academic performance is a multifaceted concept encompassing comprehension, problem-solving, and creativity. This study explores the intricate relationship between instructional resources, teaching quality, and academic achievement among Library and Information Science postgraduates in Nigeria. Drawing on Resource-Based Theory, the research investigates the availability and impact of instructional resources, including textbooks, laboratory equipment, and digital materials. A survey involving 185 postgraduate students from multiple universities utilizes a self-structured questionnaire to assess the availability and perceived use of instructional resources. The findings highlight essential instructional resources for effective teaching, emphasizing their role in facilitating global connectivity, self-paced learning, and practical skill development. However, the study identifies a concerning trend of low overall availability of instructional resources, despite certain resources like ICT facilities and reference materials being moderately accessible. Moreover, a positive correlation between resource availability and academic performance suggests that a well-equipped learning environment significantly influences student success. The study underscores the need for educational institutions to prioritize resource allocation, teacher training, and continuous assessment to enhance instructional resource availability. Recommendations include fostering partnerships with external entities to secure funding and technology, emphasizing the integration of instructional resources in teaching practices, and advocating for the importance of resources among stakeholders. Overall, the research contributes to the understanding of the intricate dynamics between instructional resources and academic performance in the Nigerian higher education context.

Keywords: Instructional Resources, Academic Performance, Library and Information Science, Postgraduates, Availability, Use

I. INTRODUCTION

Students' academic performance is vital, reflecting comprehension, knowledge retention, and overall achievement. Beyond grades and test scores, it includes critical thinking, problem-solving, and creativity. Active learning fosters deep understanding, while teaching quality, resource access, and a supportive environment influence performance. Recognizing and addressing challenges promptly, seeking guidance, and staying focused are essential for consistent excellence. Holistic growth and nurturing curiosity lead to lifelong learning (Osokoya,

2018). Jha *et al.*, (2016) argued that positive academic performance is crucial because it opens doors to future opportunities like higher education, scholarships, and job placements.

The academic records of students demonstrate effective knowledge application, boosting confidence and motivation. When students perform excellently, it benefits society through their positive contributions and innovation, as well as impacts students' mental and emotional well-being, reducing stress and anxiety related to academic responsibilities (Busari, 2017).

It is important to state at this juncture that students' academic performance is closely tied to the availability and use of instructional resources, such as textbooks, digital materials, well-equipped labs, and diverse technologies. Simonson *et al.*, (2019) described these resources as crucial for effective teaching and enriched learning experiences, encompassing both tangible and digital elements.

Similarly, Clark (2014) defined instructional materials as aids facilitating teaching and learning, taking various forms like textbooks, worksheets, videos, interactive software, manipulatives, and online resources. Farombi (2018) emphasized the impact of instructional materials on teaching quality and students' learning outcomes. Orlich *et al.*, (2016) and Smaldino *et al.*, (2019) asserted that ample resources cater to diverse learning styles, foster critical thinking, encourage active engagement, and bridge the gap between theory and practice. From Osokoya's (2018) point of view, instructional resources cultivate problem-solving skills essential for students' academic success. However, Busari (2017) noted a concerning trend of declining academic performance globally. Thus, outside the scope of this research, there is a crucial need to investigate the availability and use of instructional resources and their impact on academic performance among Library and Information Science postgraduates at Delta State University, Abraka.

II. STATEMENT OF THE PROBLEM

The academic performance of students in Nigeria is a critical factor in determining their future success and

contributions to society. High academic achievement opens doors to better educational and career opportunities, thereby playing a pivotal role in the overall development of individuals and the nation. Despite the significance of academic performance, there exists a concerning trend of inconsistent and sometimes suboptimal academic outcomes among students in Nigeria. The current status of students' performance reflects a need for investigation and intervention to ensure that educational goals are met, and students are adequately prepared for the challenges of the future.

The suboptimal academic performance of students in Nigeria has far-reaching implications for the country's human capital development, economic competitiveness, and social progress. A workforce with inadequate academic preparation may struggle to meet the demands of a rapidly evolving global landscape, hindering the nation's ability to thrive in various sectors. Identifying the root causes of the academic challenges faced by students is crucial for implementing effective interventions.

Potential factors contributing to suboptimal academic performance may include inadequate access to instructional resources, limited availability of educational materials, and disparities in the use of technology for learning. Understanding these factors is essential for formulating targeted strategies to improve students' academic outcomes in Nigeria.

A. Research Questions

The following research questions were put forth to guide the study.

1. What are the instructional resources needed for effective and efficient teaching of Library and Information Science postgraduate students?
2. To what extent are the required instructional resources available for students?
3. What is the perceived use of instructional resources to students' academic work?
4. Is there a relationship between the use of instructional resources and the academic performance students?

III. LITERATURE REVIEW

The researchers reviewed related, current, and relevant literature that bothers on availability, use of instructional resources and academic performance of library and information science postgraduates in South-south, Nigeria. The review of related literature specifically addressed the: instructional resources needed for effective and efficient teaching of Library and Information Science students, extent to which the required instructional resources available for students, use of instructional resources to students' academic work, relationship between the use of instructional resources and the academic performance

students, and extent to which the available instructional resources influence the academic performance of students.

A. Resource Based Theory

This study is hinged on the resource based theory by Barney (1991) who postulates that organizations that own "strategic resources" have important competitive advantages over organizations that do not. The Resource Based Theory is a managerial framework used to determine the strategic resources a firm can exploit to achieve sustainable competitive advantage. Resource-Based Theory suggests that the availability and strategic utilization of resources contribute significantly to an organization's competitive advantage or, in this case, an individual's academic performance.

Thus, availability of diverse and high-quality instructional resources such as textbooks, worksheets, videos, interactive software, manipulative, online resources, etc. can provide students with a competitive advantage in their academic pursuits. In the same vein, the effective and efficient use of instructional resources can be viewed as a strategic capability. Students who are adept at utilizing available instructional resources may have a better chance of translating those resources into improved academic performance. In line with the view of the resource based theory, students who leverage available resources effectively are likely to perform better academically than those who do not.

Instructional resources are indispensable tools for educators, encompassing various forms like textbooks, videos, simulations, and digital materials. These materials, described by authors such as Obanya, Abdullahi, Ikerionwu, and Agina-Obu, are selected by teachers to enhance the clarity, engagement, and impact of lessons, providing sensory inputs during the teaching and learning process. Akanbi and Adesola *et al.*, emphasize that these aids contribute to better learning outcomes and encompass both animate and inanimate objects, human and nonhuman resources.

The primary goal of instructional resources is to bolster the teaching and learning process, aligning with curriculum objectives. Goktas, Yildirim, and Yildirim categorize instructional resources into print-based, audio-visual, hands-on, and digital resources, emphasizing their role in conveying information, stimulating critical thinking, and promoting retention. These resources, including textbooks, experiments, and online simulations, cater to diverse learning styles. Lynch underscores their vital role in structuring content, engaging learners, and supporting various learning styles, while Koehler *et al.*, stress the importance of careful selection, adaptation, and continuous evaluation to meet curriculum standards, learner needs, and accessibility requirements. The ongoing process of

designing, selecting, and adapting instructional resources ensures they remain effective and inclusive for all learners.

Nigeria's higher education system is pivotal for national development and individual aspirations, with instructional resources playing a crucial role in shaping educational quality. Adeniji and Akinyemi's 2018 study at Enugu State University revealed significant disparities in instructional resource availability, adversely affecting learning effectiveness.

The study proposed addressing this issue as a paramount avenue to enhance physics education in Nigerian universities. Similarly, investigations by Akindele and Olatoye in 2017 at Ondo State University, Babalola in 2016 in Kwara State, and Ezeudu and Okoye in 2018 at Nnamdi Azikiwe University uncovered inadequacies in instructional materials, hindering effective learning and necessitating improvements in resource availability.

Mukagihana *et al.*'s 2020 examination of instructional resources in pre-service Biology Teachers Education in Rwanda revealed a lack of essential materials, raising concerns about producing less competent future biology teachers. In Nigeria, Chukwu *et al.*'s 2016 study in Enugu Education Zone indicated a limited availability of instructional materials at the basic education level, urging the provision of materials for effective instructional delivery.

Hilda and Bernard's 2015 study in Kenya underscored deficiencies in instructional resources for teaching Conflict and Conflict Resolution in primary schools, emphasizing the need for teacher retraining and sensitization on relevant materials. These collective findings highlight the urgency of addressing instructional resource inadequacies to bolster educational quality and outcomes.

Instructional resources are fundamental to effective pedagogy and student success, acting as the bedrock for a comprehensive educational experience that fosters knowledge acquisition, skill development, and critical thinking. In Nigeria, their availability is crucial for unlocking the potential of aspiring undergraduates. Matazu (2022) highlights their essential role in various aspects of the teaching-learning process, from improving memory levels to providing tangible learning activities for self-evaluation.

The study by Oyewusi and Kolade (2017) emphasizes how instructional resources significantly enhance the learning experience for Nigerian undergraduates, offering tools like multimedia resources to tackle complex subjects effectively. Additionally, Ogiegbaen and Iyamabo (2005) underscore the crucial role of instructional resources in providing accessibility and flexibility, particularly through digital formats, addressing educational disparities and promoting a more equitable learning environment.

Adeoye and Nwadiani (2019) stress the significance of instructional resources in promoting self-paced learning, empowering students to take control of their education. Jegede *et al.*, (2014) highlight their pivotal role in developing practical skills, particularly in STEM fields, aligning graduates with the demand for job-ready competencies. Ajadi (2017) underscores instructional resources as catalysts for multidisciplinary learning and global connectivity, providing a holistic approach to education and exposing Nigerian undergraduates to diverse perspectives through platforms like MOOCs.

Finally, Nkemdirim (2016) and Oluwatimilehin (2019) point out how instructional resources serve as enablers for research, innovation, and career readiness, contributing to global knowledge advancement and equipping graduates with practical skills for employment or entrepreneurial ventures. In conclusion, instructional materials play a pivotal role in shaping the academic and professional future of Nigeria.

IV. METHODOLOGY

The research engaged 185 participants comprised postgraduate students selected from postgraduate Diploma, Master and Ph.D. programmes in Library and Information Science of Delta State University, Abraka, Ignatius Ajuru University, Port Harcourt, Rivers State University, Port Harcourt, Ambros Alli University, Ekpoma, Benin City, Edo State. The study utilized the entire population due to its manageable size, employing a total enumeration sampling technique.

A purposive sample strategy focused on relevant university libraries offering Library and Information Science Programme at the Postgraduate level. A self-structured questionnaire, titled "Availability, Use of Instructional Resources and Academic Performance Questionnaire (AUIRAPQ) was deployed to assess the availability, use of instructional resources and the academic performance of postgraduate students. The questionnaire allowed four responses: Strongly Agree, Agree, Disagree, and Strongly Disagree.

The instrument was administered via WhatsApp and Telegram platforms of the postgraduate students. With the aid of research assistants who facilitated questionnaire administration in their respective university across the LIS Departments offering Postgraduate Programmes in Delta, Edo and Rivers states in Nigeria's South-south geopolitical zone. To ensure a high response rate, the researcher continuously communicated the research assistants via phone calls, social media platforms and text messages over a month. Descriptive and inferential statistics, including frequency, mean, Pearson's Product Moment Correlation Coefficient, and linear regression.

The criterion means of 2.50 was applied, accepting items with a mean score of 2.50 and above and rejecting those

below. Hypotheses were tested at a 0.05 significance level, where a significant level of 0.05 or below led to rejection, and a significant value above 0.05 was accepted.

A. Research Question One: What are the instructional resources needed for effective and efficient teaching of Library and Information Science postgraduate students?

V. RESULTS

TABLE I INSTRUCTIONAL RESOURCES FOR EFFECTIVE TEACHING OF LIS POSTGRADUATE STUDENTS

Instructional Resources	A		D	
	Freq.	%	Freq.	%
Textbooks	176	95	9	5
Laboratory equipment	166	90	19	10
Reference cards and formula sheets	149	81	36	19
Real-life examples	142	77	43	23
Interactive Apps	123	66	62	34
Measurement tools	115	62	70	38
Visual aids	108	58	77	42
ICT facilities (computers, printers, scanners, etc.)	101	55	84	45
Audio-visual materials	100	54	85	46
Hands-on materials	98	53	87	47
Online resources	96	52	89	48
Graphing calculator	88	48	97	52
Problem sets and worksheets	66	36	119	64

Table I reveals the instructional resources needed for effective teaching of Library and Information Science undergraduates.

As revealed in the Table, textbooks (176, 95%), laboratory equipment (166, 90%), reference cards and formula sheets (149, 81%), real-life examples (142, 77%), interactive apps (123, 66%), measurement tools (115, 62%), visual aids

(108, 58%), ICT facilities (101, 55%), audio-visual materials (100, 54%), hands-on materials (98, 53%), and online resources (96, 52%) are the instructional resources for effective teaching of Library and Information Science postgraduate students.

B. Research Question Two: To what extent are the required instructional resources available for students?

TABLE II EXTENT OF AVAILABILITY OF INSTRUCTIONAL RESOURCES

Instructional Resources	VHE	HE	LE	VLE	\bar{x}
ICT facilities (computers, printers, scanners, etc.)	82	59	23	21	3.09
Reference cards and formula sheets	23	129	60	5	2.85
Textbooks	64	55	25	41	2.77
Online resources	23	93	24	45	2.51
Visual aids	17	43	116	9	2.37
Interactive Apps	15	45	112	13	2.34
Audio-visual materials	33	44	60	48	2.31
Hands-on materials	24	49	77	35	2.24
Real-life examples	17	34	100	34	2.18
Laboratory equipment	25	35	89	36	2.16
Measurement tools	14	20	129	22	2.14
Graphing calculator	9	14	60	102	1.85
Problem sets and worksheets	15	10	70	90	1.73
N = 185; Criterion Mean = 2.50; Aggregate Mean = 2.35					

Data in Table II reveals that the aggregate mean of 2.35 is lower than the criterion mean of 2.50, which is an indication that the extent to which the required instructional resources

are made available to the postgraduate students is low. Thus, the study concluded that the required instructional resources for effective and effective teaching of Library and

Information Science Postgraduate students are made available to a low extent. Nevertheless, instructional resources such as ICT facilities ($\bar{x} = 3.09$), reference cards and formula sheets ($\bar{x} = 2.85$), textbooks ($\bar{x} = 2.77$), and

online resources ($\bar{x} = 2.51$) are available to a reasonable extent.

C. Research Question Three: What is the perceived use of instructional resources to students' academic work?

TABLE III PERCEIVED USE OF INSTRUCTIONAL RESOURCES TO POSTGRADUATE STUDENTS

Perceived Use	A		D	
	Freq.	%	Freq.	%
Facilitate global connectivity	144	78	41	22
Promotes self-paced learning	133	72	52	28
Provides practical knowledge and skills that align with curriculum	122	66	63	34
Helps improve practical skills	117	63	54	37
Enhanced learning experience	104	56	81	44
Makes learning more accessible to students	102	55	83	45
Supports research and innovation	101	55	84	45
Promotes multidisciplinary learning	94	51	91	49

Table III reveals the benefits of the use of instructional resources to undergraduates. As revealed in the Table, facilitating global connectivity (144, 78%), promotion of self-paced learning (133, 72%), provision of practical knowledge and skills that aligns with curriculum (122, 66%), improving practical skills (117, 63%), enhance learning experience (104, 56%), makes learning more accessible to students (102, 55%), supports research and innovation (101, 55%), and promotion of multidisciplinary learning (94, 51%) are the use of instructional resources to postgraduate students.

D. Research Question Four: What is the relationship between the available instructional resources and the academic performance of postgraduate students?

TABLE IV CORRELATION BETWEEN ACADEMIC PERFORMANCE AND AVAILABLE INSTRUCTIONAL RESOURCES

		Instructional Resources	Academic Performance
Instructional Resources	Pearson Correlation	1	.515**
	Sig. (2-tailed)	-	.000
	N	185	185
Academic Performance	Pearson Correlation	.515**	1
	Sig. (2-tailed)	.000	
	N	185	185

$\alpha = 0.05$

Data in Table IV reveals the correlation between available instructional resources and academic performance among postgraduate students of library and information science in South-south, Nigeria.

The result reveals that the correlation coefficient r is .515, which indicates that there is a positive relationship between available instructional resources and academic performance

of Postgraduate Students of Library and Information Science in South-south, Nigeria, while the significant level is .000, which is lesser than the alpha level of 0.05. Therefore, it was concluded that, the available instructional resources statistically significantly influence the academic performance of postgraduate students of Library and Information Science in South-south, Nigeria.

VI. DISCUSSION OF THE FINDINGS

The first finding obtained from research question 1 as displayed in Table I revealed that the identified instructional resources needed for effective teaching include textbooks, laboratory equipment, reference cards, real-life examples, interactive apps, measurement tools, visual aids, ICT facilities, audio-visual materials, hands-on materials, and online resources. The finding aligns with Previous studies in Nigeria (Adeniji & Akinyemi, 2018; Akindele & Olatoye, 2017; Chukwu *et al.*, 2016) and other countries (Mukagihana *et al.*, 2020; Hilda and Bernard, 2015) that highlighted deficiencies in instructional materials at various educational levels, emphasizing the need for improvement. The second outcomes derived from research question two as shown in Table two suggest that the overall extent of availability of required instructional resources is low (aggregate mean = 2.35).

However, specific resources like ICT facilities, reference cards, textbooks, and online resources are available to a reasonable extent. This aligns with the findings of Adeniji and Akinyemi (2018) in Enugu State University, emphasizing disparities in instructional resource availability.

The third result as derived from research question three as show cased in Table three signifies that the perceived benefits of instructional resources include facilitating global connectivity, promoting self-paced learning, providing practical knowledge, improving practical skills, enhancing

the learning experience, making learning more accessible, supporting research and innovation, and promoting multidisciplinary learning. This finding is in tune with previous studies (Oyewusi & Kolade, 2017; Jegede *et al.*, 2014; Ajadi, 2017) that emphasize similar benefits, showcasing the importance of instructional resources in promoting holistic education and practical skill development.

In a likewise manner, the fourth finding as derived from research question four as presented in Table 4, indicates that there exists a positive correlation ($r = .515$) between the available instructional resources and the academic performance of Postgraduate students. This indicates that a higher availability of resources is associated with better academic performance. The finding support previous research (Adeoye & Nwadiani, 2019; Ogiegbaen & Iyamabo, 2005) that underscores the significance of instructional resources in enhancing learning experiences, promoting self-paced learning, and providing practical skills.

VII. RECOMMENDATIONS

Based on the findings of the study regarding instructional resources and their impact on effective teaching and postgraduate student learning, several recommendations can be proposed.

1. Educational institutions should prioritize and allocate more resources to ensure a higher availability of diverse instructional materials. This includes securing funding for textbooks, laboratory equipment, reference cards, interactive apps, and other essential resources to enrich the learning environment.
2. Teachers should be provided with training on how to effectively integrate a variety of instructional resources into their teaching methods. This training should focus on maximizing the benefits of these resources to improve student engagement, understanding, and overall academic performance.
3. Regular assessments should be conducted by management of higher institutions to evaluate the availability of instructional resources. This ongoing monitoring will help identify areas of improvement and enable institutions to adapt to changing educational needs.
4. Institutions should actively communicate the importance of instructional resources to administrators, policymakers, and other stakeholders. Creating awareness can lead to increased support and commitment to improving resource availability.

A. Implication for Practice

The study emphasizes the importance of different instructional tools in promoting effective teaching and enhancing postgraduate student academic achievement. To

overcome the limited total resource availability, schools should promote strategic relationships with industrial partners, regulatory bodies, and educational organizations. By forming partnerships, universities may get access to money, experience, and cutting-edge technology, improving instructional resource accessibility. This collaborative method guarantees a well-equipped setting for learning, facilitates global connection, supports self-paced learning, and promotes practical knowledge, all of which are critical components of excellent postgraduate education.

B. Statement and Author's Declaration

As the authors of the following paper, "Availability, Use of Instructional Resources and Academic Performance of Library and Information Science Postgraduates in South-South, Nigeria," we therefore declare,

1. The purpose of our study is to look into the relationship between postgraduate students in the South-South region of Nigeria who specialize in library and information science and their academic performance and the availability and usage of instructional resources.
2. With this study, we aim to investigate how postgraduate students studying library and information science are affected academically by the availability and use of teaching resources, such as digital materials, lab equipment, and textbooks.
3. Using well-established theories and research techniques, we carry out an extensive examination of the complex relationships that exist between academic achievement and instructional resources in the context of library and information science education in the South-South area of Nigeria.
4. We collected and analyzed data from a sample of postgraduate students participating in Library and Information Science programs at various universities in the South-South area of Nigeria using questionnaire, and statistical analysis techniques as part of our research approach.
5. By abiding by moral principles, protecting confidentiality, and truthfully disclosing our results, we are dedicated to guaranteeing the integrity and rigor of our research.
6. We recognize the possible ramifications of our research findings for decision-makers, instructors, and other stakeholders in the field of library and information science education in Nigeria, and we are committed to sharing our findings to support continuing conversations and projects meant to enhance academic performance in the area.

VIII. CONCLUSION

Based on the in-depth examination of instructional resources in the context of effective teaching, several notable findings have emerged. Firstly, a diverse array of

instructional resources, such as textbooks, laboratory equipment, reference cards, real-life examples, interactive apps, measurement tools, visual aids, ICT facilities, audio-visual materials, hands-on materials, and online resources, has been identified as necessary for effective teaching. However, there is a low overall extent to which these resources are made available to postgraduate students. Despite the limited availability, these identified instructional resources are perceived to offer substantial benefits for the effective teaching and learning of postgraduate students. These advantages range from facilitating global connectivity to promoting self-paced learning, providing practical knowledge, improving skills, enhancing the learning experience, making education more accessible, supporting research and innovation, and promoting multidisciplinary learning. Consequently, it is concluded that the provision of these instructional resources is a prerequisite for effective teaching at the postgraduate level, as they play a crucial role in enhancing the classroom experience and complementing the teacher's efforts. This underscores the importance of ensuring a higher availability of resources, as it is associated with better academic outcomes. In essence, the study emphasizes the crucial role that a well-equipped learning environment with diverse instructional resources plays in fostering effective teaching and improving the academic performance of postgraduate students.

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