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LEVEL OF AWARENESS AND USAGE OF CLOUD RESOURCES BY LECTURERS IN SOUTH-SOUTH, NIGERIA FOR EDUCATIONAL DEVELOPMENT

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Abstract: *This study examined level of awareness and utilization of cloud resources among lecturers in South-South, Nigeria. Two research questions and two hypotheses were formulated to guide the study. Survey research design was adopted, the Population of the study consists of all the lecturers in Federal Universities in South-South, Nigeria during the 2022/2023 academic session. 350 (167 male & 183 Female) lecturers constitute the sample size of the study, this was arrived at using simple random sampling technique. A structured questionnaire tagged Lecturers Awareness and Utilization of Cloud Resources for Educational Development Questionnaire (LAUCREDQ) was used for data collection and was validated by two experts. 30 respondents which were not part of the study were used to obtained reliability index of 0.75 using Cronbach's Alpha. The data collected were analyzed using descriptive statistics to answer the questions while the independent t-test was used to test the hypotheses at 0.05 level of significance. The results revealed among others that there was no significant difference in the opinions of male and female lecturers on their awareness and utilization of cloud resources in Federal Universities in South-South, Nigeria. It was concluded that Cloud resources, which include tools for personal publishing, networking, and interactive learning, are essential for contemporary educational practices.*

Keywords: *cloud, resources, ICT, educational development*

Introduction

In the field of Information and Communications Technology (ICT), the term Cloud Computing is one of the important terms used. Cloud computing is a kind of computing technology which facilitates in sharing the resources and services over the Cloud rather than having these services and resources on local servers/nodes or personal devices. People all over the world are adopting new technologies in order to fulfil their needs and one major benefit of technology nowadays is the ability to process a large amount of data at lightning speeds, which also requires a larger capacity for data storage. Cloud computing has brought remarkable technological advancement and transformation in every field of our endeavour, as such; it has attracted much attention in both commercial and academic settings. According to Hussein and Mohamed (2015) Cloud Computing is an exciting technological breakthrough and a compelling

discipline that has already exhibited profound implications on how we work, collaborate and share knowledge and it could bring several benefits to an educational institute (Abba and Bakon, 2016). Remarkably, this happens regardless of the geographical and temporal space in which knowledge seekers and knowledge providers physically exist. With low financial budget and limited available resources, education sector can become level one beneficiary of cloud computing.

Cloud computing is an extension of the concept of distributed computing – which is the process of running a program or application over many computers connected by a network. The Cloud makes this process easily achievable even for the general user. Maaref (2022) defined Cloud computing as a model for enabling network users' on-demand access to a shared pool of configurable computing resources that can be rapidly provisioned and released to the client without direct service provider interaction. Cloud computing refers to both the applications delivered as services over the Cloud and the hardware and systems software in the datacenters that provide those services. According to Mell and Grance (2021), the National Institute of Standard and Technology (NIST) provided the formal definition of cloud computing as a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. Cloud computing is made possible with the aid of cloud resources.

Cloud resources are information carrying resources which are made available and accessible to users through the use of computer and similar devices in a cloud environment, they include e-books, e-journal, and online databases. Cloud services refer to all the cloud facilities that assist in communication and collaboration, they include e-mail, File Transfer Protocol (FTP), Bulletin board, Discussion group, chart rooms Newsgroup, Telnet, and Usenet. Cloud resources and services are capable of providing Nigerian researchers and scholars, the enabling environment to overcome the barriers of communication and collaboration and also provide scholars, researchers, individuals and their organization the advantage of presenting their research findings and ideas, in which according to (Worldometers, 2015) Nigeria with a population of 184,608,768 people is number one country in Africa and number eight in the world with 65,675,984 Internet users (Internet World Stats, 2015). Ogunjobi and Fagbami (2022) confirmed that the cloud resources and services enable: lecturers to update their knowledge, prepare up-to-date lecture notes for their students, download free e-books and e-journals, use e-mail for communication and collaboration with colleagues. Through the use of the cloud resources and services, lecturers keep abreast with research and development in their fields of study, bringing them fame, recognition improving their institutional ranking and ensure regular promotions to higher academic positions.

Onwubiko (2022) observed that the cloud resources and services provides essential ingredients for enhancing both the research efforts of academics and indeed their level of intellectual development in the global village of knowledge management, from this inference drown, it will be equally understood that the use of the Cloud resources and services will help to

improve the quality of academic research as well increase lecturers' level of intellectualism. One of computing technologies which is very popular in the present time is Cloud Computing Technology. It is very crucial technology for the nation's development, especially in the education (Henderson, 2020).

Education is the process of educational development, training, and educational development, especially for schools andcolleges, to improve knowledge and develop skills (Hornby, 2000). It is the process of increasing the knowledge, skills and the capability of people through formal and informal education (Inegbedion, 2022). Educational development encompasses a broad range of concepts and practices aimed at improving the quality, accessibility, and relevance of education at all levels. It involves efforts to enhance educational development and educational development processes, curriculum design, educational infrastructure, and policies to meet the evolving needs of learners and society. This process could be facilitated by a lecturer. A lecturer is a university teacher. Lecturer can enhance educational development by fostering collaboration, improving accessibility, increasing scalability, ensuring data security, integrating educational technologies, and promoting personalized educational development experiences by leveraging on cloud resources. Cloud resources could offer opportunities for teachers to engage in professional development through online courses, webinars, and collaborative communities. They can access educational resources, share best practices, and collaborate with colleagues worldwide, fostering continuous educational development and improvement. Also, Cloud resources can be integrated with a wide range of educational apps and tools, enhancing educational development and educational development experiences. Teachers can integrate interactive multimedia content, educational games, assessment tools, and simulations seamlessly into their lessons.

Cloud resources such as Google Drive, Dropbox, or OneDrive could enable teachers to store educational resources, lesson plans, presentations, and multimedia content securely in the cloud. These resources can be accessed from any device with a Cloud connection, promoting flexibility and accessibility. Likewise, Cloud resources like Google Workspace (formerly G Suite) and Microsoft 365 provide tools like Google Docs, Sheets, and Slides or Microsoft Word, Excel, and PowerPoint, could enable real-time collaboration among students and teachers. Teachers can create, share, and edit documents with students, fostering collaborative educational development environments. Cloud-based educational development management systems (LMS) such as Moodle, Canvas, or Blackboard can allow lecturers to conduct classes remotely. Lecturers can upload course materials, assignments, quizzes, and host virtual classrooms, facilitating distance teaching and learning for educational development.

Bankole and Oludayo (2022) maintain that Universities globally made a lot of investment on the provision of Cloud access because it saves time in the production and utilization of knowledge. It also promotes multi-disciplinary research, fosters cooperation, and facilitates information sharing and exchange of ideas among researchers from various institutions, nations or regions. Imhonopi and Urim (2022) observe that academics from tertiary institutions in developed nations depended on Cloud resources and services for educational development and

research activities, which makes their research output visible and accessible globally. This is contrary to what is obtainable in developing or undeveloped nation like Nigeria. The need to use the Cloud resources and services towards getting current and relevant information for the purpose of academic activities, research, publication communication, and collaboration activities can be seen from the efforts and initiatives put in place by the Nigerian government through the National Universities Commission (NUC), in the creation of Nigerian Universities Network (NuNet) and subsequently the National Virtual Library Project (NVLP) is a step towards the proper utilization of the Cloud resources and services by University lecturers for the enhancement of academic activities. Ani (2022) observes that the National Virtual Library Project (NVLP) was established to enhance access to the use of Cloud resources and services in the Universities across the country.

According to Isah (2020) despite, numerous efforts put in place by the federal government of Nigeria, tertiary institutions are yet to seize this opportunity. This may be largely due to inadequate facilities, lack of maintenance and lack of awareness or required skills to make use of the limited facilities. Academic staff of tertiary institutions are expected to make proper use of the Cloud resources for their academic activities because of the vast and up to date information that can be obtained from them, they are also expected to make proper use of Cloud services so that they will have effective communication with their colleagues and other researchers around the globe. Observation has shown that academic staff in some tertiary institutions in South-South, Nigeria are not making proper use of the Cloud resources educational development instead they use the resources for non-academic purposes, such as chatting and sharing pictures, hence the need to carry out this study.

Statement of the problem

The emergence of Information and Communication Technologies (ICT's) particularly the cloud computing has brought about a remarkable shift from the use of print to electronic resources of recent, with this trend, information whether scholarly or otherwise is produced electronically or digitally. The cloud resources and services are very important for educational development by lecturers because of their awareness and access toward Information and Communication Technology (ICT). Ogunjobi and Fagbami (2022) confirm that Cloud resources and services enable lecturers to update their knowledge, prepare up-to-date lecture notes, communication and collaboration with colleagues. However, observation by the researchers have shown that lecturers of tertiary institutions in South-South universities are likely not aware and have utilize on the cloud resources for educational development like educational development, research, communication, collaboration, and publication, rather they use the resources for other activities. It is in this vain the study was conducted to investigate the level of awareness and utilization of the cloud resources by lecturers in South-South universities for educational development.

Objectives of the study

The aim of this study is to assess level of awareness and usage of cloud resources by lecturers in South-South, Nigeria for educational development. Specifically, the objectives of the study are to:

1. Determine the level of awareness of cloud resources by lecturers in South-South, Nigeria for educational development.
2. Assess the level of usage of cloud resources by lecturers in South-South, Nigeria for educational development.

Research Questions

1. What is the level of awareness of cloud resources by lecturers in South-South, Nigeria for educational development?
2. What is the level of usage of cloud resources by lecturers in South-South, Nigeria for educational development?

Research Hypotheses

1. There is no significant difference between mean response of male and female lecturers on the level of awareness of cloud resources by lecturers in South-South, Nigeria for educational development.
2. There is no significant difference between mean response of male and female lecturers on the level of usage of cloud resources by lecturers in South-South, Nigeria for educational development.

Methodology

The design adopted for this study is the survey research design. The Population of the study consists of all the lecturers of Federal Universities in South-South, Nigeria. 350 (167 male & 183 Female) lecturers constitute the sample size of the study, this was arrived at using simple random sampling technique to select fifty lecturers from seven Federal Universities in South-South, Nigeria. The instrument for Data collection was research-made structured questionnaire, tagged Lecturers Awareness and Utilization of Cloud Resources for Educational Development Questionnaire (LAUCREDQ), which is made up of 40 items. The 30 items in questionnaire covered the level of awareness and utilization of Cloud Resources for Educational Development which was developed on a four point rating scale. The questionnaire had three Sections A, B and C which corresponded to the research questions. For research question one and two rating scale was as follow. Very High Level (VHL) - 4 points; High Level (HL) - 3 points; Low Level (LL) - 2 points; Very Low Level (VLL) -1point. In order to ensure content and face validity of the instruments, draft copies were given to three lecturers for face validation, two lecturers from the Department of Psychological Foundations of Education, Faculty of Education, University of Uyo and one lecturer from Department Computer Education in the same University. All comments and corrections were reflected in the final form of the instruments. The instrument was administered personally by the researcher to 30 respondents which were not part of the sample size and the data obtained were analyzed using Cronbach's Alpha reliability coefficient package using SPSS 25. The reliability coefficient of 0.75 was obtained. This coefficient shows

that the instrument was reliable for the study. All the copies administered were returned with valid responses. The data generated from the retrieved instrument were analyzed using descriptive statistics to answer the research questions, while the independent t-test was used to test the hypotheses at 0.05 level of significance.

Results

Research Question 1

What is the level of awareness of cloud resources by lecturers in South-South, Nigeria for educational development?

Table 1: Frequency Counts, Mean and Standard Deviation on Level of Science Teacher Trainee's Awareness of Cloud resources Tools For Educational development Process in Akwa Ibom State. (N=120)

S/N	Items	VHL	HL	LL	VLL	Mean	Std. Dev.
1.	I am aware that cloud resources enable the sharing of lesson content.	59	36	13	13	3.18	1.00
2	I understand that Facebook is a free collaborative cloud tool that provides a stress-free environment for educational development.	62	42	11	5	3.34	0.81
3	I am aware that Dropbox is an excellent cloud file hosting service that supports transactional educational development.	28	63	19	10	2.91	0.85
4	I know that Skype, as a cloud service, can be used to share video lesson content.	32	51	25	12	2.86	0.93
5	I am not familiar with the potential of using WhatsApp, a cloud-based messaging service, for educational development and the educational development process.	30	57	16	17	2.83	0.96
6	I do not have sufficient knowledge of how to effectively use Instagram, a cloud-based platform, as a tool for educational development. I am unaware of the potential of using Google Talk, a cloud communication service, in the educational development process.	27	56	23	14	2.80	0.92
7	I do not have knowledge of the potential of using MySpace, a cloud-based platform, in educational development.	25	58	21	16	2.77	0.93
8	I am aware that Twitter, a cloud-based social media platform, can be used to share lesson content.	26	55	21	18	2.74	0.97
9	I know that blogs, hosted on cloud platforms, can be used to share video lesson content.	61	31	15	13	3.17	1.02
10	I understand how to effectively use Email, a cloud-based communication tool, in educational development.	58	26	20	16	3.05	1.09
11	I am not aware of the potential of using Wikis, cloud-based collaborative tools, in educational development.	52	29	21	18	2.96	1.10

12	I do not have knowledge of how LinkedIn, a cloud-based professional networking platform, can be used in the educational development process.	69	39	7	5	3.43	0.79
13	I am unaware of the potential of using Flickr, a cloud-based photo sharing service, in educational development.	17	25	47	31	2.23	0.99
14	I know that YouTube, a cloud-based video sharing platform, can be used to share lesson content.	25	41	39	15	2.63	0.95
15	I am aware that cloud resources enable the sharing of lesson content.	71	37	9	3	3.47	0.74
	Grand Mean					**2.96**	**0.94**

Table 1 shows the frequency counts, mean and standard deviation on the level of lecturers awareness of Cloud resources tools for educational development South-South Nigeria. The result shows that the grand mean of respondents over the level of lecturers awareness of Cloud resources tools for educational development South-South Nigeria was 2.96 and standard deviation of 0.94. Participants responded most positively to the item that stated "I am aware that YouTube, a cloud-based video sharing platform, can be used to share lesson content" (M = 3.47, SD = 0.74), this was followed by "I am not aware of the potential of using Wikis, cloud-based collaborative tools, in educational development" (M = 3.43, SD = 0.79). The participant also responded high to the item that stated that "I understand that Facebook is a free collaborative cloud tool that provides a stress-free environment for educational development" (M= 3.34, SD=0.81), and the least positive to the item that stated "I do not have knowledge of how LinkedIn, a cloud-based professional networking platform, can be used in the educational development process" (M= 2.23, SD= 0.99).The mean scores for all items were high and since the grand mean is greater than 2.5, the result shows that there is a high of level of lecturers awareness of Cloud resources tools for educational development South-South Nigeria. The grand mean of 2.96 indicates a moderate overall awareness level among the lecturers regarding the use of cloud resources for educational development. The standard deviation of 0.94 across all items suggests a moderate variation in responses, indicating some consistency in the awareness levels but with notable differences in certain areas.

Research Question 2

What is the level of usage of cloud resources by lecturers in South-South, Nigeria for educational development?

Table 2: Mean and Standard Deviation on Level of lecturers Utilization of Cloud resources For Educational development

S/N	Items	VHL	HL	LL	VLL	Mean	Std.
1	I use cloud resources to share lesson content with learners	7	22	53	38	1.98	0.86
2	I utilize cloud-based platforms like	24	47	33	16	2.66	0.95

	Facebook to create a collaborative and stress-free environment for educational development						
3	I utilize Dropbox as an engaging cloud storage service to enhance the delivery of educational development	8	25	48	39	2.02	0.90
4	I do not utilize cloud-based video conferencing tools to share lesson content with my colleagues	58	48	9	5	3.33	0.79
5	I leverage WhatsApp as a cloud-based resource for advancing my educational development and facilitating educational processes	30	45	26	19	2.72	1.01
6	I enjoy utilizing cloud-based platforms like Instagram for fostering engaging educational development, sharing information, and facilitating collaboration among educators	12	20	48	40	2.03	0.95
7	Lecturers frequently leverage cloud resources like Google Talk to enhance the quality of education within the educational development process	12	28	48	32	2.17	0.94
8	I utilize cloud resources for my own educational development, allowing me to learn and grow within an e-learning environment	7	19	51	43	1.92	0.87
9	predominantly utilize cloud platforms, such as Twitter, to disseminate educational materials to students, aiming to foster a positive shift in their approach towards acquiring knowledge	3	22	69	26	2.02	0.71
10	I utilize faculty blogs as a platform for sharing video lessons and facilitating user engagement	4	14	53	49	1.78	0.78
11	I employ cloud resources, such as email, to enhance educational development and streamline the educational improvement process	8	5	80	27	1.95	0.73
12	I integrate cloud-based resources like Wiki into my teaching practices to advance educational development	77	34	9	-	3.57	0.63
13	I utilize cloud-based platforms like Flickr for collaborating with colleagues and sharing educational materials.	42	26	33	19	2.76	1.10

14	I leverage cloud resources like LinkedIn to disseminate educational materials and engage with fellow educators regarding lesson content	16	15	46	43	2.03	1.01
15	I leverage cloud-based resources, such as YouTube, for disseminating educational content	24	31	46	19	2.50	0.99
	Grand Mean					**2.36**	**0.88**

Table 2 shows the frequency counts, mean and standard deviation on the level of lecturers utilization of Cloud resources for educational development process in South-South Nigeria. The result shows that the grand mean of respondents over the level of lecturers utilization of Cloud resources for educational development process in South-South Nigeria was 2.36 and standard deviation of 0.88. Participants responded most positively to the item that stated "I integrate cloud-based resources like Wiki into my teaching practices to advance educational development" (M = 3.57, SD = 0.63), this was followed by "I do not utilize cloud-based video conferencing tools to share lesson content with my colleagues" (M = 3.33, SD = 0.79). The participant also responded high to the item that stated that "I leverage WhatsApp as a cloud-based resource for advancing my educational development and facilitating educational processes" (M= 2.72, SD= 1.01), and the least response to the item that stated "I utilize faculty blogs as a platform for sharing video lessons and facilitating user engagement" (M = 1.78, SD= 0.78).Since the grand mean of 2.36 is lesser than 2.5, the result shows that there is a low level of lecturers utilization of Cloud resources tool for educational development process in South-South Nigeria. These findings provide insights into the preferences and practices of lecturers regarding the integration of cloud technologies into their educational activities, highlighting both popular and less-utilized platforms.

Hypothesis 1

There is no significant difference between mean response of male and female lecturers on the level of awareness of cloud resources by lecturers in South-South, Nigeria for educational development.

Table 5: Summary of Independent T-Test on the Difference in the Opinion of Male and Female lecturers on their Level of Awareness of Cloud resources Tools

Variable	Gender	N	Mean	SD	df	t-cal	p-value	Decision
Awareness of cloud resources	Male	167	45.04	3.21	118	1.95	0.96	Accepted H_{01}
	Female	183	43.85	3.34				

The result in table 3 revealed that the calculated t-value of 1.95 with a p-value of 0.96 at .05 level of significance and at 118 degrees of freedom. Since the p-value is greater than the level of significance, the

null hypothesis one was accepted. This implies that there is no significant difference in the opinions of male and female lecturers on their level of awareness of Cloud resources for educational development. This result shows that the level of awareness of Cloud resources for educational development is at the same pace.

Hypothesis 2

There is no significant difference between mean response of male and female lecturers on the level of usage of cloud resources by lecturers in South-South, Nigeria for educational development.

Table 6: Summary of Independent T-Test on the Difference in the Opinions of Male and Female lecturers on their Level of Utilization of Cloud resources

Variable	Gender	N	Mean	SD	Df	t-cal	t-crit	Decision
Utilization of Cloud Resources	Male	167	32.75	4.78	118	1.54	.90	Accepted H_{02}
	Female	183	33.87	3.14				

The result in table 4 revealed that the calculated t-value of 1.54 with a p-value of 0.90 at .05 level of significance and at 118 degrees of freedom. Since the p-value is greater than the level of significance, the null hypothesis one was accepted. This implies that there is no significant difference between mean score of respondents on utilization of Cloud resources for educational development among male and female lecturers in South-South Nigeria. This result shows that the level of utilization of Cloud resources for educational development is at the same pace.

Discussion of Findings

The result in table 3 revealed that the calculated t-value of 1.95 with a p-value of 0.96 at .05 level of significance and at 118 degrees of freedom. Since the p-value is greater than the level of significance, the null hypothesis one of no significant difference was accepted. This implies that there is no significant difference in the opinions of male and female lecturers on their level of awareness of Cloud resources for educational development. This result shows that the level of awareness of Cloud resources for educational development is at the same pace. This result shows that the level of awareness of Cloud resources tools for educational development process is at same pace. Cloud resources provide a level user interaction and offered a free service, sites, like Wikipedia and Facebook have grown at amazing fast rates (Berk, 2016). Teacher trainees used Web 2.0 tools for publishing their personal view, network with other students and promote student-centered interaction (Itighise & Thomas, 2022).

The result in table 4 revealed that the calculated t-value of 1.54 with a p-value of 0.90 at .05 level of significance and at 118 degrees of freedom. Since the p-value is greater than the level of significance, the null hypothesis one was accepted. This implies that there is no

significant difference between mean score of respondents on utilization of Cloud resources for educational development among male and female lecturers in South-South Nigeria. This result shows that the level of utilization of Cloud resources for educational development is at the same pace. Cloud resources adoption indicates that developing interactive, technology-rich curricula is suitable for preparing students for the present complex world (Mohammad, 2021).

Conclusion

Overall, the study's results suggest that there is no notable disparity in the understanding and utilisation of Cloud resources for educational growth between male and female professors in South-South Nigeria. The findings, shown by the t-values and p-values beyond the .05 threshold of significance, confirm the acceptance of the null hypotheses. This indicates that both male and female instructors have a comparable degree of consciousness and equally participate in utilising Cloud resources, which improves educational processes by facilitating user engagement and promoting student-centered learning.

Moreover, the widespread use of Cloud resources by lecturers demonstrates the possibility of creating engaging and technologically advanced courses. This method is crucial for providing students with the necessary abilities required in the contemporary intricate and rapidly changing environment. The research supports the idea that Cloud resources, which include tools for personal publishing, networking, and interactive learning, are essential for contemporary educational practices. Therefore, educational institutions should persist in endorsing and encouraging the utilisation of Cloud resources to cultivate an all-encompassing and cutting-edge learning environment.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. The findings established a generally low usage of Cloud resources for educational development and educational development process in the university. There is therefore a need for institutional policy on the integration of Cloud resources in educational development and educational development activities.
2. Curriculum developers should incorporate Cloud resources into the teaching and learning process. This integration will help in creating interactive, technology-rich educational experiences that are essential for preparing students for the demands of the modern world.
3. Educational institutions should develop and implement comprehensive training programs for lecturers to further enhance their skills and knowledge in using Cloud resources. This will ensure that all lecturers, regardless of gender, can maximize the benefits of these tools for educational development.

4. Institutions should ensure that both male and female lecturers have equal access to Cloud resources and related technologies. This can be achieved by providing necessary infrastructure, technical support, and equal opportunities for professional development.
5. Institutions should encourage lecturers to use Cloud resources to foster collaborative learning environments. By promoting the use of platforms that enable personal publishing, networking, and student-centered interactions, educators can enhance student engagement and learning outcomes.

References

Hussein, A., & Mohamed, N. (2015). "Cloud computing for higher education: A roadmap". Journal of Information Technology Education: Research, 14, 383-400.

Abba, S. M., & Bakon, M. (2016). "Assessing the awareness and adoption of cloud computing in higher education institutions in Nigeria". International Journal of Advanced Research in Computer Science, 7(7), 73-78.

Maaref, A. (2022). "The role of cloud computing in educational development: A systematic literature review". International Journal of Cloud Applications and Computing, 12(1), 78-93.

Mell, P., & Grance, T. (2021). "The NIST definition of cloud computing (Special Publication 800-145)". National Institute of Standards and Technology, 53(6), 50-60.

Worldometers. (2015). "Nigeria Population". Retrieved from https://www.worldometers.info/world-population/nigeria-population/

Ogunjobi, O., & Fagbami, T. (2022). "Cloud computing adoption in Nigerian universities: A case study of selected universities in South-South Nigeria". Journal of Information Technology and Economic Development, 13(2), 112-129.

Onwubiko, O. (2022). "Cloud computing and education in Nigeria: Challenges and opportunities". African Journal of Educational Management, Leadership, and Research, 7(3), 45-58.

Henderson, T. (2020). "Cloud computing in higher education: A review of literature and a research agenda". Journal of Information Technology Education: Innovations in Practice, 19, 215-232.

Hornby, A. S. (2000). "Oxford advanced learner's dictionary of current English" (6th ed.). Oxford University Press.

Inegbedion, H. E. (2022). "Cloud computing adoption in Nigerian higher education: A case study of South-South Nigeria". International Journal of Education, Information Technology, and E-Learning, 12(3), 91-105.

Bankole, O., & Oludayo, O. (2022). "Assessment of cloud computing awareness among lecturers in South-South, Nigeria". Journal of Emerging Trends in Computing and Information Sciences, 13(4), 295-302.

Imhonopi, D., & Urim, U. (2022). "Cloud computing adoption by lecturers in Nigerian universities: A case study of selected universities in South-South, Nigeria". International Journal of Advanced Research in Computer Engineering & Technology, 11(3), 47-56.

Ani, E. C. (2022). "Cloud computing adoption and usage by lecturers in higher education institutions in South-South, Nigeria". International Journal of Innovative Research and Advanced Studies, 9(4), 12-23.

Isah, H. (2020). "Adoption of cloud computing in education: A review". Journal of Educational Technology Systems, 49(4), 459-476.

Berk, R. A. (2016). "Are lectures and active learning mutually exclusive?". Active Learning in Higher Education, 17(2), 133-147.

Itighise, G., & Thomas, K. (2022). "Cloud computing usage among lecturers in Nigerian universities: A case study of South-South, Nigeria". International Journal of Computer Applications, 187(3), 24-31.

Mohammad, R. (2021). "Cloud computing and its implications for higher education in Nigeria". International Journal of Educational Technology in Higher Education, 18(1), 1-15.