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Information Literacy Skills and Digital Information Resources Use by Science Lecturers in Federal Universities in Southwest, Nigeria

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Abstract

In the digital era, the ability to find, assess, and use digital material successfully is no longer optional for university lecturers, including those in science disciplines. This study therefore examined information literacy skills and digital information resources use by science lecturers in Federal Universities in Southwest Nigeria. A correlational research design was used for the study. The population comprised 467 science lecturers in the federal universities in Southwest Nigeria, i.e. one federal university in each of the six states, using a purposive sampling technique. The main instrument used for data collection was a questionnaire adapted from the Big6 model developed by Eisenberg and Berkowitz (1992). A total of four hundred and sixty-seven (467) questionnaires were administered out of which three hundred and thirty-six (336) were returned, and only three hundred and sixteen (316) were found useful for the study. The findings revealed that among the big6 information literacy skills subcomponent, synthesis had the highest weighted average of ($\bar{x}$=3.90). Also, under the component of task definition, the science lecturers can recognize a need for information and data to achieve a specific task ($\bar{x}$=3.73). The study further revealed that the majority of science lecturers use e-journal 310(98.1%), e- books 310(98.2%), e-thesis/dissertation 310(98.2%) and e- conference proceedings 304(96.2). Additionally, there was a significant positive relationship between information literacy skills and digital information resources use ($r = .132$ at $p < .05$). The study concluded that although the sciences lecturers exhibit a solid foundation in information literacy, especially in the areas of task definition and synthesis, they have significant shortcomings in advanced search tool utilisation, accessibility awareness, and in-depth critical reading/analysis. Hence, recommended that hands-on training on advanced web navigation, effective use of live links, and useful techniques for exploring a variety of online platforms beyond basic searches should be organised by the universities, probably through the library.

Keywords: Information literacy, Information Literacy Skills, Digital Information Resources use, Science Lecturers, Federal Universities

INTRODUCTION

The proliferation of information in the 21st century, often referred to as the information age, has significantly transformed the landscape of academia.

Higher education institutions, particularly universities, are at the forefront of knowledge creation, dissemination, and utilization. In this dynamic environment, effective engagement with information is therefore no longer a luxury but a fundamental requirement for academic success and research productivity. As the digital era has transformed information access, digital resources are now essential in academia, especially for

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scientific research and instruction. The ability to find, assess, and use digital material successfully is no longer optional for university lecturers, including those in science disciplines. This is because science requires careful observation, record keeping, logical and mathematical reasoning, experimentation, imagination, creativity and submitting conclusions to the scrutiny of others.

This necessitates a strong foundation in information literacy skills, which encompass the ability to recognize when information is needed, and to effectively and efficiently locate, evaluate, use, and communicate that information ethically and legally (Association of College and Research Libraries, 2016). These skills will enable science lecturers to think analytically, critically, creatively and make decisions in scientific and other contexts. It is now a basic necessity for being up to date in their fields. Additionally, the advent of Information and Communication Technology (ICT) has broadened the scope of information sources (print and digital formats) available to all including science lecturers in this digital age.

Digital information resources have grown exponentially as a result of the digital revolution and have also been complementing or completely replacing printed resources. These resources, which include digital archives, online databases, e-books, e-journals, and other web-based platforms, have become essential tools for research, education, and learning. They provide previously unheard-of access to a wide range of scholarly content, going beyond the conventional constraints of physical libraries and opening up possibilities for knowledge to be accessible to everyone.

Information literacy skills on the other hand are one of the essential skills for science lecturers to make use of digital information resources because it enables them to create a search, discover suitable information sources, choose the correct search tools, make use of the appropriate search approach, and enable them to appraise the searched outcomes. At the same time, information literacy skills will enable science lecturers to utilize digital information resources on the internet as well as access digital databases (Adeleke & Emeahara, 2017). To use the available digital information resources, science lecturers must acquire and use the skills to explore them; this will help them to effectively search and have access to needed information.

Information literacy skills are the basis for identifying, locating, accessing, evaluating and retrieving information in an online environment. Information literacy skills combine several other skills such as critical thinking skills, research skills, ICT skills, problem-solving skills and communication skills to be successful in solving problems or executing a task. Information literacy skills presuppose that an information seeker knows when information is needed, accessed, evaluated, used, and disseminated, especially in a digital environment, to solve a particular problem for teaching and research purposes.

Despite the various benefits that accrue from utilizing digital information resources, Omosekejimi, Eghworo & Ogo (2015) revealed that many information seekers do not access the resources due to the inadequacy of the resources, lack of awareness and lack of the requisite skills to exploit digital information resources. While the availability of digital resources has increased, factors like inconsistent internet connectivity, limited access to paid online databases, and potential inadequate formal training in digital information retrieval and evaluation can pose significant challenges. As the interaction between information literacy skills and the use of digital information resources is especially critical for science lecturers in federal universities in South-West Nigeria, whose roles as educators and researchers demand constant engagement with the latest scientific discoveries, methodologies, and scholarly discourse.

The choice of Federal universities in Nigeria is essential because they serve as fundamental components of Nigeria's higher education framework, receiving public funding and providing affordable tuition, which draws a varied demographic of students and faculty nationwide. Additionally, because it has a nationwide presence and represents various academic disciplines, it allows the findings to be more generalizable within the federal university system and potentially informing policy and training programs across Nigeria. However, in many academic settings, including federal universities in South-West Nigeria, the full potential of digital information resources (DIRs), such as e-journals, online databases, and open-

access repositories, is still not fully utilized as expected by science lecturers, despite their increasing availability probably as a result of inadequate information literacy skill. Therefore, the study intends to look at the information literacy skills and digital information resources utilisation by science lecturers in Federal Universities in Southwest Nigeria.

Statement of the Problem

University lecturers, including science lecturers, are saddled with the responsibilities of teaching, research and community services. To effectively and efficiently carry out these functions, lecturers, including those in the sciences, require locating, evaluating, organizing, using and communicating information in all its various formats. Consequently, science lecturers are expected to be highly skilled in accessing and utilizing digital information resources such as e-books, e-journals, e-theses/dissertations, etc. to meet their information needs. However, it has been observed that despite the proliferation of these digital information resources (DIRs) in academic environments, science lecturers in federal universities in Southwest Nigeria perhaps continue to face challenges in the effective utilization of these resources.

While universities through the library have invested in electronic journals, databases, and institutional repositories, studies suggest that the ability of lecturers to maximize these resources depends significantly on their level of information literacy skills. Inadequate information literacy skills among science lecturers can result in underutilization of valuable digital resources, leading to poor quality of research outputs, inefficient teaching practices, and missed opportunities for innovation and collaboration. Furthermore, the rapid expansion of digital resources requires constant updating of skills to effectively filter, validate, and ethically use information in the digital age.

Therefore, this research work tends to investigate information literacy skills and digital information resources use by science lecturers in federal universities in Southwest Nigeria.

Research Questions

The following research questions guided this study;

1. What is the level of information literacy skills of science lecturers in Federal Universities in Southwest Nigeria?
2. What are the types of digital information resources use by science lecturers in Federal Universities in Southwest Nigeria?
3. What are the purposes of digital information resources used by science lecturers in Federal Universities in Southwest Nigeria?
4. What are the challenges of digital information resources use by science lecturers in Federal Universities in Southwest Nigeria?

Research Hypothesis

The following research hypothesis was tested at 0.05 level of significance

H_{01}: There is no significant relationship between information literacy skills and digital information resources use by science lecturers in Federal Universities in Southwest Nigeria.

REVIEW OF RELATED LITERATURE

Information Literacy

The emergence of digital technology has significantly altered the domain of information access and distribution, especially in higher education. This global shift therefore necessitates a corresponding evolution in the competencies of academics including science lecturers, making information literacy (IL) an indispensable skill for effective engagement with this digital environment. The Association of College and Research Libraries (ACRL, 2016) defines information literacy as the collection of integrated skills that includes the ability to discover information reflectively, comprehend the production and value of information, and use information to generate new knowledge and engage in ethical learning communities. Also, Lokse et al (2017) sees information literacy skills as the ability to use available information competently for a desired purpose.

Information literacy skills therefore include knowing when information is needed and being

able to find, access, utilize, and transmit information in a variety of formats quickly and accurately. When these skills are developed, information seekers become self-reliant, lifelong learners. Information seekers will be able to apply their knowledge from a familiar setting to a new one. Information literacy skills will help the science lecturers to navigate complex databases, separate reliable sources from false material, and keep up with rapidly evolving scientific fields. Science lecturers with high levels of information literacy skills can stay informed about new trends and engage in continuous learning to remain relevant in their fields. Trujillo et al (2020) reported that information literacy skill is an important parameter for the betterment of teaching practices. Adekunle & Ogunleye (2021) affirmed that lecturers who frequently evaluate the credibility, accuracy and relevance of information sources used in their research and teaching by checking the impact factor, peer-review status, and recency of publications. Adewale and Bamidele (2019) report that science lecturers who have been training are likely to use formal evacuation rubrics such as the Currency, Relevance, Authority, Accuracy, Purpose (CRAAP) test.

Studies examining the information literacy skills of academic staff usually presents a mixed picture. While some research indicates that lecturers generally report high levels of information literacy (Yemi-Peters, Gwarzo & Oladokun, 2024), a closer examination reveals nuances in their actual application and understanding, especially concerning digital resources. For instance, Omekwu et al. (2019) reported that despite academics in Nigeria indicating high IL rates, they did not always demonstrate a full understanding of the required skills, particularly in the context of digital information. This is further supported by findings that suggest a correlation between reported IL skills and high instances of plagiarism in the use of digital resources pointing to a potential gap in the ethical and proper utilization aspect of IL (Ahmed & Quadri, 2022).

In Pakistan, Rafique (2019) investigated faculty members' information literacy skills using a case study of the University of Lahore, Pakistan. According to the survey, most faculty members had the necessary abilities to identify whether information was needed and to properly arrange, analyze, assess, and comprehend the information that was found. The study also revealed that faculty members who could recognize and define information, locate necessary information, communicate and present the information, and assess the validity of information sources were fewer in number. Despite their tiny size, the faculty members were able to generate the necessary knowledge and use it effectively.

Similarly, Afolabi and Oladokun (2020) studies investigated the availability of information resources and information literacy skills as factors impacting the productivity of academic staff of Lead City University in Nigeria. The study's findings demonstrated a strong correlation between the research productivity of the researchers and their proficiency in information literacy. In a similar study on information literacy skills (ILS) of lecturers as correlate of utilisation of digital library resources (DLRs) in federal universities in South-South, Nigeria, the study found that lecturers often struggle with advanced database search techniques, many are proficient in basic online search strategies but lack skills in evaluating information credibility (Ikenwe & Anaehobi, n.d.).

Digital Information Resources Use by Science Lecturers'

Digital information resources (DIRs) are electronic information resources that support teaching, learning, and research in the classroom. These resources include databases, e-books, and e-journals, among others. They are accessed via internet-connected tools such as laptops, smartphones, tablets, and e-readers etc. E-journals, e-books, e-theses, e-articles, e-dissertations, e-dictionaries, e-encyclopedias, e-databases, e-newspapers, e-magazines, e-mail, internet, OPAC, and CD-ROM are among the various types of digital information resources that science lecturers can also use for their research and teaching (Verma & Laltlanmawii, 2016; Kumar, 2016). Teaching, learning and research have been made easier with digital information resources for science lecturers. Digital information resources are used to supplement printed resources as they can be accessed anywhere without a physical presence in the university library building. Furthermore,

geographical obstacles like time and distance have been overcome because digital information resources are easily available in remote regions (Khan, 2016).

In the literature several studies have been conducted to assess the use of DIRs by academic staff. For instance, in North Indian Universities, a study found out that science faculty researchers use E-journals most frequently. Other well-utilized resources included open access resources, e-books, e-newspapers, and e-theses/dissertations. The study also found out that the most important purposes for using electronic resources were to update knowledge, for writing research papers and going research work (Siwachi & Malik, 2019). Also, studies of Rahman (2025) revealed that academic staff use online journals for article writing, online databases for searching of articles, institutional repositories for research writing and online news sources for seminar paper presentation. Similarly, studies of Nwokike & Osisanwo (2020) revealed that lecturers mainly utilize search engines, Online Public Access Catalogue (OPAC), electronic journals and electronic databases.

Using DIR often comes with its own challenges for faculty members as corroborated in the study of Rostami, Hosseini, & Saberi (2022) that low internet speed, network traffic and lack of time were the main barriers and difficulties in using scientific databases and social networks. Similarly, studies of Edegbo & Emumejaye (2025) revealed that constraints encountered by science lecturers towards the utilisation of DIRs in the universities are epileptic power supply, cost of online databases, lack of formal training in internet skills among science lecturers, slow bandwidth among others.

In a related study conducted in Lesotho, Sejane (2017) discovered that some of the major obstacles are decreasing budgets, constrained internet bandwidth, outdated ICT infrastructure, inadequate searching abilities, and high subscription costs. Siwachi & Malik (2019) studies also found out the most significant problems faced by the science faculty researchers in North Indian Universities in the use of scientific databases included not having access from home, only a limited number of titles available, limited access to back issues, and retrieval of irrelevant/junk information.

Relationship between Information Literacy Skills and Digital Information Resources Utilization

A significant body of literature underscores the positive and crucial impact of information literacy skills on the effective utilization of digital information resources by lecturers, including Nigerian universities. Information literacy has been identified as a major factor enhancing the use of digital resources and revealing a significant correlation between lecturers' information literacy skills and their utilization of digital library resources (Edegbo & Emumejaye, 2025; Ikenwe & Aiyebelehin, 2024; Ikenwe & Anaeobi, n.d). Higher information literacy skill enables lecturers to more easily navigate the massive volume of digital data, identify reliable sources, and successfully incorporate pertinent items into their research and teaching (Rahman, 2025).

Academics with strong IL skills are better equipped when navigating the digital world ethically. Conversely, insufficient digital literacy can hinder lecturers from fully utilizing available digital resources, thereby impacting their productivity. Information literacy gives lecturers the skills they need to assess digital information sources critically, discern between reliable and unreliable sources, and make decisions based on solid evidence. Navigating the deluge of information available online and guaranteeing the caliber of data utilized for research and instruction require this.

Studies on information literacy skills (ILS) of lecturers as correlate of utilization of digital library resources (DLRs) in federal universities in South-South, Nigeria, has revealed that there is a significant positive relationship between lecturers skills to identify extent of information need, skills to access information, skills to evaluate information, skills to use effectively information, and skills to apply legal and social aspects of information in their utilization of digital library resources (Ikenwe & Anaehobi, n.d). A related study on the information literacy skills as predictors of the use of digital library resources by academics found out that there is a positive, but weak, relationship between the information literacy skills of university teaching staff and their usage of digital library resources (Ikenwe &Aiyebelehin, 2024). Additionally, Edegbo &

Emumejaye (2025) identified significant relationship between DIR usage and academic productivity of science lecturers in the selected universities in South-South Nigeria respectively. The study found out that information literacy essentially serves as a fundamental skill that allows science lecturers to fully utilise digital information resources, improving their research, teaching, and overall scholarly contributions.

Theoretical Framework

The theory that best describes this work is the Big 6 Model developed by Eisenberg and Berkowitz (2004), which provides a comprehensive framework for teaching and applying information problem-solving skills, guiding individuals through a structured process to effectively find, use, and manage information. As a theoretical basis, the Big6 model offers a robust lens through which to analyze the information literacy skills of science lecturers and their utilization of digital information resources. The model consists of six stages which include: task definition, information seeking strategies, location and access, use of information, synthesis and evaluation (Deepak & Sarman, 2017).

1. **Task definition**: the act of defining the problem and identifying the information need. Task definition will enable the science lecturers to express learning objectives, research questions and experiment goals (Julien, 2016).
2. **Information seeking strategies:** is the act of identifying all possible information sources and selecting the best sources for the task. This stage helps the science lecturers to examine their awareness of different online databases, e-journals, institutional repositories, and search engines, as well as their ability to select the most appropriate and authoritative sources for their specific needs.
3. **Location and access:** are the capacity to find and retrieve information from a variety of sources both physically and electronically. This relates to science lecturers' ability to use search engines, navigate university library portals, access full-text articles, and get over technical obstacles such as restricted access to subscribed databases.
4. **Use of information** is the act of engaging and extracting of information. This phase investigates the ways in which science lecturers engage with digital information resources. It assesses their proficiency in understanding intricate scientific publications such as e-journals, electronic databases, digital sources and incorporating these knowledge into lectures and research. Lecturers, especially science lecturers who make good use of information resources such as scholarly publications, textbooks, databases, and online resources are better equipped update material in their lectures (Aina, 2014).
5. **Synthesis** is the act of organizing and presenting the information gathered from various sources to create a new product or solution that addresses the original task. For science lecturers, synthesis is vital for developing new research insights, preparing comprehensive lecture materials, writing scholarly articles, and designing experiments. Ibrahim & Yusuf (2020) posited that lecturers who actively synthesis content from various information resources both physical and electronic can design more integrative course materials that can assist students in drawing connections across disciplines.
6. **Evaluation** is the act of judging both the effectiveness of the product or solution and the efficiency of the information-seeking process. This involves assessing whether the task was completed successfully and reflecting on what could be improved in future information-seeking endeavors. This stage allows for an assessment of how science lecturers critically appraise the quality and impact of the digital resources they use, and how they reflect on their own information-seeking strategies. It also touches upon their ability to evaluate the outcomes of their teaching and research based on the information utilized, and to adapt their approaches for continuous improvement.

METHODOLOGY

The design for this study was correlational research design. This design was deemed appropriate for use because it allowed the researchers to examine the relationship between information literacy skills and the digital information resources use by science lecturers in federal universities in South-West Nigeria. The population of this study comprised 467 science lecturers in the federal universities, Southwest Nigeria i.e. one federal university in each of the six states using purposive sampling technique. The population was drawn from three (3) departments: Physics, Chemistry and Mathematics in the faculty/colleges of sciences while Biology was excluded because it was not offered in some of the selected federal universities.

The main instrument used for data collection was a questionnaire adapted from the big six model developed by Eisenberg and Berkowitz (1992). A total of 467 copies of questionnaires were administered across the departments of Physics, Chemistry and Mathematics in all the federal universities in South-West, Nigeria. A total number of 336 questionnaires were returned and 316 questionnaires were found usable for the analysis. Thus giving a sample size of three hundred and sixteen science lecturers in the selected department.

The instruments were divided into four (4) sections on level of information literacy skills, types, purpose, and challenges of digital information resources use by science lecturers. Section A dealt with the level of information literacy skills of science lecturers with 30 items rated on a four Likert scale points of Very High(4), High (3), Moderate(2) and Low(1). Section B dealt with the types of digital information resources use by science lecturers with 15 items with Yes or No options. Sections C and D have to do with purpose and challenges of digital information resources use by science lecturers with 10 items each; rated on a four Likert scale points of Strongly Agree (4), Agree (3) Disagree (2) and Strongly Disagree (1). Face and content validity of the instruments were ensured. All modifications were incorporated in the final form of instrument. The instruments were administered to (30) lecturers Afe Babalola University, Ado-Ekiti who were not part of the study. The reliability of the study was determined through Cronbach's Alpha score 0.82 for information literacy skills and digital information resources use (0.72). This indicated that the instruments were reliable and suitable for the study.

All the data gathered were analyzed with Statistical Package of Social Sciences (SPSS). The research questions raised were answered using descriptive statistics of frequency count, mean and standard deviation. The research hypothesis generated was tested at 0.05 level of significance analyzed using inferential statistics of Pearson Product Moment Correlation.

RESULTS AND DISCUSSION

Research Question 1: What is the level of information literacy skills of science lecturers in federal universities in South-West Nigeria?

Results in Table 1 revealed the level of information literacy skills of science lecturers in Federal Universities in South-West, Nigeria, with an overall weighted average of ($\overline{x}$=3.17) on the scale of 4points. However, among the big6 information literacy skills, synthesis had the highest weighted average of ($\overline{x}$=3.90), followed by information seeking strategies ($\overline{x}$=3.38), followed by task definition ($\overline{x}$=3.28), followed by evaluation ($\overline{x}$=3.17), followed by location and access ($\overline{x}$=2.88) while use of information had the lowest weighted average of ($\overline{x}$=2.78). From the decision rule, it could be deduced that science lecturers in Federal Universities in South-West, Nigeria had high level of information literacy skills.

Table 1. Level of Information Literacy Skills of Science Lecturers.

S/N	Information Literacy Skills	Very High	High	Moderate	Low	Mean $\bar{x}$	Std Dev
	Task Definition						
1	I recognized a need for information and data to achieve a specific task	261 (82.6%)	39 (12.2%)	3 (0.9%)	13 (4.1%)	3.73	0.68
2	I cannot define my specific information resources needs.	11 (3.5%)	19 (6.0%)	224 (70.9%)	62 (19.6%)	1.93	0.63
3	I can define concepts of a topic in teaching presentation	224 (70.9%)	65 (20.6%)	12 (3.8%)	15 (4.7%)	3.58	0.78
4	I can choose range of materials on topics, taking into account currency, bias, authority, accuracy, relevance and comprehensiveness	205 (64.9%)	92 (29.1%)		19 (6.0%)	3.53	0.78
5	I can redefine/ modify the information sought on basis of material found **Weighted average: 3.28** **Information Seeking Strategies**	213 (67.4%)	93 (29.4%)	3 (0.9%)	7 (2.2%)	3.62	0.62
6	I have the ability to use truncation and Boolean search techniques	131 (41.5%)	151 (47.8%)	7 (2.2%)	27 (8.5%)	3.22	0.86
7	I can search information resources from information databases by subject, language and date	155 (49.1%)	145 (45.9%)	7 (2.2%)	9 (2.8%)	3.41	0.68
8	I have the ability to select a range of appropriate subject resources.	168 (53.2%)	122 (38.6%)	8 (2.5%)	18 (5.7%)	3.39	0.79
9	I can identify a variety of potential sources of information	167 (52.8%)	133 (42.1%)	7 (2.2%)	9 (2.8%)	3.45	0.68
10	My ability to select the most appropriate print and digital sources for remote teaching is high **Weighted average: 3.38** **Location and Access**	191 (60.4%)	93 (294%)	9 (2.8%)	23 (7.3%)	3.43	0.86
11	I can decide where and how to find the information I need	170 (53.6%)	128 (40.5%)	6 (1.9%)	12 (3.8%)	3.44	0.72
12	I lack the ability to navigate around the web using live links.	3 (0.9%)	18 (5.7%)	203 (64.2%)	92 (29.1%)	1.78	0.58
13	My understanding of issues affecting accessibility of information sources is low	27 (8.9%)	38 (12.0%)	191 (60.4%)	60 (19.0%)	2.10	0.80
14	I have the ability to construct complex searches and search across a range of databases, using different user interfaces, redefining terms and repeating searches as required	161 (50.9%)	142 (44.9%)	7 (2.2%)	6 (1.9%)	3.45	0.64
15	I have the ability to use information gateways and	210 (66.5%)	96 (30.4%)	7 (2.2%)	3 (0.9%)	3.62	0.58

	search engines to locate material for an essay topic **Weighted average: 2.88** **Use of Information**						
16	I understand the need to use information resources	252 (80.7%)	50 (15.8%)	8 (2.5%)	3 (0.9%)	3.76	0.54
17	My ability to use a library catalogue to find specific books, journal titles or books on a subject is high	212 (67.1%)	73 23.1%)	28 (8.9%)	3 (0.9%)	3.56	0.69
18	My skill on the use of appropriate search tools is low.	26 (8.2%)	35 (11.1%)	200 (63.3%)	55 (17.4%)	2.10	0.78
19	My awareness and use of different levels of searching on databases is low	23 (7.3%)	28 (8.9%)	206 (65.2%)	59 (18.7%)	2.05	0.75
20	I am unable to manage time effectively when using information sources **Weighted average: 2.78** **Synthesis**	80 (25.3%)	40 (112.7%)	143 (45.3%)	53 (16.8%)	2.47	1.05
21	I can synthesize newly gathered information with previous information	144 (45.6%)	166 (52.5%)	6 (1.9%)	0 (0.0%)	3.44	0.53
22	I do understand that existing information can be combined with original thought, experiment and analysis to produce new information	138 (43.5%)	172 (54.4%)	6 (1.9%)	0 (0.0%)	3.42	0.53
23	I can apply information resources to the problem at hand	136 (43.0%)	164 (51.9%)	0 (0.0%)	16 (5.1%)	3.44	0.58
24	I lack the ability to read, analyze and evaluate a wide range of materials	59 (18.7%)	55 (17.4%)	144 (45.6%)	58 (18.4%)	2.36	0.99
25	I have the ability to apply information for practical use **Weighted average: 3.90** **Evaluation**	164 (51.9%)	127 (40.2%)	20 (6.3%)	5 (1.5%)	3.42	0.68
26	I can assess the quality, accuracy, relevance, bias, reputation and credibility of resources found	179 (56.6%)	128 (40.5%)	9 (2.8%)	0 (0.0%)	3.54	0.55
27	I am skillful enough to determine information gateways and how they differ from search engines	170 (53.8%)	132 (41.8%)	14 (4.4%)	0 (0.0%)	3.49	0.59
28	I have the ability to reflect on problems encountered	174 (55.1%)	132 (41.8%)	10 (3.2%)	0 (0.0%)	3.52	0.56
29	I can select, retrieve and summarize information resources to suit my presentation	170 (53.8%)	141 (44.6%)	5 (1.5%)	0 (0.0%)	3.52	0.53
30	I am aware of currency, bias and authority of information resources **Weighted average: 3.51**	157 (49.7%)	149 (47.2%)	7 (2.2%)	3 (0.9%)	3.46	0.59
Over all Big6 Weighted Average: 3.17							

Research Question 2: What are the Types of Digital Information Resources Use by Science Lecturers in Southwest Nigeria, Universities?

Result in Table 2 revealed that the type of digital information resources by science lecturers in Federal Universities in South-West, Nigeria E-journal, E-books and E-thesis/dissertation while E-clippings 280 (88.6%), E-bibliography 272 (86.1%) and E-directories and Handbooks 266 (84.2%) are not used by the science lecturers. It could be deduced from the finding that e-journals, e-books, e-thesis/dissertation and e-conference proceedings were the major types of digital information resources used by science lecturers in federal universities in South-West, Nigeria.

Table 2: Types of Digital Information Resources Used by Science Lecturers

S/N	Types of Digital Information Resources Use	Yes	No
1.	E-journals	310(98.1%)	6(1.8%)
2.	E-books	310(98.2%)	6(1.8%)
3.	E-thesis/dissertation	310(98.2%)	6(1.8%)
4.	E-conference proceedings	304(96.2%)	12(3.8%)
5.	E-manuscript	134(42.4%)	182(57.6%)
6.	E-research reports	131(41.5%)	185(58.5%)
7.	E-magazine	84(26.6%)	235(73.4%)
8.	E-Newspaper	54(17.0%)	262(83%)
9.	CDs/DVDs	47(14.9%)	269(85.1%)
10.	E-encyclopedia	60(19%)	256(81%)
11.	E-Databases	54(17.1%)	262(82.9%)
12.	E-directories and handbooks	50(15.9%)	266(84.2%)
13.	E-clipping	36(11.4%)	280(88.6%)
14.	E-bibliography	44(13.9%)	272(86.1%)
15.	E-dictionary	56(17.7%)	260(82.3%)

Research Question 3: What is the Purpose of Digital Information Resources Use by Science in Federal Universities in South-West Nigeria?

Table 3 revealed the purpose of digital information resources use by science lecturers in federal universities in South-West, Nigeria. All the items, that is, items 1-10 had the mean score benchmark of ($\bar{x}$=2.50). Majorly, the purpose of digital information resources used by science lecturers was to find more information about new subjects and concepts ($\bar{x}$ = 3.71) and prepare lecture notes ($\bar{x}$ = 3.68). Other purposes are to collect data and information ($\bar{x}$ = 3.66), retrieve current literature for studies ($\bar{x}$= 3.63), gain more knowledge ($\bar{x}$ = 3.63), and support the teaching process ($\bar{x}$ = 3.63). This implied that the main purposes of digital information resources used by science lecturers in Federal Universities in South-West were to find more information about new subjects and concepts; and prepare lecture notes.

Table 3. Purpose of Digital Information Resources used by Science Lecturers.

S/n	Purpose	Strongly Agree	Agree	Disagree	Strongly Disagree	Mean $\bar{x}$	Std Dev
	The purpose of digital information resources is to:						
1	find more information about new subjects and concepts	227 (71.8%)	85 (26.9%)	4 (1.3%)	0 (0.0%)	3.71	0.48
2.	complete class assignments	201 (63.6%)	94 (29.7%)	21 (6.6%)	0 (0.0%)	3.57	0.62
3.	Search for scholarship opportunities	200 (63.3%)	96 (30.4%)	16 (5.1%)	4 (1.3%)	3.56	0.65
4.	gain more knowledge	216 (68.4%)	84 (26.6%)	16 (5.1%)	0 (0.0%)	3.63	0.58
5.	retrieve current literature for studies	208 (65.8%)	100 (31.6%)	8 (2.5%)	0 (0.0%)	3.63	0.53
6.	prepare lecture note	227 (71.8%)	77 (24.4%)	12 (3.8%)	0 (0.0%)	3.68	0.54
7.	collect data and information	215 (68.0%)	93 (29.4%)	8 (2.5%)	0 (0.0%)	3.66	0.53
8.	support teaching process	206 (65.2%)	102 (32.3%)	8 (2.5%)	0 (0.0%)	3.63	0.53
9.	update knowledge	200 (63.3%)	108 (34.2%)	8 (2.5%)	0 (0.0%)	3.61	0.54
10.	enable information resources to be accessed remotely	197 (62.3%)	19 37.7%)	0 (0.0%)	0 (0.0%)	3.62	0.49

Weighted Average 3.63 Decision rule: Means ≥ 2.50 is acceptable

Research Question 4: What are the challenges of Digital Information Resources uses by Science Lecturers in Federal Universities in South-West Nigeria?

Result in table 4 revealed the challenges of digital information resources used by science lecturers in Federal Universities in South-West Nigeria. The challenges of digital information resources used by science lecturers in Federal Universities in South-West, Nigeria are Epileptic power supply 297 (94.0%), poor internet connectivity 294 (93.0%), Non-payment of subscription 282 (89.3%) and inadequate internet access 280 (88.6%). On the contrary 216 (68.4%) believe that inadequate skills to access digital information resources is not a challenge.

Table 4. Challenges of Digital Information Resources use by Science Lecturers.

S/N	Challenges	Yes	No
1.	Inadequate skills to access digital information resources	100 (31.7%)	216 (68.4%)
2.	Inadequate internet access to digital information resources	280 (88.6%)	36 (11.4%)
3.	Poor internet connectivity	294 (93.0%)	22(7.0%)
4.	Nonpayment of subscription	282 (89.3%)	34 (1.7%)
5.	Epileptic power supply	297 (94.0%)	19 (6.0%)
6.	Slow server	276 (87.3%)	40 (12.7%)
7.	Inadequate personal computers	198 (62.6%)	118 (37.4%)
8.	Inadequate formal training in internet skills	177 (56.0%)	139(44.0%)
9.	Improper guidance on the use of digital information resources	202 (63.8%)	114 (36.2%)
10.	Non-availability of online databases	220 (69.6%)	96 (30.4%)

Testing of Hypothesis

H_{01}: There is no significant relationship between information literacy skills and digital information resources use by science lecturers in Federal Universities in South-West, Nigeria

Results of Table 5 indicated the relationship between information literacy skills and digital information resources used by science lecturers.

The table shown that there was a positive and significant relationship between information literacy skills and digital information resources used by science lecturers ($r = .132$) at $p < .05$. Thus, null hypothesis was rejected. Hence, there was a significant relationship between information literacy skills and digital information resources used by science lecturers in Federal Universities in South-West, Nigeria.

Table 5. Pearson Product Moment Correlation analysis showing relationship between information literacy skills and digital information resources used by science lecturers.

Variable	$\bar{x}$	SD	N	R	Sig.
Information literacy Skills	3.2563	.26599	316	.132**	.002
Digital Information Resources Use	3.6317	.38686	316		

** Correlation is significant at the 0.05 level (2-tailed)

DISCUSSION OF FINDINGS

The findings of the study based on the Big6 information literacy skills has been able to establish that under the component of task definition science lecturers in federal universities in southwest Nigeria can recognize a need for information and data to achieve a specific task. Additionally, under the component of use of information in the Big6 model, the science lectures in federal universities in Nigeria understand the need to use information resources component in the Big6 model. The findings further revealed that a major concern is that while lecturers can formulate complex searches, their practical navigation skills and awareness of accessibility issues seem to be significant barriers in navigating around the web using live links.

Additionally, there is a gap between theoretical knowledge of information seeking and the practical, efficient application of search tools and time management during information use by the science lecturers. These findings revealed that while a good number might recognize a gener*al* need, precisely articulating their resource need it might be a challenge for some. In general, the information literacy skills possessed by the science lecturers in Federal Universities in South-West, Nigeria were very high. This corroborates the earlier studies of Omekwu et al (2019) that despite academics in Nigeria indicating high IL rates, they did not always demonstrate a full understanding of the required skills, particularly in the context of digital information.

Findings of the study also indicated that the common digital information resources used by science lecturers were e-journals, e-books, e-thesis/dissertation and e-conference proceedings. This finding supports the study of Siwachi & Malik (2019); Nwokike & Osisanwo (2020) who found out that science faculty researchers and lecturers use E-journals most frequently and electronic databases.

On the purpose of digital information resources use by science lecturers in Federal Universities in South-West, Nigeria, findings indicated that science lecturers use digital information resources to find more information about new subjects and concepts, complete class assignments, search for scholarship opportunities, gain more knowledge, retrieve current literature for studies and prepare lecture note, collect data and information. These findings further supports the findings of Rahman (2025) who found that academic staff use online journals for article writing, online databases for searching of articles, institutional repositories for research writing and online news sources for seminar paper presentation.

The findings revealed the challenges of digital information resources used by science lecturers in Federal Universities in South-West, Nigeria. The major challenges of digital information resources encountered by science lecturers were inadequate internet access to

digital information resources, poor internet connectivity, and non-payment of subscription, epileptic power supply, slow server and inadequate personal computers. The findings affirmed Edegbo & Emumejaye (2025); Siwachi & Malik (2019) studies that the constraints encountered by science lecturers towards the utilisation of DIRs in the universities are epileptic power supply, cost of online databases, lack of formal training in internet skills among science lecturers, slow bandwidth among others.

The findings of this study further indicated that there was a significant relationship between information literacy skills and digital information resources use by science lecturers in Federal Universities in Southwest Nigeria. This indicated that science lecturers' information literacy skills have a significant influence on digital information resources. The finding was in line with the findings of Edegbo & Emumejaye (2025); Ikenwe & Aiyebelehin (2024); Ikenwe & Anaeobi, (n.d) that there is a significant positive relationship between lecturers skills to identify extent of information need, skills to access information, skills to evaluate information, skills to use effectively information, and skills to apply legal and social aspects of information in their utilisation of digital library resources. On the contrary the findings contradict the findings of Ikewe & Aiyebelehin (2024).that there is a positive, but weak, relationship between the information literacy skills of university teaching staff and their usage of digital library resources.

CONCLUSION

The study concludes that although the science lecturers in Federal universities in Southwest, Nigeria exhibit a solid foundation in information literacy, especially in the areas of task definition, seeking strategies, synthesis, and evaluation, they have significant shortcomings in advanced search tool utilisation, practical digital navigation, accessibility awareness, time management, and in-depth critical reading/analysis. The results, further, clearly show that this general high proficiency conceals particular but significant gaps in useful digital information literacy abilities. Significant shortcomings exist in the following areas: exploiting live links to navigate the web, comprehending information accessibility, effectively using a variety of search engines, doing sophisticated database searches, and critically reading and analysing a wide range of resources. To fully utilise digital information resources, these areas are essential. Furthermore, ineffective time management during information use can hinder efficient resource integration and productivity. The study further concludes that there was a positive and significant relationship between information literacy skills and digital information resources use by science lecturers in Federal Universities in South-West Nigeria.

RECOMMENDATION

Based on the findings, the study recommended that;

1. Hands-on training on advanced web navigation, effective use of live links, and useful techniques for exploring a variety of online platforms beyond basic searches should be organised by the universities, probably through the library.
2. The universities should organise seminars on how to use a greater variety of relevant search tools, beyond the fundamental Boolean operators. This ought to cover instruction on particular database interfaces, sophisticated search features, and methods for varying search levels (e.g., subject-specific vs. multidisciplinary, exact vs. broad).
3. Science departments should be actively consulted by university libraries to identify their unique needs for digital resources and to offer specialised help and direction, such as embedded librarians for research teams.
4. For easy use of digital resources, university management should ensure that there is reliable and fast internet connectivity.

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