Digital information literacy skills and use of electronic resources by humanities graduate students at Kenneth Dike Library, University of Ibadan, Nigeria

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Abstract

Purpose – The purpose of this paper is to assess the level of digital information literacy (DIL) skill and use of electronic resources by humanities graduate students at Kenneth Dike Library, University of Ibadan, Nigeria.

Design/methodology/approach – This paper uses the survey research design and 200 graduate students from the 12 departments that made up the Faculty of Arts in the University of Ibadan participated in the study. A self-devised structured questionnaire was used as instrument for data collection. A pilot questionnaire was first sent to a small random sample of the respondents, with feedback used to fine-tune the final questionnaire. Respondents were requested to rate their level of proficiency in the use of digital devices, web-based tasks, information finding, evaluation and utilisation of available e-resources and challenges encountered. Ethical consideration of informed consent, institutional permission, confidentiality and anonymity of participants was strictly followed. Data collected were analysed and result presented using descriptive statistics including frequencies, percentage, mean and inferential statistics such as regression analysis and Pearson's product moment correlation coefficient were used to test the research question and hypothesis, respectively.

Findings – Humanities graduate students at the University of Ibadan possessed high level of DIL skills in respect of digital devices usage, web-based tasks, information finding and evaluation, but low in e-resources utilisation. This study identified inadequate knowledge of e-resources availability, irregular internet access, inadequate training on e-resources utilisation, inadequate staff assistance, lack of continuity in e-resources subscription and paucity of local contents in the e-resources as main challenges encountered by graduate students in the use of e-resources. To ensure that those who can most benefit from e-resources utilisation are not further marginalised, this study recommends that active steps should be taken to increase e-resources awareness, regular internet access, training/support, continuity of e-resources subscription and increased local content so that all may benefit from the opportunities of the information age.

Originality/value – This paper has demonstrated that DIL skills can enhance effective utilisation of e-resources if users have adequate knowledge of e-resources availability, regular internet access, adequate training and assistance on e-resources utilisation, continuity in database subscription and adequate local contents e-resources.

Keywords Challenges, Digital literacy evaluation, E-resources utilisation, Humanities graduate, Information literacy, University library, Nigeria, Digital skills

Paper type Research paper

Introduction

Over the years, library resources, services and operations have been tremendously influenced by rapid technological innovations. The application of information and communication technologies (ICTs) changed the entire scenario of the library as information

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resources have moved ahead from being printed to electronic resources (e-resources) such as e-books, e-journals, e-document and e-catalogue accessible through computer devices. This wave of change triggered by advances in ICTs has greatly affected information generation, storage, accessibility, retrieval, dissemination as well as users' information skills and information-seeking behaviour (Anyim, 2019). The change in information appearance, handling, apparatus and management makes it imperative for information users to acquire a demonstrable level of information literacy skills to use resultant technology to access, find, evaluate and make effective use of embedded information resources.

E-resource, as defined by Library of Congress (2016), is any work encoded and made available for access using computer devices. It includes data or information availability by remote access and or direct access (fixed media). Remote access e-resources are data, information and knowledge accessible via computer networks. Direct access electronic resources refer to data, information and knowledge in physical carriers (e.g. compact discs read-only memory, hard discs, flash drives, etc.) designed to be inserted into a computerised device or its auxiliary equipment. Anyim (2018) describes e-resources as contents of information in a format that could be accessed through a computer or machine which in some cases require internet connections. According to Anyim (2021, p. 3), "Electronic resources encompass all materials that contain information that can be accessed through digital or online means by the support of computer technologies."

In the current era of ICTs, the importance of equipping a university library with relevant e-resources cannot be over emphasised. E-resources have become the lifeblood and one of the most essentials for all societal activities. They play a vital role in promoting learning, teaching, research and community service mandates for which universities are established. Most students use e-resources for various purposes, including assignments, literature review and research report writing, among others (Katabalwa, 2016). The use of e-resources has reduced the rigorous researchers go through in searching for printed information materials in libraries. This is because significant amount of relevant information is speedily accessible through a computer device with internet connection.

According to Ternenge and Kashimana (2019), e-resources have become primary sources of information for researchers, students and lecturers. Tekale and Dalve (2012) assert that the availability of e-resources equally help distance learners across the world to gain easy access to substantial information reservoirs. Apart from the advantage of quick access to relevant information, the navigational technologies provide different search options, easy citations of scholarly works, downloading, uploading and updating information. Other advantages include information flexibility, adaptability, storage, dissemination, timeliness, cost-effectiveness and ease of archiving. Thus, distance students can depend significantly on e-resources for accurate and timely information for their learning, research and collaboration with other students across the globe.

In the contemporary era, e-resources help to reduce pressure on university libraries for physical storage space for books and journals as it provides unlimited access to digital information for users (Lefuma, 2007). Because of the easy-to-use potentials of e-resources, library users are shifting attention from traditional library resources to electronic resources as they dominates research activities of both distance and on-campus students (Hadagali *et al.*, 2012). However accessing and using e-resources requires adequate proficiency in digital information literacy (DIL). DIL has been generally described as a set of skills required by individuals to effectively use resultant information technologies to access, find, evaluate, use and communicate information. For that reason, most university libraries have adopted electronic library section that manages e-resources and plays a supporting role of providing users the required DIL training (Zhang *et al.*, 2011).

Statement of the problem

Considering the importance of e-resources utilisation in higher education, university libraries across the world spend a lot of money for electronic database subscriptions to ensure availability, accessibility and effective utilisation of e-resources. To justify this expenditure and promote high academic achievements, it is imperative for these libraries to ensure that e-resources are optimally used by faculties, students and researchers (Ruzegea and Msonde, 2021). However, in spite of the huge amount of money spent on database subscriptions over the past decades, it is glaring that actual utilisation of e-resources in most Nigerian university libraries remains at best, inconsistent, not encouraging and a major concern to the university library administrators. Though successful case studies and examples of best practices abound within the educational technology literature, at a general level the use of electronic journals and online databases in most Nigerian universities can best be described as sporadic, uneven and often low (Madondo *et al.*, 2017).

Many writers, including Achonna (2008) and Nnadozie *et al.* (2017) have observed that e-resources are grossly under-used because most users lack inadequate DIL skills to make effective use of digital information tools and techniques which can limit their potential impact, have negative consequences for students' learning and increase educational inequalities, especially in developing countries. As Jeffrey *et al.* (2011) note that the development of DIL skills has been slow compared to changes in information communication technologies, and this has remained an issue for the higher education sector. It is against this backdrop that this paper evaluates DIL skills and use of e-resources among humanities graduate student of the University of Ibadan. The specific objectives of the study are to:

- evaluate the level of DIL skills possessed by humanities graduate students at the University of Ibadan;
- examine the level of e-resources utilisation by humanities graduate students at the University of Ibadan;
- establish the relative contribution of the levels of DIL skills to e-resources utilisation among humanities graduate students in the University of Ibadan; and
- identify the challenges of e-resources utilisation among humanities graduate students in the University of Ibadan.

Research questions

The study answers the following research questions:

RQ1. What is the level of DIL skills possessed by humanities graduate students at the University of Ibadan?

RQ2. What is the level of e-resources utilisation among humanities graduate students at the University of Ibadan?

RQ3. What is the relative contribution of the levels of DIL skills to e-resources utilisation among humanities graduate students in the University of Ibadan?

RQ4. What are the challenges of e-resources utilisation among humanities graduate students at the University of Ibadan?

Hypothesis

The following null hypothesis was formulated for the study and tested at a 0.05 level of significance:

- There is no significant correlation between DIL skills and e-resources utilisation among humanities graduate student in Kenneth Dike library, University of Ibadan, Nigeria.

Significance of the study

This study is an attempt to establish the important roles that DIL skills can play in effective utilisation of e-resources for teaching, learning and research in universities. The potential results of this study will be of immense benefit to university library managers, databases providers and other pertinent authorities for planning and decision-making on e-resources acquisition, training and utilisation among students in the university. An understanding of student's level of DIL, e-resources utilisation and challenges will help libraries to step up information literacy plans and programmes. It will help libraries to develop DIL curriculum that meets the needs of users for effective exploitation of e-resources.

Literature review

DIL evolved from the library concept of information literacy. The term "information literacy" was first coined in 1974 by Paul Zurkowski in a paper delivered at the National Commission for Libraries and Information Science. According to Badke (2010), Zurkowski emphasised the need for people to be information-literate, if they were to survive and compete in an emerging information society. In 1979, Robert Taylor in an article on the future of librarianship profession introduced and linked the library profession with information literacy (Behrens, 1994). For almost two decades, *Reference Services Review* has published annual reviews of the literature on library orientation and instruction, encompassing information literacy. Thus, many writers including Chevillotte (2007), Fidzani (2007) and Shenton (2009) have concluded that the concept of information literacy originated from librarianship practices such as library instruction, bibliographic instruction and user/reader education. Since its initiation, the concept of information literacy looms large in the literature of library and information science and academic librarianship in particular (Foasberg, 2015). It has indeed become an increasingly important concept and subject of many publications with serious impact on the educational qualification of graduates (Gunduzalp, 2021) and their preparation to use knowledge for productive ventures.

According to Shenton (2009, p. 226), "Information literacy has certainly expanded greatly in scope from its antecedents as user education or bibliographic instruction, which emphasised the exploitation of library tools, such as indexes, catalogues and classification schemes, and the use of particular types of sources, to expansive skills sets that are today permeated by a more widely applicable problem-solving perspective." The unanimous views of different scholars on the concept of information literacy have demonstrated that the term "information literacy" is not abstract or arbitrary but evolved and strengthened from substance such as library instruction/library orientation, bibliographic instruction and user education to fill an obvious vacuum in the world of information conception, acquisition and use for lifelong learning (Anunobi and Udem, 2014).

Information literacy has been variously described by writers as a set of skills, a way of thinking and social activities carried out to find, evaluate and use information. Chartered Institute of Library and Information Professionals (CILIP) (2018) views information literacy as the ability to think critically and make balanced judgments about any information we

find and use. According to CILIP (2018), information literacy incorporates a set of skills to discover, access, interpret, analyse, manage, create, communicate, store and share information. It concerns the application of the competencies, attributes and confidence needed to make the best use of information and to interpret it judiciously. It incorporates critical thinking and awareness and an understanding of both the ethical and political issues associated with using information. Interestingly, each of these approaches to information literacy has different pedagogical and philosophical implications (Foasberg, 2015).

The Association of College and Research Libraries (ACRL) conceptualises information literacy as a set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued and the use of information in creating new knowledge and participating ethically in communities of learning. According to ACRL (2015), information literacy offers abilities to recognise when information is needed, locate, evaluate and use the needed information for a wide range of purposes. Therefore, information-literate individual is able to determine the extent of information needed, access it, evaluate it and its sources, use the information effectively and do so ethically and legally.

The ACRL (2015) developed information literacy competency standards and framework based on which information literacy research could be established. While the standards describe skills-based information literacy, the framework defines information literacy as a social practice. According to Foasberg (2015), the standards, which describe information literacy as a set of abilities and enumerate in some detail what the information-literate student, should be able to accomplish, have been and remain very prominent in the definition of information literacy.

Thus, the American Library Association (ALA) (2013) defines information literacy as a set of abilities empowering individuals to recognise when information is needed and to be able to locate it, evaluate it and use it effectively. The ALA further outlines six defining attributes of information literacy competency to include: recognising a need for information, identifying that information would address a particular problem, finding the needed information, evaluating the information found, organising the information and using the information effectively to address the specified problem. These attributes have remained the generally accepted foundational definition of information literacy in the literature (Anunobi and Uden, 2014). Hence, information literacy is commonly defined as the ability to locate, access, evaluate and use information (Saunders, 2012). Based on these attributes, Bawden (2008) states that to be information-literate, a person must be able to recognise when information is needed and have the ability to locate, evaluate and use effectively the needed information. Information literacy, therefore, is a term used to describe a set of skills that enable individuals to seek, find, use and cite high-quality information quickly and efficiently.

Virkus *et al.* (2005) summarise the definitions of information literacy in three concepts. First is the ICT concept which involves using technology to retrieve and disseminate information. Second is the information resources concept which entails the ability to find resources independently, without the aid of intermediaries. Lastly is the information process concept which has to do with recognising information need, retrieving and evaluating, using and disseminating information to acquire or extend knowledge. Based on these defining concepts, information literacy is generally seen as including computer-related competencies, sometimes as part of such literacies and sometimes as being tangential to them (Belshaw, 2009). However, following advances in ICTs and the resultant emergence of the internet, the concept of "information literacy" moved beyond ability to recognise, find, evaluate and use information to DIL which encompasses the ability to understand and use information in multiple formats from a wide range of sources via computers (Jarson, 2015). It includes

communication, collaboration and teamwork, social awareness in the digital environment, understanding of e-safety and creation of new information (Open University, 2012; Walton, 2016).

In the process, the range of skills and knowledge required for DIL has expanded considerably to include computer literacy, media literacy, network literacy and ICT literacy (Li *et al.*, 2021). Other concepts that have emerged as extensions of the concept of DIL include mobile literacy, Internet literacy, data literacy, digital literacy and digital fluency (Pinto *et al.*, 2019; Stopar and Bartol, 2019). It is, therefore, apt to state that DIL is a concept with a long developmental time, rich connotation and extension and wide application scenarios, making it of great significance to adapt to the vigorous development of technology (Li *et al.*, 2021).

Following this development, New Media Consortium (2005) described DIL as the 21st century literacy which involves a set of abilities and skills including ability to understand the power of images and sounds, to recognise and use that power to manipulate and transform digital media, to distribute them pervasively and to easily adapt them to new form (Jenkins, 2009). According to Leaning (2019), a substantial number of writers have validated information literacy as an umbrella term for DIL. While information literacy is generally viewed as the aptitude to identify, appraise and use information according to pre-determined needs, DIL is viewed as information literacy in a digital milieu. Because of extensive diversity in the conceptualisation of the concept, many writers have defined DIL from different perspectives (Khan, 2020). For instance, Pangrazio (2016) defines it as the application of innovative technologies for information and knowledge management.

Pujari (2018) quoting Glister (1997, p. 290) defines DIL as, "a set of skills to access the Internet; find, manage and edit digital information; join communications; and otherwise engage with an online information and communication network." According to Khan (2020), it is an aspect of literacy that overtly reflects the activities through, which individuals build perceptible connotations using digital technologies. List (2019) describes DIL as a series of interrelated skills or competencies required for success in the digital environment. DIL skills was first defined in 1997 by Gilster as skills to recognise information needs, find, evaluate and use information retrievable through computer and internet. This definition of DIL skills became debateable in terms of definition, components and indicators of evaluation (Noh, 2017). For instance, Bawden (2001) believes that Gilster's definition is misleading as it relates DIL skills to technical abilities and not critical thinking. Likewise, Eshet (2004) who states that DIL skills are not technical but cognitive, social and emotional aspects of digitised information. Martin and Grudziecki (2006) also claim DIL skills as a set of knowledge, skills, strategies and attitude that help in information retrieval and usability.

Cordell (2013) discloses emphatically that DIL skills are fundamentally information literacy skills but in a digital environment and that two terms are not competing but complementary. Furthermore, McGuinness and Fulton (2019) opine that DIL skills are a multidimensional term that connote the capability of adopting technologies to find, analyse and evaluate digital information (Ata and Yildirim, 2019). It is significant for learning and inculcates inventiveness (Littlejohn *et al.*, 2012). DIL skills as described by Bawden (2008) are the collection of abilities, knowledge and personal characteristics that prepare a person for information and knowledge sharing in diverse formats and through multiple channels of communication. In the same way, Leaning (2019) views DIL skills as abilities to use ICTs, which are composed of several forms of literacy including computer literacy, media literacy, information literacy and internet literacy. According to Lankshear and Knobel (2006), it empowers people to use information effectively in a digital environment based on predetermined rules and acceptable patterns. However, Ilomaki *et al.* (2011) sees digital

skills as technical abilities which are required for the use of technologies in a digital environment.

Several studies have shown that adequate DIL skills are required for effective use of e-resources. Ranasinghe *et al.* (2012) note that recent technological development has made DIL a necessary element for students' use of information resources, learning, teaching and research. According to Ranasinghe *et al.* (2012), students' need to have adequate knowledge of common software packages, operating systems, database management and internet usage to access and use e-resources. Ranasinghe's findings suggest that computer and DIL skills influence the usage of e-resources. Somaratna (2015) investigated the effects of DIL on undergraduate students' use of e-resources at the University of Colombo. Findings show that most of the undergraduate students lacked the necessary DIL skills to use different e-resources to support their studies. Insufficient computer and DIL skills among students are responsible to low usage of electronic databases (Ratcliff *et al.*, 2013). Thus, developing the students' competence in computer and DIL is of paramount importance (Mollel and Mwantimwa, 2019) especially for graduate students who are involved in research. Okike and Adetoro (2018) citing Lwoga *et al.* (2016) point out that library users need DIL skills to effectively use the rapidly growing and changing information resources.

The literature reveals that adequate DIL skills on how to search, retrieve and use e-resources are imperative for effective learning, teaching and research. This suggests that a relationship exists between DIL skills and effective use of e-resources (Adeleke and Emeahara, 2016). DIL proficiency enhances not only e-resources utilisation but also successful deployment and utilisation of digital technology for teaching, learning and research (Youssef *et al.*, 2022). A digitally literate person can recognise their information needs, access relevant information, evaluate critically and understand the information usage and its benefits (Brar, 2015; Khan, 2020). Though the literature has not explicitly shown the predicting factors for the use of e-resources, the aspects of DIL skills required for effective utilisation of e-resources include proficiency in the use of digital devices, web-based task, information finding information evaluation and utilisation.

While DIL skills empower individuals in the use, implementation and evaluation of information in a digital environment (Terry *et al.*, 2019), its concept is still unclear. Some researchers perceive DIL skills from technical/system perspectives, whereas others have linked it with personal idiosyncrasies such as cognition and socio-emotional aspects of a task. This conceptual ambiguity according to Khan (2020) has created the challenge of having a comprehensive and universally accepted DIL framework. Thus, for the purpose of this study, DIL is conceptualised as ability to adequately recognise the need for information; use digital devices to access the information, evaluate, transmit and use the information in a digital environment.

University of Ibadan Library

Established in 1948, the University of Ibadan is the first University in Nigeria. The university, which took off with academic programmes in arts, science and medicine, is now a comprehensive citadel of learning offering courses at both undergraduate and graduate levels in diverse academic programmes of faculties, colleges, schools, institutes and centres. The University of Ibadan Postgraduate College is well acknowledged within and outside the country as one of the largest in Africa and the flagship of graduate education in Nigeria as it produces the much required human resources for the entire Nigerian University system, the Nigerian public and private sectors and beyond. The Postgraduate College enrolment takes about 50% of the entire student enrolment. University of Ibadan produces an average of 3,000 masters and 250 PhDs every year. The main thrust of the university for the 21st

century is to be a world-class institution for academic excellence geared towards meeting societal needs. A valuable support unit in the pursuance of the university goal is the University of Ibadan Library named after Professor Kenneth Onwuka Dike, the first indigenous Principal and Vice-Chancellor of the university.

The Kenneth Dike Library, University of Ibadan (KDLUI), received great boosts in all aspects of its functions and services to the immediate university community and beyond. At present, the library is sufficiently equipped and has been facilitated to subscribe to many databases of e-resources with which it is able to complement its print collections. This has impacted and improved the quality of staff and students' learning, teaching and research within and outside the university community. To increase users' access to electronic resources for those who do not have personal computer, the library has an electronic classroom and a computer laboratory with full Internet access (wireless routers) and multimedia facilities. Besides, indigent student users are also provided the opportunity to borrow laptop computer systems for a period of two weeks within which they must return them to the library. This is just one of the many ways that expanded ICT is currently being implemented in the university. KDLUI serves a virile academic community of 5,800 teaching and non-teaching staff in all the faculties, colleges, schools, institutes and centres and a student population of about 32,000 (full and part time) many of whom are humanities graduate students.

Humanities graduate students

The humanities are a diverse field of studies comprising array of subjects which bring people closer to real-life experiences. It is a broader term that describes academic disciplines and study aspects of human society and culture (Hussain and Hussain, 2021). The humanities range from the study of goods and services in economics to the study of society, culture and evolution in sociology. They are those academic disciplines that study human culture and seek to understand, appreciate and critique the human conduct in all its depth and range of meaning. Humanities, in a variety of ways, are considered to address the contemporary and perennial challenges faced by humanity both locally and internationally. It includes subjects that are related to modern languages and ancient study. A collated comprehensive list of humanities subjects shows that the humanities cut across several faculties in most universities. In the University of Ibadan, the Faculties of Arts, Social Sciences and Institute of African Studies offer the bulk of humanities courses. Humanities graduates therefore include those of the academic disciplines of philosophy, religion, languages and literature, linguistics, history, geography, economies, sociology, psychology and the arts. The arts include the visual arts, drama and music.

Many studies have been conducted on graduate students' use of e-resources in universities. For instance, Sutton and Jacoby (2008, p. 1) found that graduate students "depend heavily on library collections and generally prefer to access materials online." In spite of the fact that e-resources are popular on the internet and in libraries, some studies have shown that scholars in the humanities were regarded as low-level users of e-journals and databases (Talja and Maula, 2003). Findings show that many humanities scholars are strongly attached to books, they have a wrong perception of the usage of e-resources than other disciplines. According to Hussain and Hussain (2021), many research articles have shown that, humanities scholars do not use e-resources frequently. Reading and writing are basics in humanities research; it is not unexpected that some humanists are hesitant to adopt e-resources (Hussain and Hussain, 2021). In a study of the impact of electronic resources on humanities graduate student theses, Wu and Chen (2010) report that e-resources remain unpopular among humanities scholars and students. Wu and Chen (2010)

found that humanities graduate students cited a relatively small number of electronic resources. The majority of their citations were printed documents.

While researchers in natural sciences or social sciences do their research in the laboratories and on the fields, it has been widely noted that scholars in humanities trust monographic materials for their research (Hussain and Hussain, 2021). According to Wang (2006), humanities scholars did not appreciate e-books. In a study titled "Electronic books and the humanities: a survey at the University of Denver," Levine-Clark (2007) reveals that only 13% of humanities graduates students frequently use e-books, whereas majority used them only once or occasionally. The author reports that if both print and electronic versions are available, only 13.4% of the students would always use e-books. Jamali *et al.* (2009) further explains that high amount of reading required in the humanities renders e-books unsuitable. In another study conducted on humanities graduate students' use behaviour on full-text databases for ancient Chinese books, Wu and Chen (2007) indicate that all humanities graduate students did not trust electronic sources of information as they use Chinese ancient books databases, but they verified their finding using paper version. Anderson (2009) identified the quality of original editions as main reason why historians distrust e-resources. According to Anderson, historians were worried about whether the electronic version will be faithful to the original edition and whether annotations or other editions were electronically reliable.

Although several studies have shown that the internet is the first choice for most people who seek information, Wu and Chen (2010) found that humanities graduate students instead regarded the library as their top source when gathering information for their theses. They discover new knowledge through reading, interpreting and synthesizing materials that are usually available in libraries (Hussain and Hussain, 2021). In a study aimed at exploring the level of awareness and patterns of usage of e-books by humanities scholars, Levine-Clark (2007) found that humanists rely on printed books for their research because they conduct research differently from other disciplines. Humanists use e-books less frequently than do others, 67.7% preferred the print copy of e-book.

In another study to find out information about the e-book collections and how humanities scholars avail benefit from it, Murray (2018) reports that no participant in the study felt that e-books are more important than printed books. Scholars perceived that printed books were more valuable in humanities discipline. Linsha and Bavakutty (2017) indicate that most of the researchers were satisfied with print resources. A significant number reported that they were moderately satisfied with e-resources. In a study carried out to assess the use of e-resources by humanities research scholars, Tahir *et al.* (2010) conclude that while humanities scholars still stick with print, they do pay good attention to electronic technology. According to the authors, they faced many problems in retrieving and using electronic facilities.

While many studies have attributed low use of e-resources in the humanities to several factors, including accuracy and authenticity of content (Wu and Chen, 2019) and the quality of e-resources (Anderson, 2009), not much has been done to determine the level of DIL skills possessed by humanities graduate student. Bhardwaj (2017) reveals that research on information literacy in developing countries was unpopular in the humanities and social sciences. This study, therefore, is carried out to evaluate the level of DIL skills and use of e-resources by humanities graduate students of the University of Ibadan, Nigeria. DIL skills in this study include skills in the use of digital device, proficiency in web-based task, information finding and evaluation.

In evaluating information literacy, typical standards and frameworks have been documented (ACRL, 2015; IEA, 2013; ILFA, 2006; SCONUL Working Group on Information

Literacy, 2011; UNESCO, 2013). However, many scholars have expanded and constructed special information literacy evaluation indicators for various fields and objects (Niemelä *et al.*, 2012; Zhou *et al.*, 2020), which according to Li *et al.* (2021) provide satisfactory support for the precise evaluation of information literacy in different scenarios. Regarding the methods of evaluating information literacy, most scholars use only self-designed questionnaires that consist of self-assessments with closed-ended test questions (Pinto *et al.*, 2019). Other scholars have combined interviews (Walters *et al.*, 2020), experiments (Ding and Ma, 2013) and other survey methods to evaluate the developmental level of information literacy. These methods, according to Li *et al.* (2021), lack enthusiasm and flexibility, and the data collection process requires substantial cooperation from users, which is time-consuming and laborious. .

Methodology

To collect relevant data for this study, a quantitative research design of the survey type was adopted, which was undertaken from August to November 2021. The survey research was adopted because it is a useful instrument for educational fact finding and a means by which much information can be acquired from a study's population. Several researchers including Mishra (2018), Mansour (2017) and Noh (2017) have established the usefulness of survey research method in the study of perception, patterns, trends, status and primary data collection regarding any activities in an organisation. According to Khan (2020), various studies have adopted the survey methods to establish current and needed levels of DIL skills and to explore motivators of and barriers to the acquisition of DIL skills.

Population of the study and sample size

The study population comprised 592 graduate students in the 12 departments that made up the humanities in the University of Ibadan. Using the random sampling technique, 19 graduate students were selected from each of the 12 departments. These include Department of Arabic and Islamic Studies, Archaeology and Anthropology, Classic, Communication and Language Arts, English, European Studies and History. Others include Linguistics and African Studies, Music, Philosophy, Religion Studies and Theatre Arts. A total of 228 humanities graduate students participated in the study.

Research instrument

The study adopted a 64-item self-developed survey instrument (questionnaire) which was administered to the 228 participant for data collection. The questionnaire which is tagged Digital Information Literacy Skill Questionnaire is divided into three sections. Section A consists of four-item questions that elicited biodata responses from respondents. Section B consists of 40-item questions devised to measure the respondents' level of DIL skills in respect of digital devices, web-based task, information finding and evaluation skills (10 question for each the factors of DILL). Adopting six-point Likert-type response scale, respondents were requested to rate their knowledge of digital devices, web-based tasks, information finding and evaluation skills by ticking (1) very high, (2) high, (3) moderate, (4) low, (5) very low and (6) no proficiency.

Section C deals with e-resources utilisation, consists of ten-item questions designed to examine respondents' level of utilisation of the available e-resources. Respondents were requested to rate their level of use of listed available e-resources by ticking (1) very high, (2) high, (3) moderate, (4) low, (5) very low and (6) not at all utilised. Section D consists of ten-item questions designed to examine challenges encountered in the use of the e-resources by respondents. Respondents were requested to identify and rate common challenges by

ticking (1) very challenging, (2) challenging, (3) somewhat challenging and (4) not at all challenging on statements indicating common challenges encountered by students in the use of e-resources.

Validity and reliability of the instrument

The validity and reliability of the instrument were ascertained through a pilot test carried out before the actual distribution of the questionnaire. Acceptable internal consistency was established (Cronbach's alpha = 0.78), which shows a high level of internal consistency as stated by Ash (2009). According to Hair *et al.* (2014), a Cronbach's alpha value of more than 0.70 indicates that the items are homogeneous, measuring the same constant and demonstrating that the questionnaire is a reliable measuring instrument. Out of 228 copies of questionnaire administered, 211 were retrieved, and after data sorting, 200 copies, representing (87.7%), were found valid for data analysis.

Data analysis

The retrieved questionnaires were coded and data collected were analysed using the Statistical Package for Social Science. Descriptive statistics, including frequencies, percentage, mean and standard deviation, were used to answer *RQs1–3*, whereas inferential statistics such as regression analysis and Pearson's product moment correlation coefficient were used to test *RQ4* and hypothesis, respectively . All tests were conducted at 0.05 level of significance. The findings of this study are organised according to the order of the questions listed in the questionnaire. They are also handled in terms of answers to each of the four research questions.

Table 1 showed that majority (58%) of the respondents is males, with females making up the remaining 42%. A large number of the respondents (41%) were aged between 24 and 27 years. This was followed by 27% who were aged between 20 and 23 years. While 18% aged between 28 and 31 years, the remaining 14% aged 32 years and above.

Table 2 shows the level of respondents' proficiency in the use of digital devices (4.82), web-based task (4.40), information finding (3.69) and information evaluation (4.14). Against the mean criterion of 3.5, the weighted mean scores of 4.26 show that the level of DIL competency skills possessed by humanities graduates at the University of Ibadan is high.

Table 3 reveals that the level of e-resources utilisation among humanities graduates at the University of Ibadan is low (2.81 < 3.5).

Table 4 shows that all the components of DIL (web-based task, information finding, digital device and information evaluation skills) are potent factors that predicted and contributed to e-resources utilisation among humanities graduates. This finding was derived from regression analysis. The most potent factor was proficiency in web-based task

Demography	Frequency	%
Gender		
Male	116	58
Female	84	42
Age, years		
20– 23	54	27
24–27	82	41
28–31	36	18
32 and above	28	14

Table 1. Demographic responses

(beta = 0.915, $P < 0.05$). This was followed by information finding skills (beta = 0.098, $P < 0.05$), digital device skills (beta = 0.093, $P < 0.05$) and information evaluation skills (beta = 0.091, $P < 0.05$). The four factors have a joint significant impact on e-resources utilisation, because the probability of the effect of the combination of the independent variables on the dependent variable is lower than 0.05.

Table 2.
Level of DIL skills possessed by graduate students at the University of Ibadan

DIL	Very high (%)	High (%)	Moderate (%)	Low (%)	Very low (%)	No proficiency (%)	$\bar{x}$	STD
Use of digital devices	38.2	15.9	31.2	6.8	4.5	3.4	4.82	0.66
WEB-based task	24.9	27.9	25.2	14.1	3.1	4.8	4.40	0.57
Information finding skills	16.1	24.15	15.4	21.7	11.95	10.7	3.69	0.73
Information evaluation skills	20	31.2	19.35	17.35	8.25	3.85	4.14	0.63
Total	*24.8*	*24.8*	*22.7*	*14.9*	*6.9*	*5.9*	*4.26*	*0.65*

Note: Acceptable mean criterion = 3.5

Table 3.
Level of e-resources utilisation by humanities graduate at the University of Ibadan

S/N	Electronic resources	Very high (%)	High (%)	Moderate (%)	Low (%)	Very low (%)	Not at all used (%)	Mean	SD
1.	African Journals Online (AJOL)	10.5	14	21	20	16.5	18	3.28	0.47
2.	JSTOR	13.5	16	19.5	9.5	11.5	30	3.21	0.40
3.	SPRINGER	6	11	13	21.5	26.5	22	2.82	0.01
4.	EMERALD	3	14.5	16.5	17	22	27	2.78	0.06
5.	ProQuest	9	10.5	13	15	19	33.5	2.75	0.14
6.	EBSCOhost databases	6	8.5	21.5	11.5	17	35.5	2.69	0.12
7.	ERIC Open Access	9.5	10	12.5	11.5	19	37.5	2.67	0.14
8.	IMF E-Library	7.5	5	15.5	19.5	22.5	30	2.66	0.15
9.	DOAJ Open Access	7	6	15	15	24	33	2.64	0.17
10.	Pubmed Central (PMC)	5.5	9	14.5	14.5	27	29.5	2.63	0.18
Weighted mean = 2.81									0.173

Note: Acceptable mean criterion = 3.5

Table 4.
Relative contribution of digital device skills, web-based skills information finding and evaluation to e-resources utilisation by humanities graduate students in University of Ibadan

Model	Unstandardised coefficients		Standardised coefficients		
	B	Std. error	Beta	*T*	Sig.
(Constant)	0.087	0.247		0.352	0.733
Web-based tasks	0.946	0.099	0.915	9.601	0.000
Information finding skills	0.087	0.085	0.098	1.027	0.000
Digital devices skills	0.084	0.081	0.093	1.035	0.000
Information evaluation skills	0.077	0.079	0.091	1.055	0.002

Note: Dependent variable: e-resources utilisation

Table 5 shows Pearson's correlation coefficient indicating that there is significant positive correlation between digital devices skills and e-resources utilisation by humanities graduate students ($r = 0.849$**, $N = 200$, $P < 0.05$). This result implies that the level of digital devices skills possessed by humanities graduate students have an effect on actual utilisation of e-resources by humanities graduate students in the university library. Therefore, the null hypothesis is rejected.

Table 6 shows that inadequate knowledge of e-resources availability, irregular internet access, inadequate training and staff assistance together with lack of continuity in database subscription and paucity of local contents are main challenges of e-resources utilisation by humanities graduate students at the University of Ibadan.

11. How can users be assisted in the use of e-resources in the university library?

In total, 79 (39.5%) of the respondents suggested that e-resources users should be trained adequately on how to use e-resources. This is followed by 63 (31.5%) who suggested that internet access code be provided to the users. While 37 (18.5%) of the respondents suggested improvement in the computer renting services by acquiring more laptops computers, others 21 (10.5%) suggested improved internet services, expanded access, awareness about e-resources subscription, etc.

Major findings

Demographic variables

The study showed that the majority of the respondents were male (58%), whereas the remaining 42% were female. The study revealed that 41% of the respondents were aged between 24 and 27 years. This was followed by 27% who were aged between 20 and 23 years. This implies that majority of the humanities graduate students are relatively young and could cope with rapid pace of change in ICTs.

Level of digital information literacy among humanities graduate of the University of Ibadan

The study revealed that the level of DIL skills possessed by humanities graduate student at the University of Ibadan is high. This is in respect of digital devices skills (4.82); web-based skills (4.40); information finding skills (4.14); and information evaluation skills (3.69). Based on the mean criterion of 3.5, the overall mean ($\bar{x} = 4.26 > 3.5$) showed that the level of DIL skills among humanities graduate of the University of Ibadan was high.

Level of e-resources utilisation among humanities graduate of the University of Ibadan

The study showed that the respondents were poor in the use of electronic databases of leading journals and books across many academic disciplines including Africa Journals Online (3.29), Journal Storage (JSTOR) (3.21), Springer (2.82), Emerald (2.78), ProQuest (2.75) and EBSCOhost (2.69). Others databases include Eric Open Access (2.67), IMF-Library

Variable	*N*	Mean	SD	Df	*R*	*P*	Remark
DIL skills	200	*4.2625*	*0.6475*	155	0.839**	0.000	Sig.
E-resources utilisation	200	2.601	*0.173*				

Notes: There is no significant correlation between DIL skills and e-resources utilisation among humanities graduate student in Kenneth Dike Library, University of Ibadan, Nigeria. **Sig. at 0.01 level; *Sig. at 0.05 level

Table 5. Test of null hypothesis

Table 6.
Challenges of e-resources utilisation among humanities graduate in the University of Ibadan

Challenges	Very challenging (%)	Challenging (%)	Somewhat challenging (%)	Not at all challenging (%)	Mean	SD
1. Inadequate knowledge of e-resources availability	61	25	10	4	3.43	0.83
2. Irregular internet access	52	35.5	5.5	7	3.23	0.63
3. Inadequate training on e-resources utilisation	34	22	27	17	2.73	0.13
4. Inadequate assistance	29	26	30	15	2.69	0.09
5. Lack of continuity in database subscription	26	34	22	18	2.68	0.08
6. Paucity of local contents in the electronic resource databases	28	22	27	23	2.55	0.05
7. Poor ICT skills	12	28	34	26	2.26	0.34
8. Lack of time because of tight lecture timetable	18	21	23	38	2.19	0.41
9. Lack of computer devices	17	19	25	39	2.14	0.46
10. Library rules/regulations	12	21	33	34	2.11	0.49
			Weighted mean = 2.601			0.351

Note: Acceptable mean criterion = 2.5

(2.66), DOAJ Open Access (2.64) and Pubmed Central (PMC) (2.63) which provide full text-searchable database of high-quality information.

Against the mean criterion of 3.5, the overall mean ($\bar{x}$ =2.81) showed that the utilisation of available e-resources was low among the humanities graduate students in Kenneth Dike Library, University of Ibadan.

Contribution of digital information literacy skills to e-resources utilisation by humanities graduate students in University of Ibadan

The regression analysis showed that all the components of DIL including web-based task, information finding, digital device and information evaluation skills were potent factors that predicted and contributed to e-resources utilisation among humanities graduate students of the University of Ibadan. The most potent factor was proficiency in web-based task (beta = 0.915, $P < 0.05$). This was followed by information finding skills (beta = 0.098, $P < 0.05$), digital device skills (beta = 0.093, $P < 0.05$) and information evaluation skills (beta = 0.091, $P < 0.05$). The four factors have a joint positive significant impact on e-resources utilisation, because the probability of the effect of the combination of the independent variables on the dependent variable is lower than 0.05. Therefore, the relative contribution of these factors to e-resources utilisation is statistically significant, with skills in web-based task having higher effect, whereas information evaluation has a lower effect. The result suggests that an improvement in these factors will increase e-resources utilisation. This invariably means that e-resources will be heavily used if humanities graduate students can improve their DIL skills.

Test of hypothesis

The result of the Pearson's product moment correlation test of the null hypothesis showed that there is a significant positive correlation ($r = 0.849^{**}$, $N = 200$, $P < 0.05$) between DIL skills possessed by humanities graduate and their use of e-resources in the university libraries. This implies that the level of DIL skills possessed by humanities graduate students has an effect on actual utilisation of e-resources in the university library.

Challenges of e-resources utilisation among humanities graduate students of the University of Ibadan

The study identified inadequate knowledge of e-resources availability, irregular internet access, inadequate training and staff assistance together with lack of continuity in database subscription and paucity of local contents as main challenges of e-resources utilisation by humanities graduate students at the University of Ibadan.

Respondents' comments on how users can be assisted in the use of e-resources

The most of the respondents suggest that e-resources users should be trained adequately, provided with internet access code, computer renting services should be improved by acquiring more laptops computers, internet service should be improved, etc.

Discussion

The systematic review of relevant literature showed a holistic picture of the use of e-resources by humanities scholars worldwide, because of the emergence of ICTs and the resulting e-resources. Notwithstanding the fact that e-resources are popular on the internet and in libraries, studies have shown that e-resources remain unpopular and sparsely used among humanities scholars and students (Wu and Chen, 2010). While many studies have

attributed low use of e-resources to several factors, including accuracy and authenticity of content (Wu and Chen, 2019) and the quality of e-resources (Anderson, 2009), not much has been done to determine the level of DIL skills possessed by humanities graduate students. This study, therefore, was carried out to investigate the level of DIL skills and use of e-resources by humanities graduate students of the University of Ibadan, Nigeria.

The study revealed that the level of DIL skills among humanities graduate student of the University of Ibadan was high. The study showed that the students possessed significant level of skills in the use digital devices, web-based tasks, information finding and evaluation to provoke effective use of e-resources in the university library. The study showed that the components of DIL including web-based task, information finding, digital device and information evaluation skills were potent factors that predicted and contributed to e-resources utilisation among humanities graduate students. The study established a significant positive correlation between DIL skills and e-resources utilisation among humanities graduate students in the university library. This notwithstanding, the study revealed that the level of e-resources utilisation in respect of electronic archives and databases of leading journals and books across many academic disciplines was low among the humanities graduate students in the University of Ibadan.

These findings corroborate many research articles that have established low use of e-resources among scholars and students in the humanities. For instance, Hussain and Hussain (2021) observe that humanities scholars do not use e-resources frequently because they are still clinging to their old printed resources. In the same way, Wu and Chen (2010) have noted that e-resources remain unpopular among humanities scholars and students as majority of their citations were printed documents. Jamali *et al.* (2009) explain further that high amount of reading required in the humanities renders e-books unsuitable. Anderson (2009) identified the quality of original editions as main reason why historians distrust e-resources. According to Anderson, historians were worried about whether the electronic version will be faithful to the original edition and whether annotations or other editions were electronically reliable.

In another study, Wu and Chen (2007) affirm that humanities graduate students did not trust electronic sources of information because as they use Chinese ancient books databases, they verified their finding using paper version. For that reason, Wang (2006) explains that humanities scholars did not appreciate e-books. The finding of this study also corroborates Levine-Clark (2007) who found that researchers in the humanities use e-books less frequently than do others, 67.7% preferred the print copy of e-book. The study affirms Tahir *et al.*'s (2010) suggestion that though humanities scholars hardly used e-resources for their research work, they do pay good attention to electronic technology. According to Hussain and Hussain (2021, p. 78), "Reading and writing are basics in humanities research; it is not unexpected that some humanists are hesitant to adopt e-resources."

The study identified inadequate knowledge of e-resources availability, irregular internet access, inadequate training on e-resources utilisation, inadequate assistance, lack of continuity in database subscription and paucity of local contents in the electronic resource databases as major challenges encountered by humanities graduates in e-resources utilisation at the University of Ibadan. This study further corroborates Tahir (2010) who claims that humanities graduate student faced many problems in retrieving and using electronic facilities. The findings also substantiate Madukoma *et al.* (2014) and Akpojotor (2016) who earlier identified lack of knowledge/awareness of the available e-resources, lack of skills on how to access e-resources and lack of ICT competence among users of e-resources as some of the reasons for graduate students' inability to access and exploit e-resources in Southern Nigeria. According to Hussain and Hussain (2021), humanities

scholars were unacquainted with e-resources utilisation. Amusa and Atimo (2016) describe e-resources awareness as the extent to which users have information and knowledge of e-resources being subscribed to. When users have adequate information on the electronic resources being subscribed to, they are encouraged to use them. This suggests that available e-resources must be made known to the users as strong awareness is required for e-resources use.

The study also supports Uzoagba (2019) who identified lack of information communication technologies' infrastructure and epileptic power supply as threats to effective use of e-resources in Nigeria. Anyim (2021) found that inadequate utilisation of e-resources is connected to inadequate computers, poor Internet connectivity, limited subscribed titles, power outages, difficulty in accessing to use computers, lack of relevant e-resources and lack of adequate assistance from the library. The findings of this study also support Okogwu (2019) who in an empirical study of e-resources utilisation by graduate library users in university libraries in South East Nigeria identified the difficulties they encountered to include lack of perpetual access, slow internet connectivity, struggling with information overload, loss of access because of cancellation of subscription, non-availability of relevant e-resources to information needs and inadequate understanding of database peculiarity e-resources use. According to Okogwu (2019), there is lack of perpetual access to e-resources because majority of e-resources is licenced for a limited time reiterated. Thus, at the end of the licence period, if the selector decides to cancel the subscription, it results in a loss of access to the content. Okogwu (2019) however advised that it is important to check access to the resource on regular basis and follow up with the provider in the case of loss of access, which requires special staff having technical skills and knowledge.

Conclusion

The subscription of digital source of information is to enhance effective information service delivery and improve the research capacity of the university through effective utilisation by staff and students. The impact of digital literacy on e-resources accessibility and utilisation is well established. Many studies have suggested that users will make effective utilisation of e-resources, if they possessed significant level of DIL skills. However, humanities graduate students at the University of Ibadan, though possessed high level of DIL skill, have not shown sufficient interest in e-resources utilisation. Research findings have shown that actual use of e-resources among humanities scholars and students in the University libraries is low. While most studies have attributed the low use of e-resources among humanists to lack of conviction of the quality, comprehensiveness and faithfulness of e-resources to the original printed sources, this study has identified the likely challenges associated with e-resources utilisation to include inadequate awareness/knowledge of e-resources availability, irregular internet access, inadequate training on e-resources utilisation, inadequate staff assistance, lack of continuity in database subscription and paucity of local contents in most electronic databases.

The findings of this study suggest that DIL proficiency will only lead to effective utilisation of e-resources if users have significant level of knowledge of e-resources availability, unfettered regular access to the internet, adequate training and support on e-resources utilisation, continuity in database subscription and increase of local contents in the e-resource databases. The study has shown that it is necessary not only to provide digital sources that fulfil the same standards of quality as printed sources but also to improve the education and training of scholars and students in the use of appropriate digital sources, to establish a system that ensures precise long-term access and provision of adequate local contents to the subscribed digital sources. It is also essential to take active

steps to ensure that those who can benefit most from higher education are not further marginalised as they seek to access and use e-resources. Therefore, management of university libraries in collaboration with database providers and other support services has a key role to play in ensuring the effective utilisation of e-resources among humanities graduate students in universities. To improve the usage and academic acceptance of e-resources among humanities graduate students, the following recommendations are made:

- Library management should organise regular e-resource awareness training for graduate student. System librarians can also create awareness of the available e-resources through social networking platforms such as WhatsApp, Facebook, Google+, MySpace, blogs and Wikis. This will help to increase students' awareness and knowledge of available e-resources.
- The librarians should liaise with faculties and departments to identify e-resources databases related to their disciplines for possible subscription.
- Library subscriptions to electronic resources should be consistent.
- University libraries should encourage students to access and use the available electronic resources by providing additional computer work stations and internet access code to enable students to access e-resources from remote locations.
- Library should provide support services to ease e-resources searching, downloading and printing.
- The library should provide more laptops to expand the ongoing laptop hiring services in Kenneth Dike Library, University of Ibadan.
- Given the fact that e-resources databases are expensive and there is no university library that can acquire all the e-resources needed, libraries should form a consortium and establish a virtual library that will be accessible to students and faculty in Nigerian universities.
- Library managers should collaborate with electronic databases producers to include more local (Nigerian) contents in e-resources databases.

There is no doubt that e-resources databases are useful to the study of humanities as they serve to provide the information needs of lecturers, students and other researchers. Therefore, humanities librarians should be adequately trained and equipped with adequate skills. This would enable them not only to provide information, but to train and provide the information users with adequate skills to explore digital devices, perform web-based tasks, find, evaluate and use information effectively. For this reason, humanities librarians should be adequately trained and equipped with skills that would enable them meet electronic information needs of the students and lecturers in the humanities.

Recommendations for further research

Based on the findings of this study, several issues that need to be addressed by further studies have emerged. The study adopted aspects of ACRL (2015) information literacy framework and standards by capturing a set of technological and analytical abilities that may be necessary for effective exploitation and utilisation of e-resources by humanities graduate students. As much as findings show that the students possessed adequate digital literacy skills but differ in the use of e-resources, this study may be used as a foundation for further research to explore additional characteristics of information literacy such as students' ability to think critically and make balanced judgments about e-resources. Further study can also be conducted concerning the application of the competencies, attributes and

confidence needed to make the best use of information and to interpret it judiciously. A better understanding of such skills may offer a different perspective to the literature of e-resources utilisation among humanities graduate students.

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