Impediments of information literacy in face-to-face universities in South Africa

Maoka Andries Dikotla[1] and Kabelo Bruce Kgomoeswana[2]
edikotm1@unisa.ac.za ORCID: 0000-0002-6699-6782
kabelo.kgomoeswana@eduvos.com ORCID: 0000-0002-1592-6100

Received: 30 September 2024
Accepted: 18 February 2025

The purpose of this study was to uncover the impediments to information literacy at face-to-face universities in South Africa, with the aim of suggesting strategies to improve information literacy training. The study employed a systematic review of the literature and collected data from the SABINET database and Google Scholar. The study was framed using the Society of College, National, and University Libraries (SCONUL) Seven Pillars of Information Literacy model. Key findings indicated that users' information literacy competencies remain poor even after attending information literacy training. Additionally, face-to-face universities do not have a common curriculum for information literacy programmes. Most institutions offer generic or standalone information literacy programmes, delivered in a hybrid mode. The root cause of these impediments appears to be a lack of support from top management. The study recommends integrating the information literacy programme into the university curriculum. Furthermore, it suggests combining the SCONUL Seven Pillars of Information Literacy model with the Kuhlthau model to enhance the framework for information literacy initiatives.

Keywords: Information literacy, information literacy initiatives, information literacy challenges, academic libraries, South Africa.

1 Introduction and background

Academic libraries around the world have developed a variety of information literacy programs to help library customers learn information literacy skills. Nierenberg, Låg and Dahl (2021) define information literacy as the ability to identify, assess, and use information sources to solve problems, develop knowledge, and learn. Information literacy is expected to promote lifelong learning goals while also allowing citizens to actively participate in academic activities and democratic society. Zurkowski (1974), who coined the phrase in his report to the National Commission for Libraries and Information Science (NCLIS), believes that information literacy is required for people to live and work in the rapidly changing network society. The concept of information literacy first emerged in the 1980s. Since its inception, various authors have described the concept in different ways. The writers employ specific characteristics of a person to define the concept of information literacy, which is shared by all of their definitions. According to the American Library Association (2000), information literacy is defined as "a person who recognises when information is required and has the ability to locate, evaluate, and effectively use the necessary information." In contrast, UNESCO (2008: 2) defines information literacy as a user's ability to:

- Identify information needed;
- Find and assess information sources;
- Store and retrieve information;
- Use information ethically and efficiently to match own information need; and knowledge development.

The study employs Padma and Ramasamy's (2016) definition of information literacy, which is the set of skills and knowledge needed to access electronic resources and evaluate their accuracy, dependability, and credibility. This description makes it clear that information literacy is concerned with content, analysis, searching, and assessment of information. Some face-to-face institutions offer information literacy programs separately, while others include them in the curriculum. Similarly, some academic libraries use classroom instruction to guide students through hands-on activities (Omeluzor, Akibu, Dika & Ukangwa 2017).

1. Maoka Andries Dikotla is Associate Professor in the Department of Information Science at the University of South Africa, Pretoria
2. Kabelo Bruce Kgomoeswana is Learning Resource Centre Lead at Eduvos, South Africa

In face-to-face universities, information literacy skills are essential for library users to succeed academically and make effective use of sources and services such as electronic databases such as Ebscohost, SABINET, ScienceDirect, Jstor, and Proquest, as well as bibliographic reference management software such as RefWorks and Mendeley, which includes plagiarism detection software Turnitin. According to Omeluzor et al. (2017), consumers must be information literate in order to deal with the constant deliberate attempts to disseminate false information and the proliferation of information sources in both hardcopy and softcopy formats. Because of the advancement of ICT and the importance of information literacy, most South African universities employ at least one librarian to teach information literacy. The primary responsibility of information literacy librarians is to provide library patrons with the information literacy skills necessary to identify their information needs, locate and access reliable material, and understand how to use it ethically (Wright 2007). If users have the necessary ICT infrastructure and the ability to retrieve and use information from global networks, information literacy will allow library patrons to use digital library resources more effectively and efficiently. These resources are available around the clock and are not limited by geography. Morris (2020) conducted a study to compare the effects of face-to-face and online formats on student skills and perspectives in information literacy (IL) programmes and discovered that face-to-face training is equally effective across a variety of delivery methods. As a result, the use of face-to-face, online, or hybrid methods is not a problem for successful information literacy delivery. Information literacy programs at face-to-face university libraries aim to improve users' research, information search, and retrieval skills, as well as their critical thinking and readiness for lifelong learning.

It is reasonable and probably justifiable to assume that library patrons who have completed information literacy courses have improved their information literacy skills and are now better equipped to know when they require information, how to obtain it, and how to use it correctly. According to studies, students' information literacy abilities remain underdeveloped. Other studies found that most students still struggle to find, retrieve, and use information for academic activities like assignments and research due to a lack of information literacy skills (Lwehabura 2018; Mahwasane & Mudzielwana, 2016). This implies that information literacy programs have not met their objectives. It is assumed that a number of factors that have yet to be investigated influence the delivery of information literacy. This prompted the researchers to investigate the inhibitors to information literacy in South African face-to-face universities.

2 Theoretical framework

There are numerous information literacy models that can be used to structure this study on the barriers to information literacy in South African face-to-face universities. The researchers' analysis was based on the ‘seven pillars' model developed by the Society of College, National, and University Libraries, UK (SCONUL) in 1999. According to this model, information literacy is divided into seven main pillars: identify, scope, plan, gather, evaluate, manage, and present. These seven pillars represent seven sets of information literacy abilities, comprehensions, skills, and competencies that every information literate person should have. First, according to this concept, an information literate person should be able to recognise when they need information.

The ability to evaluate existing knowledge and identify gaps ranks second. Third, be able to create and implement strategies for locating information and data. Fourth, be able to collect, locate, and retrieve the data and information they need. Fifth, have the ability to examine, contrast, and assess data and information. Sixth, be able to organise and manage information professionally and responsibly. Finally, users should be able to communicate and use the knowledge gained; convey the outcomes of their research, synthesise new and old information and data to develop new knowledge, and spread it in a variety of ways.

3 Problem statement

Ideally, information literacy education programmes should teach users "when, where, and how" to access and use information ethically, effectively, and efficiently to meet their academic information needs. Most importantly, deal with the spread of information disinformation and misinformation. Face-to-face universities made concerted efforts to invest money and time in training consumers in information literacy, but with no success. According to research, even after completing information literacy training, students continue to struggle with knowing when they need information and how to locate, retrieve, and apply it to complete academic tasks. Moraka, Ntsala and Dikotla (2024) discovered that even after information literacy training, students continue to struggle to conduct information searches and use library databases that libraries have paid millions of rands to subscribe to.

According to Dubicki (2015), technological innovation and the proliferation of information platforms have an impact on information literacy initiatives by complicating the process of determining relevant and credible information. If students remain information illiterate, they will struggle to analyse information and distinguish between reliable and credible sources, which may have a negative impact on their academic performance (Dubicki 2015). Furthermore, students cannot handle

the complicated information environment, resulting in fewer people in society who are lifelong learners (Tshuma & Chigada 2018).

4. Aim of the study

The aim of this study was to identify impediments to information literacy at face-to-face universities in South Africa, with the goal of suggesting strategies to improve information literacy training. The study was guided by the following five objectives:

- To analyse the information competencies of information-literate users who attended information-literacy training.
- To determine the scope of information literacy programmes at face-to-face universities.
- To examine the methods for delivering Information Literacy Training at face-to-face universities.
- To identify inhibitors of information literacy in face-to-face universities.
- To recommend strategies that can be used to improve information literacy in face-to-face universities.

4 Methodology

The study used a systematic review, which is a synthesis of secondary data. According to Phillips and Barker (2021), researchers who conduct systematic reviews should have an open and repeatable process that explains how studies were discovered, as well as the criteria used to include or exclude such studies from a study.

The literature for this study was obtained from the SABINET database using the preferred reporting items for systematic reviews and meta-analysis flow process (PRISMA). SABINET is the only South African database that provides access to journals (including LIS journals) published in Southern Africa. Thus, it is sufficient to provide accurate coverage of information literacy in face-to-face universities in South Africa. SABINET was enhanced with the use of Google Scholar, which could connect researchers to other databases. The process entailed using an advanced search strategy to find research articles on information literacy in face-to-face universities. To avoid missing relevant articles, the researcher did not limit the search to a specific time period. As a result, thousands of articles were recovered. The search strategy involved combining relevant Boolean operators (AND, OR, NOT) with search terms such as information literacy, user education, information literacy challenges, information literacy initiatives, and face-to-face universities. To reduce the number of results to a manageable size, various combinations of these terms were used.

The results were sorted according to relevance. The abstracts of the retrieved data were reviewed to filter out irrelevant articles. This implies that the retrieved articles were manually documented and analysed. After reviewing the abstracts, articles deemed relevant to the topic of impediments to information literacy in face-to-face academic libraries were exported to Microsoft Word for easy organisation, storage, and inclusion in the study. The use of systematic literature reviews is not new in the LIS industry. Previous scholars have successfully used it as a data source (Chilimo & Onyancha 2018; Click, Wiley & Houlihan 2017).

5 Literature review

This section discusses the literature review conducted for the current study. The literature review was guided by the study's objectives and the theoretical framework that underpins the study.

5.1 Competencies of Information-literate Users

Before someone can be considered information literate, they must have a number of abilities and skills, especially after completing information literacy training. Information literacy competencies are a set of skills that are recommended for individuals' personal use and are viewed as a conceptual framework for organising and integrating significant information that is part of their knowledge (Pauleen & Gorman 2016).

Catts and Lau (2008) define information literacy competencies as the ability to recognise one's informational needs, locate and assess the reliability of information, preserve and access information, use information efficiently and ethically, and apply information to create and share knowledge. Information literacy competency consists of the following (University of Liverpool Teaching and Learning Committee 2007):

> The ability to identify and access information, including through databases, indexing services, citation services, and the library catalogue; the ability to organize bibliographic information and communicate it to others, including the creation of a personal bibliographic system, the proper citation of references, and an understanding of copyright and plagiarism issues; the ability to compare and evaluate information gathered from various sources, including awareness of bias and authority issues and comprehension of the peer

review process of scholarly publishing; and the ability to develop search strategies, such as Boolean operators and truncation wildcards.

Authors Caffrey, Lee, Withorn, Clarke, Castañeda, Macomber, Jackson, Eslami, Haas, Philo, Galoozis, Vermeer, Andora and Kohn (2022) define IL competency as safe online collaboration, secure file sharing, and accurate digital information assessment. As a result, someone who can access, evaluate, and effectively use information they receive, as well as recognise when information is required, is considered information-literate (ALA, 1989). In summary, components of information literacy competency include understanding when and why information is required, where it can be found and accessed, how to assess, synthesise, use, and distribute it in a legal and ethical manner, and the attitude towards acquiring these competencies (Anunobi & Udem 2014).

5.2 Scope of information literacy in face-to-face universities

According to SCONUL (1999), the scope of information literacy should include content that allows a user to evaluate their current knowledge and identify any gaps, as well as understand the characteristics of the various information sources available to them and how they may be influenced by both digital and print formats. Furthermore, the scope should include information about the types of library and information services available to them, as well as information sources' accessibility. According to Shai and Solomon (2021), information literacy is taught as a standalone module at the University of Limpopo. Its scope includes a general introduction to the library via a tour or library orientation; comprehensive, advanced, formalised bibliographic instruction and information literacy programmes; and additional brief sessions to show library patrons new tools on the market.

In other parts of the world, database searching, information resource selection, and Internet source evaluation are all part of the University of Texas' information literacy curriculum. It is used as a Web-based IL in first-year college courses (Kasowitz-Scheer & Pasqualoni, 2002). According to Ocholla (2016:4), the scope of information literacy at the University of Zululand library covers topics such as introduction to library facilities, services, and resources; plagiarism and Turnitin; advanced search techniques for e-resources; referencing management tools (Endnote or Mendeley); e-TDs and IRs; and visibility, including research or author impact and researcher ID.

5.3 Methods of delivering information literacy training at face-to-face universities

Edzan (2008) and Patter and Kanamadi (2010) conducted research on information literacy provision methods, which revealed similarities with other traditional course delivery methods. Edzan (2008) suggests six approaches: lecture-guided tours, instructional sessions, exercises, multimedia, and video presentations." However, Patter and Kanamadi (2010) identified 11 methods for teaching information literacy, including library tours, orientation programs, library guides/handbooks, individualised instruction, small group interaction, demonstration, CD-ROM instruction, audio-video lectures, online instructions, web-based instructions, and scheduled library workshops.

According to Moyo and Okemwa's (2022) study of students' perceptions of information literacy at two South African universities, librarians used a variety of instructional strategies, including library orientation, library training sessions, small group instruction, presentations, class instruction, online training, and printed guides, all of which were highly rated by respondents. According to the literature, many library-initiated information literacy courses are general or stand-alone IL programmes that have been rejected by many IL academics because the drawbacks outweigh the advantages. Fullard (2016), for example, contends that independent IL programs limit collaboration between instructors and librarians in developing the IL competencies required for academic programs for students in the twenty-first century.

Furthermore, Mnkeni-Saurombe (2015) emphasises the importance of integrating IL programs into the curriculum over independent programs. This is why Mery, Newby and Peng (2012) recommend that librarians provide IL training as either a credit-bearing full-semester course or a one-time instruction session. Diehm and Lupton's study (2012:219) identified three ways in which students develop information literacy: 1) Learning by doing; 2) Making mistakes; and 3) Learning through social interaction.

5.4 Factors that influence the quality of IL training in face-to-face universities

A variety of factors influence the level of information literacy in face-to-face universities. In many academic libraries around the world, low student attendance or turnout is a significant impediment to user information literacy programs. Additional barriers include academics' lack of interest (Molepo & Bopape 2018), the short or insufficient amount of time allocated for information literacy (Matteson & Gersch, 2020), underutilisation of ICT in the classroom, and ill-timed user education sessions (Idoko, Asogwa & Ugwuanyi 2015).

This explains why integrating library instruction into the academic curriculum has been identified as the best approach for ensuring that everyone attends this important program (Moselen & Wang 2014; Zhang, Goodman & Xie 2015). Other impediments to information literacy include a lack of librarians with teaching skills, which is exacerbated by information overload, which overwhelms students with a large amount of information in a short period of time (Pant & Negi 2015). Academic libraries in South Africa, Tanzania, and Kenya have reported that the lack of an information literacy policy hinders the implementation of information literacy initiatives (Tshuma & Chigada 2018). Poor infrastructure, a lack of time and human resources, and a lack of cooperation from other university stakeholders are all issues that affect information literacy in traditional universities (Hepworth & Wema 2006). Tshuma and Chigada (2018) reported that several universities cited a lack of top management support as a barrier to information literacy training, resulting in students being taught the IL program in an unstructured and uneven manner. Tshuma and Chigada (2018) discovered that most academic libraries in developing countries face challenges such as insufficient staffing and funding for the acquisition of information literacy resources, which can be attributed to a lack of support from top management.

Baro, Seimode and Godfrey (2012) discovered that the library's services, particularly information literacy, are currently jeopardised due to the teaching staff's lack of collaboration and assistance. A shortage of trained librarians and IL instructors has hampered the development of information literacy programmes in countries such as Germany (Homann 2003). According to Howlader and Islam (2019), undergraduate students' negative attitudes towards libraries impede the success of information literacy initiatives because students prefer not to use library resources. Students who lack computer literacy skills also struggle during online information literacy sessions (MathGenie, 2018). In this regard, it is not unreasonable to argue that students require computer literacy skills before they can learn how to search databases such as Emerald, SABINET, and Ebscohost and use bibliographic software such as EndNote and RefWorks for reference management purposes. Finally, the researchers found that students do not take the information literacy program seriously because it is not a credit-bearing module.

5.5 Strategies to improve information literary training for students in face-to-face universities

The researchers believe that if the proposed recommendations are implemented, they could be a game changer for improving information literacy instruction in South African and global academic libraries. Successful information literacy necessitates collaborative, active, and student-centred learning Some university libraries go above and beyond the information literacy course and incorporate it into the university curriculum. According to research, an across-the-curriculum strategy is preferred because it integrates information literacy into each student's experience (Orr, Appleton & Wallin 2001). It is critical to note that collaboration among the administration, other university departments, and the library has been integrated to achieve the common goal of teaching information literacy skills (Wilson 2001). However, research has shown that establishing meaningful collaboration and cooperation between faculty staff and the training librarian is difficult to achieve (Tiemensma 2012:161-165; Fullard 2016:47).

6 Limitations and future studies

The current study is based on a literature review of information literacy in higher education institutions. Therefore, an empirical study is recommended. Furthermore, researchers encourage scholars to scrutinise the feasibility and suitability of the proposed recommendations in improving information literacy training for students at face-to-face universities in South Africa.

7. Implications of the study

This study made some recommendations to improve information literacy training for students at face-to-face universities in South Africa, and possibly elsewhere. It is hoped that adopting the proposed recommendations will have a positive impact on the delivery of information literacy in university libraries. The researchers also believe that the proposed recommendations will have an impact on policy and practice in the field of IL training. Finally, the publication of this article will undoubtedly contribute to the body of knowledge in the field of information literacy.

8. Conclusion and recommendations

The purpose of this study was to investigate the impediments to information literacy in South African face-to-face universities. The study employed the systematic literature review method and was founded on the 'seven pillars' model developed by the Society of College, National, and University Libraries, UK [SCONUL] (1999). Information literacy models serve as the foundation and direction for effective information literacy teaching and learning (Odede, 2020). The study discovered that users' information literacy skills remained poor even after receiving information literacy training. It has been established that students continue to struggle with using advanced search to perform meaningful information searches

(Moraka et al. 2024), and that they prefer to use untrustworthy Internet sources over peer-reviewed sources from the library collection (Howlader & Islam 2019). This practice implies that information literacy programmes have no positive or significant impact on library patrons. Students who lack information literacy risk becoming trapped in a cycle of information poverty, succumbing to distortion and misinformation. Furthermore, these students may use information unethically or illegally.

When it comes to the scope coverage of information literacy programmes, the study discovered that face-to-face universities lack a common curriculum for information literacy programmes. Different universities offer different scopes or content tailored to their specific needs. Furthermore, the study found that universities do not align their information literacy programmes with information theory models. As a result, throughout Africa, IL programmes are generally implemented through uncoordinated, brief, optional instructions that are uneven and rarely incorporated into university curricula (Tshuma & Chigada 2018). According to the Seven Pillars of Information Skills model (SCONUL 1999), which is supported by Mudave (2016), the scope of information literacy in face-to-face universities should include seven components. The current study discovered that the majority of face-to-face universities provide general or stand-alone information literacy programs in a hybrid mode of delivery. In light of this, it is recommended that the scope include content that teaches users how to synthesise information and data in order to generate new knowledge and disseminate it in a variety of ways. The content or curriculum of information literacy programmes should include topics such as identifying information needs, analysing existing knowledge, identifying knowledge gaps, planning and developing strategies for identifying information, gathering, locating, and accessing the information required, and evaluating and applying the knowledge acquired. However, because face-to-face universities use a variety of methods to teach information literacy, librarians and information literacy lecturers should work together to develop strategies that encourage students to achieve their learning objectives (Diehm & Lupton 2012). Similarly, the importance of adequate ICT infrastructure for delivering information literacy programs cannot be overstated.

It has become clear that providing information literacy in face-to-face universities is fraught with difficulties. The study determined that the root cause of these impediments is a lack of support from upper management. Top management support is critical for allocating adequate resources, such as facilities, ICT infrastructure, and financial and human resources, for information literacy initiatives. As a result, the approval of top management is required for successful information literacy programs. Without management support, users may be unprepared to engage in academic activities and function in the knowledge economy. Many scholars agree that integrating information literacy programmes into the university curriculum is the most effective way for students to participate (Moselen & Wang 2014; Zhang, Goodman & Xie 2015). In light of this, researchers emphasise the importance of integrating information literacy into the curriculum so that students can develop the information literacy skills required for the knowledge economy. However, incorporating information literacy programmes into the main stream of the university curriculum would necessitate a significant amount of work that relies on the collaboration and cooperation of librarians and lecturers, as well as the involvement of the South African Qualifications Authority (SAQA). For example, Fullard (2016: 47) stated that incorporating the IL into curriculum necessitates a meaningful collaboration between the training librarian and faculty staff, which is difficult to achieve." In fact, information literacy should be implemented across all university departments. This can be accomplished by forming a task force that is representative of the entire university committee. A more multidisciplinary approach to information literacy ensures buy-in from all university stakeholders, including students themselves.

Final remarks

We conclude that information literacy instruction is still alive and well in face-to-face universities, but its success is dependent on the application of appropriate information literacy models. As a result, the researchers recommend that information literacy librarians use the SCONUL Seven Pillars of Information Literacy model, one of the most well-known models of information literacy, in conjunction with Kuhlthau's (2004) model, because the Kuhlthau model includes cognitive (intellectual) and affective (emotional) constructs that account for users' emotions during the search process (Odede 2020). Another explanation is that knowledge, skills, and attitude are all combined to produce the various components of information literacy proficiency (Anunobi & Udem 2014), which may allow students to comprehend information and present information literacy programs. As a result, combining the two models may provide the best available guide for face-to-face universities to design information literacy curriculum and programmes.

References

American Library Association (ALA). 1989. *Presidential Committee on Information Literacy: Final Report.* Chicago: American Library Association. Viewed 20 January 2025, from: http://www.ala.org/acrl/publications/whitepapers/presidential.

Anunobi, C.V. and Udem, O.K., 2014. Information literacy competencies: A conceptual analysis. *Journal of Applied Information Science and Technology*, 7(2). Viewed, 20 November 2025, from https://ssrn.com/abstract=3231777

Association of College & Research Libraries, 2000, Information literacy competency standards for higher education, viewed 14 November 2024, from http://www.ala.org/acrl/standards/informationliteracycompetency

Baro, E. E. & Keboh, T., 2012. Teaching and fostering information literacy programmes: a survey of five university libraries in Africa. *The Journal of Academic Librarianship*, *38*(5),311-315.

Caffrey, C., Lee, H., Withorn, T., Clarke, M., Castañeda, A., Macomber, K., Jackson, K.M., Eslami, J., Haas, A., Philo, T., Galoozis, E., Vermeer, W., Andora, A. and Kohn, K.P. 2022. Library instruction and information literacy 2021. *Reference Services Review*, 50 (3/4): 271-355. https://doi.org/10.1108/RSR-09-2022-0035

Catts, R. and Lau, J., 2008*. Towards information literacy indicators*. Paris:UNESCO

Chilimo, W.L. and Onyancha, O.B., 2018. How open is open access research in Library and Information Science? *South African Journal of Libraries and Information Science*, 84(1): 11-19.

Click, A.B., Wiley, C.W. and Houlihan, M., 2017. The internationalization of the academic library: a systematic review of 25 years of literature on international students. *College & Research Libraries*, 78(3): 328-358.

Davids, Z., and Y. Omar. 2018. "Implementing a Certificate of Information LiteracyProgramme and Engaging with Faculty: A Case Study of the Cape Peninsula University of Technology." *South African Journal of Library and Information Science* 84 (1): 1–10. https://doi.org/10.7553/84-1-1716.

Diehm, R. & Lupton, M. 2012, Approaches to learning information literacy: A phenomenographic study. *The Journal of Academic Librarianship* 38(4): 217-225.

Dubicki, E. 2015. Faculty perceptions of students' information literacy skills competencies. *Journal of Information Literacy*, 7(2): 97-125.

Edzan, N.N. 2008. Information literacy development in Malaysia: a review. *Libri* 58, 265-280.

Francke, H., Sundin, O. & Limberg, L., 2011. Debating credibility: the shaping of information literacies in upper secondary school. *Journal of Documentation*, *67*(4): 675-694.

Fullard, A. 2016. Using the ACRL framework for information literacy to foster teaching and learning partnerships. *South African Journal of Libraries and Information Science*, 82(2): 46–56.

Hepworth, M. and Wema, E., 2006, 'The design and implementation of an information literacy training course that integrated Information and Library Science conceptions of information literacy, educational theory and information behaviour research: A Tanzanian pilot study', *Journal of Innovation in Teaching and Learning in Information and Computer Sciences* 5(1): 1–23.

Homann, B. 2003. German libraries at the starting line for the new task of teaching information literacy. *Library Review*, 52 (7): 310-318.

Howlader, A.I. & Islam, M.A., 2019. Information-seeking behaviour of undergraduate students: A developing country perspective. *IFLA journal*, *45*(2):140-156.

Idoko, Nkechi, Anthonia; Asogwa, Brendan E.; and Ugwuanyi, Richard N. C., 2015. Problems of library user education in Nigerian unity schools. *Library Philosophy and Practice* (e-journal). 1216. http://digitalcommons.unl.edu/libphilprac/1216

Kasowitz-Scheer, A. and Pasqualoni, M., 2002. Information literacy instruction in higher education: Trends and issues. ERIC Digest. Viewed 11 November 2024, form https://www.govinfo.gov/content/pkg/ERIC-ED465375/pdf/ERIC-ED465375.pdf

Kaushik, P. S., & Mishra, S. 2009. Necessity of information literacy in higher education in India. International Conference of Knowledge Networking in ICT Era, (pp. 108-114). Viewed 13 January 2025,from http://portal.unesco.org/ci/en/files/28265/12341778449.special_session_presentations.pdf).

Kuhlthau, C. 2004. *Seeking meaning: a process approach to library and information services.* 2nd ed. Westport, CT: Libraries Unlimited.

Lwehabura, M. J. F. 2018. "An Assessment of Information Literacy Skills among First-Year postgraduate Students at Sokoine University of Agriculture Tanzania." *Journal of Librarianship and Information Science* 50 (4): 427–34. https://doi.org/10.1177/0961000616667802.

Mahwasane, N. P., and N. P. Mudzielwana. 2016. "Challenges of Students in Accessing Information in the Library: A Brief Review." *Journal of Communication,* 7 (2): 216–21. https://doi.org/10.1080/0976691X.2016.11884900.

MathGenie. 2018. The Danger of Computer Illiteracy in an Increasingly Digital. Viewed 25 August 2024, from https://www.bing.com/search?q=%2bWorldhttps%3a%2f%2fwww.mathgenie.com%2fblog%2fthe-danger-ofcomputer-illiteracy-in-an-increasingly-digital-world&filters=rcrse%3a%221%22&FORM=RCRE

Matteson, M.L. & Gersch, B. 2020. Information literacy instruction in public libraries. *Journal of Information Literacy*, 14(2): 71–95.

Mery, Y., Newby, J., & Peng, K. 2012. Why One-shot Information Literacy Sessions Are Not the Future of Instruction: A Case for Online Credit Courses. *College & Research Libraries*, 73(4): 366–377.

Mnkeni-Saurombe, N. 2015. Information literacy: a cornerstone for open distance learning at the University of South Africa. *Journal of Librarianship and Information Science,* 47(2):156–165.

Moraka, T., Ntsala, M. & Dikotla, M.A., 2024. Self-efficacy in the adoption of online commercial databases by Information Studies students at the University of Limpopo in South Africa. *South African Journal of Libraries and Information Science*, *90*(1): 1-9.

Morris, D., 2020. A Review of Information Literacy Programmes in Higher Education: The Effects of Face-to-Face, Online and Blended Formats on Student Perception. *Journal of Information Literacy*, *14*(1):19-40.

Molepo, C.M. and Bopape, S., 2018. Information literacy education: perceptions, proficiencies and experiences of first-entering students at TUT. *Mousaion*, 36(3):1-20.

Moselen, C., and L. Wang. 2014. "Integrating Information Literacy into Academic Curricula: A Professional Development Programme for Librarians at the University of Auckland." *The Journal of Academic Librarianship* 40 (2): 116–23. https://doi.org/10.1016/j.acalib.2014.02.002.

Moyane, S.P., Dube, L. and Hoskins, R., 2015. Evaluating user education programmes for postgraduate students in the School of Management, Information Technology and Governance at the University of KwaZulu-Natal. *South African Journal of Libraries and Information Science*, 81(1): 28-40.

Moyo, M. & Okemwa, E.O., 2022. Students' perceptions of information literacy at two South African universities. *Library Philosophy and Practice (e-journal)*. 6821. Viewed 16 March 2024 from, https://digitalcommons.unl.edu/libphilprac/6821

Mudave, E., 2016. Information Literacy (IL) learning experiences: A literature review. *Inkanyiso: Journal of Humanities and Social Sciences*, *8*(1): pp.57-68.

Nierenberg, E, Låg T & Dahl, TI. 2021. Knowing and doing: The development of information literacy measures to assess knowledge and practice. *Journal of Information Literacy,* 15(2): 78–123.

Ocholla, L. 2016. The new roles of university libraries in supporting scholarly communication and research: A South African university library perspective. Viewed 24 August 2024, from: http://www.gpntb.ru/win/inter-events/crimea2016/disk/003.pdf.

Odede, I., 2020. Models for teaching information literacy: A comparative review of the top six models. *Mousaion: South African Journal of Information Studies*, *38*(2):1-19.

Omeluzor, S.U., A. A. Akibu, S. I. Dika, and C. C. Ukangwa. 2017. "Methods, Effect and Challenges of Library Instruction in Academic Libraries." *Library Philosophy and Practice* (e-journal) 1465. http://digitalcommons.unl.edu/libphilprac/1465.

Orr, D., Appleton, M., & Wallin, M. 2001. Information literacy and flexible delivery: Creating a conceptual framework and model. *Journal of Academic Librarianship*, 27(6), 457-463. (IR.545104).

Padma, P. and Ramasamy, K., 2016. Seven Pillars of Information Literacy Skills: A Gender-Based Evaluation. *ICOLIS* 2016,Kuala Lumpur: LISU,FCSIT, 2016:45-162.

Pant, M. K., and U. Negi. 2015. Redeeming the Information Overload: A Case Study on Doon University, Dehradun. *Library Philosophy and Practice* (e-journal) 1304. http://digitalcommons.unl.edu/libphilprac/1304.

Pattar, V. and Kanamadi, S. 2010. Content and delivery methods of information literacy programmes in academic libraries: a pilot study. *Information studies* 16(2): 102-113.

Pauleen, D.J. and Gorman, G.E. 2016. The nature and value of personal knowledge management, in Gorman, G. and Pauleen, D.J. (Eds), *Personal Knowledge Management: individual, Organizational and Social Perspectives*, Gower, Farnham, pp. 23-38

Saliba, R. 2021. An Examination of Undergraduate Student's Engagement in an Information Literacy Blended Course. *Studies in Technology Enhanced Learning* 1 (2). https://doi.org/10.21428/8c225f6e.d9353801.

Shai, K. and Solomon, B., 2021. Library User Education Prominence: Perspectives of Final-Year Students and Subject Reference Librarians from the University of Limpopo. *Mousaion*, *39*(3).

SCONUL Working Group on Information Literacy. 1999. Information skills in higher education: A SCONUL position paper. Prepared by the Information Skills Task Force, on behalf of SCONUL. Viewed 16 October 2024, from: http://www.sconul.ac.uk/publications/99104Rev1.

Tiemensma, L. 2012. Information literacy education in higher education institutions in South Africa. In *The road to information literacy: librarians as facilitators of learning*, edited by R. Gwyer, R. Stubbings and G. Walton. The Hague, Netherlands: De Gruyter Saur, pp. 155–168. https://doi.org/10.1515/9783110281002

UNESCO. 2008. *Towards information literacy indicators*. Paris: UNESCO.

Tshuma, T. and Chigada, J., 2018. Analysing information literacy practices at selected academic libraries in Zimbabwe. *South African Journal of Information Management* 20(1), a976. https://doi.org/10.4102/sajim.v20i1.976

University of Liverpool Teaching and Learning Committee, 2007. Information literacy standards. Viewed on 11 October 2024, From http://www.liv.ac.uk/library /using/literacy.pdf

Zhang, Q., M. Goodman, and S. Xie. 2015. Integrating Library Instruction into the Course Management System for a First-Year Engineering Class: An Evidence-Based Study Measuring the Effectiveness of Blended Learning on Students' Information Literacy Levels. *College and Research Libraries* 76 (7): 934–58. https://doi.org/10.5860/crl.76.7.934.

Wright, A.J. 2007. Pre-service preparation programmes for academic librarians for teaching information literacy. Accessed on 20 July 2024, from, http://www.proquest.umi.com.