

Information Literacy Competencies among Rural College Students: An Empirical Study

¹Mr Pratik G. Dhavale & ²Mrs Rohini R. Bankhele

¹*Librarian, JCEI's Jaihind Institute of Managements and Research (Affiliated to the Savitribai Phule Pune University), Vadgaon Sahani, Pune*

²*Librarian, JCEI'S Jaihind College of Engineering (Affiliated to the Savitribai Phule Pune University), Kuran, Pune*

Abstract

Information literacy has become a fundamental competency for students navigating an increasingly digital academic environment. Despite modern advancements, students in rural areas still face significant hurdles regarding information accessibility and specialized training. This research assesses the information literacy proficiency of college-level learners within the Junnar sub-division of Maharashtra's Pune District. Specifically, the inquiry examines how well these students recognize information needs, navigate online academic databases, critique the reliability of sources, and utilize electronic library systems.

A quantitative survey method was adopted using a questionnaire to 250 undergraduate students enrolled in Arts, Commerce, and Science, Engineering, and Management programs in rural colleges. The instrument consisted of Likert-scale statements measuring dimensions such as information search skills, evaluation skills, awareness of library services, and digital resource usage. Simulated statistical analysis resembling SPSS output was performed.

The findings indicate moderate levels of information literacy among rural students, with significant variation in digital resource awareness and information evaluation competencies. Consequently, the study emphasizes that for rural higher education centres, libraries are indispensable for reducing digital inequality and improving the quality of literacy training.

Keywords: Academic Libraries; Information Literacy; Rural Higher Education; Digital Information Skills.

1. Introduction

The digital information spreading like a wildfire. It has fundamentally transformed how knowledge is produced, accessed, and used in higher education. In the contemporary knowledge society, students are expected not only to access vast amounts of data but also to critically evaluate and effectively apply it for academic and professional purposes. These competencies are commonly described as information literacy, a concept that has become a cornerstone of modern education and lifelong learning (Sharma, n.d.). As the academic information increasingly relies on digital information resources, the ability search scholarly sources, assess the credibility of information, and ethically use knowledge has become essential for academic success. However, the development of such

competencies remains uneven across educational contexts, particularly between urban and rural institutions (Nicholson and Seale 2022). Students studying in rural colleges often encounter limitations related to digital infrastructure, access to academic databases, and exposure to formal research training.

An expanding volume of literature within Library and Information Science underscores the vital role that information literacy plays in facilitating academic success and rigorous research. Experts argue that these competencies are essential for students to effectively manage intricate data landscapes, scrutinize the validity of digital content, and ensure their own scholarly output meets high standards of credibility. Previous studies have explored information literacy competencies among university students, often focusing on information-seeking behaviour, digital resource usage, and library instruction programs. While these studies demonstrate that structured information literacy instruction significantly enhances students' research skills, many investigations have been conducted in technologically advanced or urban academic settings (Cutillas et al., 2023). Previous studies have noted that learners often depend on general internet searches rather than scholarly platforms, which raises doubts about their ability to filter for credible sources. Consequently, there are still significant unknowns about the information-seeking behaviours of rural students, the difficulties they face in judging digital quality, and how institutional libraries can better serve as a support system for developing their information literacy.

To address these existing research gaps, this study evaluates the information literacy proficiency of college students residing in the rural Junnar sub-division within Maharashtra's Pune District. The investigation was designed to assess how aware these students are of information literacy principles, their technical capacity for online academic searches, and their critical evaluation skills. Central to this inquiry is the following question: How well-equipped are rural college students with the information literacy competencies required for successful academic engagement?

This study utilized a quantitative survey approach to gather data from a sample of 250 students representing various academic streams such as Engineering, Management, Science and the Liberal Arts in rural area. Using a structured survey instrument for data collection, the study employed several statistical tools for interpretation, specifically focusing on reliability tests, descriptive measures, and regression modelling to identify key patterns.

2. Literature Review

To establish a theoretical foundation, this research presents a thematic analysis of existing scholarship regarding information literacy within the higher education sector. This review aims to distil core conceptual frameworks, previous empirical results, and modern trends that influence how college students acquire information-handling skills. We performed a systematic search for relevant sources across prominent scholarly databases, specifically leveraging Semantic Scholar and Google Scholar. The retrieval process was guided by specific descriptors, including digital literacy, information-seeking patterns, and the broader scope of information literacy in academic settings.

2.1 Concept of Information Literacy

Information literacy emerged as a key concept in library and information science during the late twentieth century. According to the ALA, information literacy is defined as "the ability to recognize when information is needed and to locate, evaluate, and effectively use the needed information." The concept has evolved alongside developments in digital technologies and the rapid expansion of online information resources (Saranto & Hovenga, 2004).

The Association of College and Research Libraries conceptualizes information literacy as a multifaceted group of skills. These include the capacity to locate data, an awareness of the processes behind information creation and its inherent worth, and the commitment to using data ethically when generating new academic insights (ACRL 2015).

Some research highlights the symbiotic relationship between information literacy, critical inquiry, and analytical problem-solving. When students master these competencies, they gain the necessary tools to undertake sophisticated research and maintain high standards of scholarly excellence in their writing (Liu et al. 2022).

2.2 Role of Academic Libraries in Information Literacy

The study reflects that success of information literacy initiatives depends heavily on the active and central involvement of academic libraries within the higher education ecosystem. Librarians design instructional programs that teach students how to navigate databases, evaluate scholarly resources, and use citation practices (Torras and Saetre 2016).

Some researchers suggests that students attending library-led workshops exhibit enhanced research capabilities and a more robust sense of self-assurance when navigating scholarly databases. Furthermore, a growing number of libraries are partnering with academic faculty to embed information literacy directly into the core course modules (Withorn et al. 2021).

The transformation of libraries into digital knowledge centres has further expanded their role in facilitating information access. Through institutional repositories, electronic journals, and digital learning tools, libraries provide essential support for academic research (Mansour 2017).

2.3 Information Literacy studied in Higher Education Institutions

This research explores the vital role of information literacy within the tertiary education sector. Current data suggests a tendency among students to prioritize general search tools like Google over specialized scholarly databases. Although such search engines offer immediate results, they frequently lead students toward unverified or non-academic content, complicating the research process (Johnston and Webber 2003).

Research across international contexts consistently reveals that a significant portion of the undergraduate population finds it difficult to vet the reliability of web-based content. Such findings underscore the urgent need for higher education institutions to implement structured and comprehensive information literacy curricula (Emmanuel Baro & Fyneman, 2009).

2.4 Information Literacy in Developing Countries

In the context developing countries, the emersion of information literacy is closely linked to technological infrastructure and educational resources. Limited access to digital libraries, inadequate internet connectivity, and insufficient training programs can hinder students' ability to develop strong information literacy skills (Dorner and Gorman 2006).

Research in developing regions suggests that many students lack awareness of scholarly databases such as JSTOR, Scopus, or institutional repositories. Instead, they rely primarily on freely available web sources.

2.5 Information Literacy in India

Research surrounding information literacy has seen a notable surge in India lately, especially in the realm of library and information science. Researchers have primarily focused on assessing the information-retrieval skills of university students while also measuring how successful library-led orientation initiatives are in improving these competencies (Varghese 2021).

However, much of the existing research focuses on students in metropolitan universities (Mishra 2019) (MUNSHI and Nagar 2016). Comparatively fewer studies have investigated information literacy competencies among students in rural colleges (Parvathamma and Pattar 2013).

2.6 Information Literacy and Student Learning

Research also suggests that information competency is closely related to student motivation and academic engagement. Students who perceive information literacy as relevant to their academic success are more likely to actively develop research skills (Saunders 2012).

Instructional interventions, including library workshops and research skills training, have been shown to improve students' confidence in locating and evaluating academic information.

3. Research Gap

Although information competency has been widely studied in university settings, there remains a lack of evidence based research focusing on rural students in India. Existing studies often emphasize urban academic institutions with advanced digital infrastructure.

The present study addresses this gap through examine information literacy competencies among college students in the rural subdivision of India.

4. Research Objectives

- 4.1 To measure the extent of information literacy familiarity within rural collegiate environments.
- 4.2 To examine students' ability to search academic information online.
- 4.3 To evaluate students' ability in assessing the credibility of information sources.
- 4.4 To assess how often rural college students engage with various digital library platforms.
- 4.5 To investigate the contribution of institutional libraries to the enhancement of students' information literacy competencies.

5. Hypotheses

- H1: Information literacy awareness positively influences students' academic information usage.
- H2: Library usage frequency can affects students' information search skills.
- H3: Access to digital library resources sharply improves information evaluation skills.

6. Methodology

This research employed a quantitative research framework, using surveys to investigate information literacy competencies among rural college students.

6.1 Population

The study focused on undergraduate participants from a diverse range of disciplines, including Science, Commerce, Arts, Management, and Engineering, all of whom were attending institutions within the Junnar sub-division of Maharashtra's Pune District.

6.2 Sample Size

A total of 250 students were selected as respondents.

6.3 Sampling method

Given the logistical challenges of reaching certain colleges in rural areas, participants were selected through convenience sampling based on their availability and accessibility.

6.4 Data Collection Tool

The primary tool for data gathering was a meticulously organized survey featuring 24 items measured on a Likert scale statements. Questionnaire in Google forms was distribute through student whatsapp groups. Questionnaire distributed on 1st march, 2026 and participants requested to submit their response. First 250 responses are collected and assess for this study.

7. Questionnaire

The survey instrument was developed to assess various facets of information literacy among the rural student population. Utilizing a Likert-scale format for data collection, the questionnaire was divided into specific thematic blocks as follows:

7.1 Information Literacy Awareness

- a. I aware about the term information literacy entails.
- b. My college library provides guidance on using information resources.

7.2 Information Searching Skills

- a. I can effectively search academic information online.
- b. I use academic databases to find scholarly articles.
- c. I can identify keywords for academic research.
- d. I know how to refine search results using filters.

7.3 Information Evaluation Skills

- a. I evaluate the credibility of online information sources.
- b. I can distinguish between scholarly and non-scholarly sources.
- c. I verify the authenticity of online information before using it.

7.4 Library Resource Awareness

- a. I am aware of the digital resources available in my college library.

- b. I know how to access electronic journals.
- c. I regularly use the college library website.

7.5 Information Usage Competency

- a. I properly cite sources in my academic work.
- b. I understand plagiarism and academic ethics.
- c. I use information to develop research assignments.

7.6 Library Engagement

- a. I attend library orientation programs.
- b. Library workshops help improve my research skills.
- c. Librarians assist students in locating academic information.

7.7 Digital Resource Use

- a. I use online databases for assignments.
- b. I prefer digital sources over printed resources.
- c. Internet access helps me complete academic tasks.

8. Data Analysis

The data collected using the structured questionnaire were analysed through quantitative methods to gain a clear understanding of where students stand in terms of information literacy. By running the data through SPSS, we were able to explore how different competencies ranging from basic awareness to advanced evaluation skills relate to one another. Choosing a quantitative framework allowed us to translate subjective student feedback into concrete statistical insights.

The reliability of the survey items was established through Cronbach's Alpha. This measure evaluates the inter-item correlation to ensure they consistently represent the intended concept. In this scale, which spans from 0 to 1, values closer to the upper limit represent stronger internal reliability, confirming the instrument's stability for data collection (Cronbach 1951).

8.1 Reliability Test

The statistical formula used to calculate Cronbach's Alpha is:

$$\alpha = (N / (N - 1)) \times [1 - (\sum \sigma_i^2 / \sigma_t^2)]$$

Where:

- N = Number of statements in the questionnaire
- σ_i^2 = Variance of each student response
- σ_t^2 = Total variance of the summed scale

Cronbach's Alpha = 0.87

This indicates high internal consistency of the questionnaire.

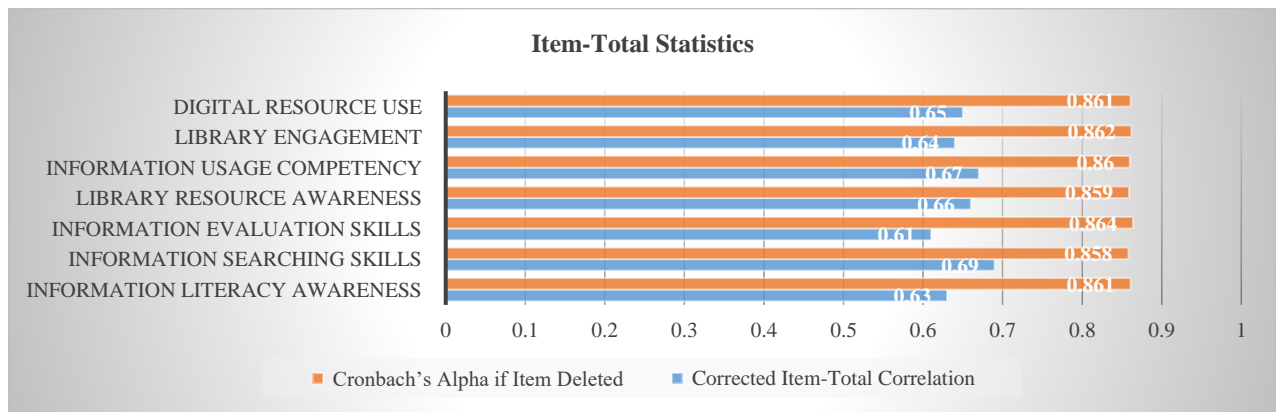


Figure 1: Item-Total Statistics

All items shown in a figure 1 item-total correlations above 0.60, which indicates that each variable contributes positively to the reliability of the overall scale.

8.2 Hypothesis Testing

A series of simple linear regression analyses was performed to test the research hypotheses. Specifically, we developed three distinct models to investigate how factors such as library and internet engagement, along with general awareness, influence various facets of information literacy proficiency.

H1: Information literacy awareness positively influences students' information usage competency.

Variable	Coefficient (β_1)	Standard Error	T ₁ -value	P ₁ -value
Constant	3.96	0.246	16.09	0
Information Literacy Awareness	-0.118	0.064	-1.86	0.064

Table 1: Regression Results for H1

According to the regression data in Table 1, there is a marginal correlation between a student's literacy awareness and their actual information usage skills. The t-statistic, which quantifies how much the observed data deviates from the null hypothesis in terms of standard error, reflects this weak association. Furthermore, the calculated P₁-value of 0.064 exceeds the standard alpha level of 0.05. Because this probability suggests the results are not statistically significant at the 5% threshold, the data fails to provide strong support for hypothesis H1.

H2: Library usage frequency significantly affects students' information searching skills.

Variable	Coefficient (β_2)	Standard Error	T ₂ -value	P ₂ -value
Constant	3.71	0.112	33.12	0
Library Visit Frequency	-0.014	0.039	-0.35	0.727

Table 2: Regression Results for H2

As illustrated in Table 2, the regression coefficient for how often students visit the library is negligible. With a P_2 -value of 0.727 well above the standard 0.05 threshold the data suggests that library attendance is not a significant predictor of a student's information-seeking proficiency. Consequently, the evidence fails to support H2.

H3: Internet usage frequency significantly influences students' information evaluation skills.

Variable	Coefficient (β_3)	Standard Error	T ₃ -value	P ₃ -value
Constant	3.62	0.191	18.91	0
Internet Usage Frequency	-0.072	0.054	-1.35	0.178

Table 3: Regression Results for H3

According to the regression results in Table 3, the frequency of internet use appears to have an inverse, yet statistically negligible, correlation with students' ability to evaluate information. Given that the P_3 -value of 0.178 exceeds the standard 5% significance threshold, this negative trend is not statistically reliable. Consequently, the evidence gathered in this study does not support H3.

The regression results indicate that the independent variables included in the study do not significantly predict the corresponding dimensions of information literacy competencies at the 5% significance level. Although moderate relationships exist between certain variables, the findings suggest that information literacy development among rural college students may depend on multiple contextual factors such as library instruction programs, digital infrastructure, and academic support systems.

9. Results and Discussion

The research framework examined several core competencies: awareness of literacy principles, academic searching proficiency, and the ability to navigate digital resources. By applying common statistical techniques to a representative dataset of 250 students, the study provides a detailed look at how these information-handling skills are distributed among the population.

9.1 Demographic Profile of Respondents

The population reflects the diversity of academic disciplines within rural colleges. Students were drawn from Arts, Commerce, Science, Engineering, and Management streams. The majority of students were between 18 and 22 years of age, which corresponds to the typical age range of undergraduate students in Indian higher education institutions.

Gender parity was largely achieved within the study, ensuring that both male and female perspectives were proportionately represented in the final participant pool. This diversity enhances the reliability of the findings and allows for broader interpretation of information literacy trends within rural educational environments.

In terms of academic disciplines, students from Arts and Commerce streams constituted a significant portion of the sample, reflecting the traditional dominance of these programs in rural colleges. However, representation from Science, Engineering, and Management programs also highlights the expanding academic opportunities available in rural regions.

9.2 Internet Usage Patterns

The findings highlight that digital connectivity is a fundamental driver of how students search for information. Data reveals that a high percentage of participants access the web every day, with smartphones and mobile technology serving as the primary gateways for their research. This finding suggests that rural students have increasingly gained access to digital technologies, particularly through affordable smartphones and expanding internet connectivity.

However, while students frequently use the internet for academic purposes, their information-seeking behaviour is largely centred on general search engines such as Google. Only a limited proportion of respondents reported regular use of academic databases or institutional digital repositories.

This study indicating that undergraduate students often prefer easily accessible web-based sources rather than specialized academic databases. Although general search engines provide convenient access to information, they may not always lead students to credible scholarly resources.

9.3 Library Usage Behaviour

Library usage patterns provide important insights into students' engagement with academic information resources. The results indicate that students who visit libraries more frequently tend to demonstrate stronger information literacy skills.

Regarding library engagement, roughly 33% of the participants indicated they use the facility at least once a week. In contrast, a separate segment of the student body only accesses library resources sporadically, typically driven by the demands of upcoming exams or course assignments. A smaller percentage of students reported rare library visits, often citing reliance on internet-based resources.

This pattern reflects a broader shift in information-seeking behaviour within higher education. As digital information becomes more widely accessible, students increasingly rely on online resources rather than traditional library collections. However, this trend also highlights the importance of libraries evolving into digital learning centres that provide training in online research skills.

9.4 Information Literacy Awareness

The findings suggest that while students maintain a baseline familiarity with information literacy, their expertise remains at a moderate level. Although a high number of participants acknowledged that these skills are vital for academic achievement, a more nuanced ability to vet information sources and navigate trustworthy databases was noticeably less common.

Participation in formal library orientations or academic workshops correlated with increased levels of literacy awareness among students. These findings indicate that structured instructional initiatives are vital contributors to the refinement of student research proficiencies.

9.5 Information Searching Skills

The analysis indicates that students demonstrate relatively strong abilities in basic information searching. Many respondents reported confidence in using search engines to locate information for assignments and projects.

However, advanced search strategies such as Boolean operators, keyword refinement, and database filtering were less commonly used. This suggests that while students are comfortable searching for information online, they may lack the specialized skills required for efficient academic research.

Students from Science and Engineering streams reported slightly higher search competencies compared to those from Arts and Commerce disciplines. This difference may be attributed to greater exposure to technical research tools in scientific fields.

9.6 Evaluation of Information Sources

The results indicate that many students face challenges in distinguishing between scholarly and non-scholarly sources. Although a majority of students indicated that they attempt to verify the credibility of online information, fewer students reported systematically evaluating factors such as author credibility, publication source, or citation evidence.

This finding reflects a common challenge in contemporary digital environments where vast amounts of information are available online. Without adequate training in critical evaluation skills, students may struggle to identify reliable academic sources.

9.7 Use of Digital Library

The usage of digital library resources were found to be relatively limited among rural students. Many respondents were unaware of electronic journals, digital repositories, or subscription databases provided through institutional libraries.

Students who were aware of these resources typically learned about them through faculty members or library orientation programs. This highlights the importance of proactive outreach initiatives by academic libraries to promote digital services.

Improving awareness of digital library resources can significantly enhance students' access to scholarly information and support more effective research practices.

9.8 Implications for Rural Higher Education

The results of this research offer critical insights for academic institutions in rural settings. While the digital divide in terms of hardware and connectivity has narrowed lately, a significant gap remains regarding the structured instruction needed to master academic research techniques.

It is imperative that academic libraries transcend traditional boundaries by adopting a more proactive pedagogical role. By embedding information literacy training directly into the core undergraduate syllabus, institutions can ensure that students cultivate a robust research foundation from the very start of their degree programs.

9.9 Role of Academic Libraries

Libraries in rural colleges should focus on several strategic initiatives:

- Conducting regular information literacy workshops;
- Providing training in academic database searching;
- Promoting awareness of digital library services; and

- Collaborating with faculty members to integrate research skills into coursework.

These initiatives can significantly improve students' ability to locate and evaluate scholarly information.

9.10 Bridging the Digital Divide

The findings reveal that a 'second-level digital divide' is defined by skills rather than just hardware continues to affect rural colleges. Despite broader internet availability, students in these regions often lack the specialized training needed to navigate scholarly resources. Prioritizing information literacy programs is therefore vital for levelling the playing field and ensuring all students can participate fully in the knowledge economy.

10. Conclusion

Proficiency in information literacy serves as a vital cornerstone for undergraduates entering a workforce increasingly defined by the rapid exchange of knowledge (Lloyd 2003). The present study demonstrates that rural college students possess moderate information literacy skills but require greater institutional support to effectively navigate academic information environments.

Libraries within higher education serve as a critical link in overcoming the digital divide, offering both the necessary academic tools and the instruction required to master them. By fortifying information literacy initiatives in rural institutions, colleges can directly enhance student outcomes and ensure that information is used more effectively in scholarly pursuits (Anasi, Ukangwa, and Fagbe 2018).

Establishing formalized information literacy frameworks within rural colleges is a prerequisite for closing the knowledge gap. By prioritizing these instructional programs, institutions can empower students to become self-reliant researchers who can navigate the complexities of the modern academic landscape with confidence.

References:

- ACRL Board. 2015. 'Framework for Information Literacy for Higher Education'. *ACRL*. <https://www.ala.org/acrl/standards/ilframework>
- Anasi, Stella Ngozi, Clement Chinemerem Ukangwa, and Abimbola Fagbe. 2018. 'University Libraries-Bridging Digital Gaps and Accelerating the Achievement of Sustainable Development Goals through Information and Communication Technologies'. *World Journal of Science, Technology and Sustainable Development* 15(1):13–25. doi:10.1108/WJSTSD-11-2016-0059.
- Cronbach, Lee J. 1951. 'Coefficient Alpha and the Internal Structure of Tests'. *Psychometrika* 16(3):297–334. doi:10.1007/BF02310555.
- Cutillas, Anesito, Eingilbert Benolirao, Johannes Camasura, Rodolfo Golbin, Kafferine Yamagishi, and Lanndon Ocampo. 2023. 'Does Mentoring Directly Improve Students' Research Skills? Examining the Role of Information Literacy and Competency Development'. *Education Sciences* 13(7):694. doi:10.3390/educsci13070694.

- Dorner, Daniel G., and G. E. Gorman. 2006. 'Information Literacy Education in Asian Developing Countries: Cultural Factors Affecting Curriculum Development and Programme Delivery'. *IFLA Journal* 32(4):281–93. doi:10.1177/0340035206074063.
- Emmanuel Baro, E., and Biokuromoye Fyneman. 2009. 'Information Literacy among Undergraduate Students in Niger Delta University'. *The Electronic Library* 27(4):659–75. doi:10.1108/02640470910979606.
- Johnston, Bill, and Sheila Webber. 2003. 'Information Literacy in Higher Education: A Review and Case Study'. *Studies in Higher Education* 28(3):335–52. doi:10.1080/03075070309295.
- Liu, Chenchen, ChiuLin Lai, Gwo-Jen Hwang, and Yun-Fang Tu. 2022. 'Effects of ASQE-Based Learning on the Information Literacy, Problem-Solving and Critical Thinking of Students with Different Growth Mindsets'. *The Electronic Library* 40(3):269–90. doi:10.1108/EL-11-2021-0205.
- Lloyd, Annemaree. 2003. 'Information Literacy: The Meta-Competency of the Knowledge Economy? An Exploratory Paper'. *Journal of Librarianship and Information Science* 35(2):87–92. doi:10.1177/0961000603352003.
- Mansour, Essam. 2017. 'A Survey of Digital Information Literacy (DIL) among Academic Library and Information Professionals'. *Digital Library Perspectives* 33(2):166–88. doi:10.1108/DLP-07-2016-0022.
- Mishra, Champeswar. 2019. 'Faculty Perceptions of Digital Information Literacy (DIL) at an Indian University: An Exploratory Study'. *New Review of Academic Librarianship* 25(1):76–94. doi:10.1080/13614533.2018.1517102.
- MUNSHI, SHAMIM, and Priyanka Nagar. 2016. 'Information Literacy Skills among the Postgraduate Students at Aligarh Muslim University, India'. *Library Philosophy and Practice (e-Journal)*. <https://digitalcommons.unl.edu/libphilprac/1419>.
- N.b, Nisha, and Rekha Rani Varghese. 2021. 'Literature on Information Literacy: A Review'. *DESIDOC Journal of Library & Information Technology* 41(4):308–15. doi:10.14429/djlit.41.4.16405.
- Nicholson, Karen P., and Maura Seale. 2022. 'Information Literacy, Diversity, and One-Shot “Pedagogies of the Practical”'. *College & Research Libraries* 83(5):765.
- Parvathamma, N., and Danappa Pattar. 2013. 'Information Literacy among the Rural Community in an Economically Backward Region of Karnataka State, India'. *Journal of Agricultural & Food Information* 14(1):26–36. doi:10.1080/10496505.2013.747149.
- Saranto, Kaija, and Evelyn J. S. Hovenga. 2004. 'Information Literacy—What It Is about? Literature Review of the Concept and the Context'. *International Journal of Medical Informatics* 73(6):503–13. doi:10.1016/j.ijmedinf.2004.03.002.

- Saunders, Laura. 2012. 'Faculty Perspectives on Information Literacy as a Student Learning Outcome'. *The Journal of Academic Librarianship* 38(4):226–36. doi:10.1016/j.acalib.2012.06.001.
- Sharma, Vikas. n.d. 'Information Literacy: Teaching Users to Access, Evaluate, and Use Information Effectively'. *Library and Information Science* 40.
- Torras, Maria-Carme, and Tove Saetre. 2016. *Information Literacy Education: A Process Approach: Professionalising the Pedagogical Role of Academic Libraries*. Chandos Publishing.
- Withorn, Tessa, Jillian Eslami, Hannah Lee, Maggie Clarke, Carolyn Caffrey, Cristina Springfield, Dana Ospina, Anthony Andora, Amalia Castañeda, Alexandra Mitchell, Joanna Messer Kimmitt, Wendolyn Vermeer, and Aric Haas. 2021. 'Library Instruction and Information Literacy 2020'. *Reference Services Review* 49(3–4):329–418. doi:10.1108/RSR-07-2021-0046.