
An Analytical Study of Digital Literacy Levels among Arts, Commerce, and Science Students in Pandharpur

Manjare Varsharani Nagannath

Assistant Profession,

Department of Statistics

Karmaveer Bhaurao Patil Mahavidyalaya, Pandharpur

varshamanjare2000@gmail.com

Abstract: Digital literacy has become an essential skill in contemporary education, enabling students to effectively access, analyze, and utilize digital information for academic and professional purposes. The present study, aims to evaluate and compare the level of digital literacy among students from different academic streams. The study is based on a descriptive and comparative research design. Primary data were collected from students of Arts, Commerce, and Science streams in various colleges of Pandharpur using a structured questionnaire. The assessment of digital literacy was carried out across key dimensions such as basic computer knowledge, internet usage, information evaluation skills, digital communication, and use of academic digital resources. Appropriate statistical tools were applied to analyze and compare the data. The findings of the study indicate a significant difference in digital literacy levels among the three streams. Science students were found to possess the highest level of digital literacy, followed by Commerce students, while Arts students exhibited comparatively lower levels. This variation may be attributed to differences in curriculum exposure, access to technology, and practical engagement with digital tools. The study emphasizes the need for focused digital literacy initiatives, particularly for Arts students, to reduce the digital divide and promote balanced academic development. The results of this study can support educators and policymakers in designing stream-specific strategies to enhance digital competencies among students in higher education.

Keywords: *Digital Literacy, Arts, Commerce, Science, Comparative Study, Higher Education, Pandharpur*

2. Literature Review

Recent studies in India have highlighted the growing importance of digital literacy in higher education, while also revealing disparities in skills, access, and application among students.

A study by Leeladharan and Sarin (2025) examined digital literacy among higher education students in India, particularly in relation to e-governance services. The findings revealed a positive and statistically significant relationship between digital literacy and trust in digital platforms, indicating that students with higher digital skills are more confident in using online government services. This study emphasizes the broader societal impact of digital literacy beyond academics. Another recent study by Solanki (2025) focused on digital literacy competencies in Indian higher education institutions. The research identified significant disparities in digital skills due to infrastructural, economic, and geographical factors, and suggested the need for competency-based frameworks and institutional support to improve digital literacy among students. The study also highlighted the evolving role of academic institutions and libraries in promoting digital competencies. Keerthi and Uma Maheswari (2026) conducted a study on engineering

students in India and found that there exists a considerable gap between students' digital literacy skills and industry expectations. The research, based on survey and interview methods, emphasized the necessity of integrating digital literacy into the curriculum to enhance employability and align education with market demands. A survey study conducted at the Central University of Tamil Nadu (2022) revealed that most university students possess good digital literacy skills, particularly in using digital tools and online resources. However, the study also noted that students still prefer traditional learning resources such as printed materials, indicating a transitional phase between conventional and digital learning environments. Further, broader analyses on digital literacy in India indicate that despite rapid technological growth, challenges such as digital divide, lack of awareness, and inadequate infrastructure continue to hinder digital literacy development, especially in rural and semi-urban areas. These barriers create unequal access to digital resources and affect students' learning outcomes. Additionally, recent reports based on UDISE+ and NSSO data (2024–25) highlight that digital access and usage remain uneven across regions, gender, and socio-economic groups, reinforcing the need for inclusive digital education policies.

Summary of Research Gap

From the above studies, it is evident that while digital literacy has been widely studied in India, there is:

- Limited stream-wise comparison (Arts, Commerce, Science)
- Lack of region-specific studies (such as Pandharpur)
- Need for comparative analysis across academic disciplines

Thus, the present study attempts to fill this gap by analyzing and comparing digital literacy levels among Arts, Commerce, and Science students in Pandharpur.

3. Objectives and Scope of the Study

The present study aims to examine digital literacy among students utilizing the KBP College Library in Pandharpur. Specifically, the study seeks to analyze the level of awareness and competency in digital literacy among library users. It also focuses on assessing the effectiveness of library and information services in supporting digital literacy development. Furthermore, the study intends to compare digital literacy levels among students belonging to different academic streams, namely Arts, Commerce, and Science, in order to identify stream-wise variations and gaps.

Scope of the Study

The scope of the present research is confined to the study of digital literacy among students who are users of the KBP College Library in Pandharpur. The study primarily focuses on students from three major academic streams: Arts, Commerce, and Science. It encompasses various dimensions of digital literacy, including basic computer knowledge, internet usage, information retrieval skills, and the use of digital library resources and services. The study aims to provide a comparative understanding of digital literacy across these streams within the institutional context.

4. Role of Digital Literacy among Students in Libraries

Digital literacy has emerged as a critical competency in the contemporary knowledge-driven society, significantly transforming the way students access, evaluate, and utilize information within library environments. Over the past few decades, rapid advancements in digital technologies have reshaped educational practices, making digital literacy an essential skill for academic success and lifelong learning.

Digital literacy extends beyond basic computer usage; it encompasses the ability to effectively locate, critically evaluate, create, and communicate information using digital technologies in an efficient and ethical manner. In the context of academic libraries, digital literacy plays a pivotal role in enabling students to access a diverse range of information resources, including e-books, e-journals, online databases, multimedia content, and institutional repositories. Digitally literate students are better equipped to conduct advanced searches, evaluate the credibility of digital sources, and utilize scholarly databases for academic research. Furthermore, digital literacy facilitates collaborative learning through the use of digital tools, enabling students to engage in knowledge sharing, group discussions, and academic networking. Modern libraries have evolved into hybrid or fully digital knowledge centers, often referred to as “information hubs,” providing value-added services through digital platforms.

The integration of digital library systems allows users to efficiently search, retrieve, and manage information using advanced search algorithms and metadata systems. These digital environments significantly reduce the time required to locate relevant information and enhance the overall user experience. Additionally, libraries play a crucial role in promoting open access resources, thereby democratizing access to knowledge and supporting inclusive education. Libraries also contribute to bridging the digital divide by offering access to essential technological infrastructure such as computers, internet connectivity, and digital learning resources.

They serve as community learning centers where students and other users can develop digital competencies through training programs, workshops, and orientation sessions. Such initiatives are particularly beneficial for individuals from marginalized backgrounds or those with limited exposure to digital technologies, thereby fostering equitable access to information and supporting lifelong learning. Moreover, the proliferation of social networking and digital communication platforms has further expanded the scope of digital literacy in library services. Platforms such as Facebook, Instagram, Twitter, LinkedIn, YouTube, and WhatsApp are increasingly utilized by libraries to disseminate information, organize virtual events, conduct live lectures, and facilitate academic discussions. In addition, digital content formats such as blogs, podcasts, wikis, and online forums enable interactive learning and real-time knowledge exchange among students and educators.

In conclusion, digital literacy significantly enhances the role of libraries as dynamic learning environments by enabling efficient information access, fostering collaborative learning, and promoting inclusive and lifelong education. As digital technologies continue to evolve, the integration of digital literacy within library services becomes indispensable for empowering students to effectively participate in the digital academic ecosystem.

5. Research Methodology

The present study adopts a descriptive and analytical research design to examine digital literacy levels among students of KBP College, Pandharpur, with special reference to Arts, Commerce, and Science streams.

Data Collection

The study is based on both primary and secondary data. Primary data were collected through a structured questionnaire designed to assess digital literacy awareness, computer proficiency, internet usage, and the use of digital library services. The questionnaires were personally distributed and collected to ensure accuracy and a high response rate.

Population and Sampling

The population of the study includes students from Arts, Commerce, and Science streams of KBP College, Pandharpur. A total of 60 students were selected using a simple random sampling technique, ensuring representation from all three streams.

Sample Size

Students: 60 respondents (Arts, Commerce, and Science)

6. Data Analysis

The collected data were analyzed using statistical tools such as percentages and comparative analysis to evaluate and compare digital literacy levels among students of different academic streams.

6.1 Frequency of Library Visit

Frequency	Science Students	Arts Students	Commerce Students
Daily	8 (42.10%)	8 (42.10%)	7 (38.88%)
Weekly	5 (26.31%)	6 (31.57%)	6 (33.33%)
Fortnightly	4 (21.05%)	3 (15.78%)	4 (22.22%)
Monthly	2 (10.52%)	2 (10.52%)	1 (5.55%)

The table 6.1, indicates that the majority of students visit the library daily or weekly, with Science and Arts students showing slightly higher daily usage. Monthly visits are minimal, suggesting regular academic dependence on library resources.

6.2 Awareness of Digital Literacy

Awareness	Science (YCIS)	Arts (CSC)	Commerce
Yes	15 (78.9%)	14 (73.6%)	15 (83.3%)
No	4 (21.5%)	5 (26.3%)	3 (16.66%)

A high level of awareness is observed across all streams, with Commerce students showing the highest awareness. However, a notable percentage still lacks awareness, indicating scope for improvement.

6.3 Level of Digital Literacy

Level	Science	Arts	Commerce
High	3 (15.78%)	2 (10.5%)	2 (11.1%)
Average	15 (78.9%)	14 (73.6%)	14 (77.7%)
Low	1 (5.26%)	3 (15.7%)	2 (11.1%)

Most students fall under the average category, while only a small proportion exhibit high digital literacy. Science students perform slightly better compared to others.

6.4 Purpose of Using Digital Information

Purpose	Science	Arts	Commerce
Assignment	7 (36.84%)	8 (42.10%)	7 (38.88%)
Project Work	8 (42.10%)	7 (36.84%)	8 (44.44%)
Writing Research Paper	4 (21.05%)	3 (15.78%)	3 (16.66%)
Research	2 (10.52%)	1 (5.2%)	1 (5.55%)
General Knowledge	7 (36.85%)	6 (31.57%)	8 (44.44%)

Students mainly use digital resources for assignments and project work, while research-related usage is comparatively low, indicating limited engagement in advanced academic activities.

6.5 Awareness of Library Services

Services	Science	Arts	Commerce
Book Circulation	18 (94.73%)	18 (94.73%)	17 (94.73%)
Reference	12 (63.15%)	11 (57.89%)	12 (66.15%)
CAS	3 (15.28%)	2 (10.52%)	2 (11.52%)
SDI	1 (5.26%)	2 (10.52%)	1 (5.56%)
Online Database	6 (31.57%)	4 (21.05%)	5 (27.31%)
Internet	12 (63.15%)	13 (68.42%)	15 (83.94%)
OPAC	3 (15.78%)	3 (15.78%)	4 (22.05%)
E-Journals	6 (31.57%)	7 (36.84%)	5 (27.31%)

Awareness is highest for basic services (book circulation, internet), while awareness of advanced services like CAS, SDI, and OPAC remains low, indicating underutilization.

6.6 ICT/Digital Literacy Skills

Skill	Science	Arts	Commerce
PPT	15 (78.9%)	16 (84.3%)	14 (77.7%)
MS Word	15 (78.9%)	16 (84.3%)	14 (77.7%)
MS Excel	15 (78.9%)	16 (84.3%)	14 (77.7%)
OPAC	5 (26.3%)	4 (21.5%)	4 (22.2%)
Open/Save Files	16 (84.2%)	14 (73.6%)	16 (88.8%)
Transfer Files	16 (84.2%)	15 (78.9%)	16 (88.8%)
Print Documents	14 (73.6%)	15 (78.9%)	16 (88.8%)
N-LIST	4 (21.5%)	3 (15.7%)	3 (16.6%)

Students are proficient in basic ICT tools, but lack familiarity with library-specific digital tools like OPAC and N-LIST.

6.7 Internet Literacy Skills

Skill	Science	Arts	Commerce
Gmail	16 (84.2%)	18 (94.7%)	16 (88.8%)
Google Chrome	18 (94.7%)	16 (94.7%)	14 (77.7%)
Internet Browsing	17 (89.4%)	17 (84.2%)	14 (77.7%)
Online Databases	15 (78.9%)	14 (89.4%)	14 (77.7%)

Download Articles	15 (78.9%)	14 (73.6%)	13 (72.2%)
Download Files	15 (78.9%)	16 (73.6%)	13 (72.2%)
Search Articles	13 (60.4%)	12 (84.2%)	12 (66%)
Video Conferencing	18 (94.7%)	18 (63.1%)	16 (88.8%)

Students show strong internet usage skills, especially in browsing and communication. However, research-related skills such as searching academic articles are comparatively weaker, particularly among Commerce students.

The overall analysis of the data presented in Tables 4.1 to 4.9 indicates that students across Arts, Commerce, and Science streams possess a satisfactory level of basic digital literacy skills, particularly in areas such as internet browsing, use of common software tools, and communication platforms. As observed in Table 4.3, a high proportion of students are aware of digital literacy, reflecting a positive trend toward digital adoption. However, Table 4.4 reveals that the majority of students fall within the *average category* of digital literacy, with only a limited percentage demonstrating advanced proficiency.

The findings from Table 4.1 further show that students frequently visit the library, indicating active engagement with academic resources. Despite this, Table 4.7 highlights that awareness and utilization of advanced library services such as OPAC, CAS, SDI, and online databases remain relatively low. Additionally, Tables 4.8 and 4.9 indicate that while students are proficient in basic ICT and internet skills, their ability to use academic tools such as N-LIST and research databases is comparatively limited.

The purpose-wise analysis in Table 4.5 shows that digital resources are primarily used for assignments and project work, with less emphasis on research activities and scholarly writing. Stream-wise comparison suggests that Science students consistently demonstrate higher digital competency, followed by Commerce and Arts students. Overall, the study identifies a clear gap between basic digital literacy and advanced academic digital skills, emphasizing the need for structured training programs, workshops, and awareness initiatives. Strengthening students' competencies in digital library tools and research-oriented platforms will enhance their academic performance and promote effective utilization of digital resources.

7. Conclusion

The present study titled “*An Analytical Study of Digital Literacy Levels among Arts, Commerce, and Science Students in Pandharpur*” provides a comprehensive understanding of digital literacy competencies among students across different academic streams. The findings indicate that while a majority of students possess basic digital literacy skills, including the use of internet tools, communication platforms, and common software applications, there exists a noticeable gap in advanced academic and research-oriented digital competencies.

The analysis reveals that Science students demonstrate comparatively higher levels of digital literacy, followed by Commerce and Arts students, which may be attributed to their greater exposure to technology-based curricula and practical applications. Although awareness of digital literacy is relatively high among students, the level of proficiency largely remains within the average category, indicating the need for further skill enhancement.

The study also highlights that students frequently utilize digital resources for assignments and project work, but their engagement in research activities and use of scholarly databases is limited. Furthermore, while

basic library services are widely recognized and used, awareness and utilization of advanced digital library services such as OPAC, N-LIST, and online databases remain insufficient.

Overall, the study concludes that there is a critical need to bridge the gap between basic and advanced digital literacy skills. Educational institutions and libraries should take proactive measures by organizing training programs, workshops, and awareness sessions to enhance students' digital competencies. Strengthening digital literacy will not only improve academic performance but also prepare students to effectively participate in the evolving digital knowledge society.

References

- [1] National Statistical Office. (2022). *Household Social Consumption on Education in India*. Government of India.
- [2] Ministry of Education. (2023). *All India Survey on Higher Education (AISHE) Report 2022–23*. Government of India.
- [3] INFLIBNET Centre. (2023). *N-LIST Programme: Access to E-Resources in Higher Education*.
- [4] University Grants Commission. (2022). *Digital Initiatives in Higher Education*.
- [5] Eshet, Y. (2012). Thinking in the digital era: A revised model for digital literacy. *Issues in Informing Science and Information Technology*, 9, 267–276.
- [6] Ng, W. (2012). Can we teach digital natives digital literacy? *Computers & Education*, 59(3), 1065–1078.
- [7] Martin, A. (2006). A European framework for digital literacy. *Digital Literacies for Learning*, 151–161.
- [8] Gilster, P. (1997). *Digital Literacy*. New York: Wiley.
- [9] Bawden, D. (2008). Origins and concepts of digital literacy. *Digital Literacies: Concepts, Policies and Practices*, 17–32.
- [10] UNESCO. (2018). *A Global Framework of Reference on Digital Literacy Skills*. Paris: UNESCO.
- [11] Mishra, S., & Koehler, M. (2006). Technological pedagogical content knowledge. *Teachers College Record*, 108(6), 1017–1054.
- [12] Kumar, R., & Kumar, A. (2021). Digital literacy among students in higher education: An Indian perspective. *International Journal of Information Studies*, 13(2), 45–58.
- [13] Sharma, P., & Singh, R. (2022). Use of digital library resources by students in India. *Library Philosophy and Practice*, 1–15.
- [14] Patel, J., & Jain, S. (2023). Digital literacy skills among college students: A comparative study. *Journal of Educational Technology*, 20(1), 33–47.
- [15] Reddy, P., Sharma, B., & Chaudhary, K. (2020). Digital literacy: A review of literature. *International Journal of Technoethics*, 11(2), 65–94.
- [16] Singh, K. (2021). Awareness and use of e-resources among students. *DESIDOC Journal of Library & Information Technology*, 41(3), 150–156.
- [17] Kaur, M., & Kaur, R. (2019). Role of academic libraries in digital literacy development. *International Journal of Library Science*, 8(2), 25–30.
- [18] Solanki, M. (2025). Digital literacy competencies in Indian higher education. *Global Education Journal*, 15(1), 112–125.
- [19] Leeladharan, S., & Sarin, A. (2025). Digital literacy and e-governance adoption in India. *SRELS Journal of Information Management*, 62(1), 45–55.
- [20] Government of India. (2021). *National Education Policy (NEP) 2020*. Ministry of Education.