Use Patterns of Electronic Information Resources among Students and Teachers in Horticultural Colleges in Karnataka: A Study

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Abstract

Electronic information resources have transformed the way academic communities access, retrieve, and utilise information for teaching, learning, and research. The present study examines the use of electronic information resources among teachers and students of horticultural colleges in Karnataka. The study was conducted among 2,033 respondents, comprising 207 teachers and 1,826 students from 12 horticultural colleges, using a structured questionnaire. Computer laboratories and libraries were the primary locations for Internet access, while Google emerged as the most preferred search engine. Significant differences were observed between teachers and students with respect to computer literacy, Internet literacy, Internet usage, and duration of Internet use, whereas perceptions regarding the adequacy of infrastructure facilities did not differ significantly. The study concludes that electronic information resources have become indispensable in horticultural education and highlights the need for continuous improvement of digital infrastructure and information literacy programmes to enhance their effective utilisation.

Keywords

Electronic Information Resources; Internet Use; Computer Literacy; Internet Literacy; Horticultural Colleges, Karnataka.

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1. Introduction

Electronic information resources have become indispensable in higher education by providing quick, convenient, and remote access to scholarly information. With the rapid advancement of information and communication technologies, teachers and students increasingly rely on electronic journals, e-books, online databases, institutional repositories, and internet resources to support teaching, learning, and research. In agricultural and horticultural education, where current scientific information is essential, electronic resources facilitate access to recent research findings and improve academic productivity. Understanding the pattern of electronic resource usage helps libraries evaluate existing services and identify areas requiring improvement. Therefore, the present study examines the use of electronic information resources among teachers and students of horticultural colleges in Karnataka.

2. Literature Review

Previous studies have consistently shown that electronic information resources have become integral to teaching, learning, and research in higher education. Madhusudhan (2010) reported that research scholars extensively relied on electronic resources, particularly e-journals and online databases, for academic work. Manhas et al. (2015) found that both teachers and students frequently used the Internet and electronic resources to access information, although their search behaviour and usage patterns differed. Similarly, Ranjan and Pradhan (2019) observed that faculty members in agricultural universities increasingly depended on electronic information resources for research and instructional activities. Studies by Naik et al. (2019) and Chandrashekar and Dharani Kumar (2021) highlighted the growing awareness and use of e-resources among college students, while emphasising the importance of digital literacy and institutional support**.** Ahmadianyazdi and Chandrashekara (2019) further noted that effective utilization of electronic resources depends on users' awareness, Internet skills, and the availability of adequate infrastructure. Kiran Kumar and Kumbar (2012) and Surendra and Kumbar (2025) also attempted to bring out the trends and developments in these areas. Collectively, these studies indicate that electronic information resources have become indispensable in academic environments, although their effective use remains

influenced by users' competencies and institutional facilities.

3. Objectives of the Study

The present study was undertaken with the following objectives:

1. To assess the computer and Internet literacy levels among teachers and students of horticultural colleges in Karnataka.
2. To examine the access to and use of electronic information resources by the respondents.
3. To analyze the patterns of Internet usage, including place, duration, and purpose of use.
4. To assess the adequacy of infrastructure facilities available for accessing electronic information resources.
5. To identify the search engines preferred by teachersand students for accessing electronic information resources.

4. Methodology of the Study

The study was conducted among teachersand students of twelve horticultural colleges in Karnataka. Data were collected through a structured questionnaire from 2,033 respondents, comprising 207 teachersand 1,826 students. The collected data were analysed using descriptive statistics, including frequencies, percentages, weighted mean scores, and inferential statistical techniques such as Chi-square and Fisher's Exact Test, wherever applicable. The findings are presented through tables and figures for interpretation.

5. Data Analysis and Interpretation

Table 5.1: Extent of Computer Literacy

Level of Computer Literacy	Teachers (n=207)	Students (n=1826)	Total (n=2033)
Expert	31	419	450
	(14.98)	(22.95)	(22.13)
Good	75	723	798
	(36.23)	(39.59)	(39.25)
Average	62	417	479
	(29.95)	(22.84)	(23.56)
Below Average	20	186	206
	(9.66)	(10.19)	(10.13)
Beginner	19	81	100
	(9.18)	(4.44)	(4.92)
Total	**207**	**1826**	**2033**
	(100)	**(100)**	**(100)**
$\chi^2 = 18.42$ *df* = 4 *p* = .001 V=.10			

Note. Numbers mentioned in parentheses are percentages.

Table 5.1 shows that the majority of the respondents had good computer literacy (39.25%), followed by average (23.56%) and expert (22.13%) levels. Among teachers, 36.23% reported good computer literacy, while 39.59% of students did. The Chi-square test revealed a statistically significant association between respondent category and computer literacy level (χ^2 = 18.42, df = 4, p = .001). However, the Cramer's V value (0.10) indicates that the association is weak. Overall, students demonstrated slightly higher computer literacy than teachers.

Table 5.2: Use of the Internet

Internet Usage	Teachers (n=207)	Students (n=1826)	Total (n=2033)
Yes	207	1703	1910
	(100)	(93.26)	(93.95)
No	0	123	123
		(6.74)	(6.05)
Total	**207**	**1826**	**2033**
	(100)	**(100)**	**(100)**
Fisher's Exact Test (two-tailed *p*< .001)			

Note. Numbers mentioned in parentheses are percentages.

Table 5.2 indicates that 93.95% of the respondents used the Internet. All teachers (100%) reported using the Internet, while 93.26% of students used it and 6.74% did not. The Fisher's Exact Test (p < .001) shows a statistically significant difference in Internet usage between teachersand students. Overall, Internet usage was very high among the respondents, highlighting its importance in academic activities.

Table 5.3: Extent of Internet Literacy

Level of Internet Literacy	Teachers (n=207)	Students (n=1703)	Total (n=1910)
Expert	31	419	450
	(14.98)	(24.60)	(23.56)
Good	75	712	787
	(36.23)	(41.81)	(41.20)
Average	62	315	377
	(29.95)	(18.50)	(19.74)
Below average	20	186	206
	(9.66)	(10.92)	(10.79)

Beginner	19 (9.18)	71 (4.17)	90 (4.71)
Total	**207 (100)**	**1703 (100)**	**1910 (100)**
χ^2 =31.03 *df* = 4 *p*< .001 V=.13			

Note. Numbers mentioned in parentheses are percentages.

Table 5.3 shows that 41.20% of the respondents had good Internet literacy, followed by expert (23.56%) and average (19.74%) levels. Among teachers, 36.23% reported good Internet literacy, whereas 41.81% of students did. The Chi-square test revealed a statistically significant association between respondent category and Internet literacy level (χ^2 = 31.03, df = 4, p < .001). However, the Cramer's V value (0.13) indicates a weak association. Overall, students exhibited slightly higher Internet literacy than teachers.

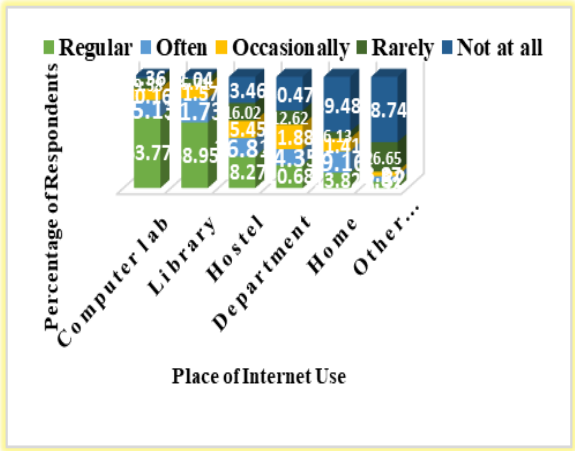

Figure 5.1 : *Location and Frequency of Use of the Internet*

Figure 5.1 illustrates the location and frequency of Internet use among the respondents. The computer laboratory (63.77%) was the most preferred location for regular Internet use, followed by the library (58.95%). In contrast, Internet use at home and other libraries was comparatively low, with 49.48% and 58.74% of the respondents, respectively, reporting that they did not use the Internet at these locations. Overall, the findings indicate that respondents primarily accessed the Internet through institutional facilities, particularly the computer laboratory and library, rather than from home or other libraries.

Table 5.4: Duration of Internet Usage

Duration of Internet Usage	Teachers (n=207)	Students (n=1703)	Total (n=1910)
Less than 1 year	0	52 (3.05)	52 (2.72)
Between 1 to 2 years	16 (7.73)	225 (13.21)	241 (12.62)
Between 2 to 3 years	22 (10.63)	387 (22.72)	409 (21.41)
Between 3 to 4 years	73 (35.27)	423 (24.84)	496 (25.97)
Above 5 years	96 (46.38)	616 (36.17)	712 (37.28)
Total	**207 (100)**	**1703 (100)**	**1910 (100)**
χ^2 =36.21 *df*= 4 *p* < .001 V=.14			

Note. Numbers mentioned in parentheses are percentages.

Table 5.4 presents the duration of Internet usage among the respondents. The highest proportion of respondents (37.28%) had been using the Internet for more than five years, followed by 25.97% who had used it for 3–4 years. Among teachers, 46.38% reported Internet usage of more than five years, whereas 36.17% of students had a similar experience. The Chi-square test indicated a statistically significant association between respondent category and duration of Internet usage (χ^2 = 36.21, df = 4, p < .001). However, the Cramer's V value (0.14) suggests a weak association.

Table 5.5: Adequacy of Infrastructure Facilities to Access E-Resources

Adequacy for Accessing E-resources	Teachers (n=207)	Students (n=1703)	Total (n=1910)
To a great extent	129 (62.32)	954 (56.02)	1083 (56.70)
To optimum extent	41 (19.81)	418 (24.54)	459 (24.03)
To little extent	34 (16.43)	270 (15.85)	304 (15.92)
Not at all adequate	3 (1.45)	61 (3.58)	64 (3.35)
Total	**207 (100)**	**1703 (100)**	**1910 (100)**
χ^2 =5.56 *df*=3 *p* =.14			

Note. Numbers mentioned in parentheses are percentages.

Table 5.5 shows that 56.70% of the respondents considered the infrastructure facilities for accessing e-resources to be adequate to a great extent, while 24.03% rated them as adequate to an optimum extent. Only 3.35% felt that the facilities were not at all adequate. The Chi-square test ($\chi^2 = 5.56$, df = 3, p = .14) indicates that there is no statistically significant difference between teachers and students regarding their perception of the adequacy of infrastructure facilities for accessing e-resources.

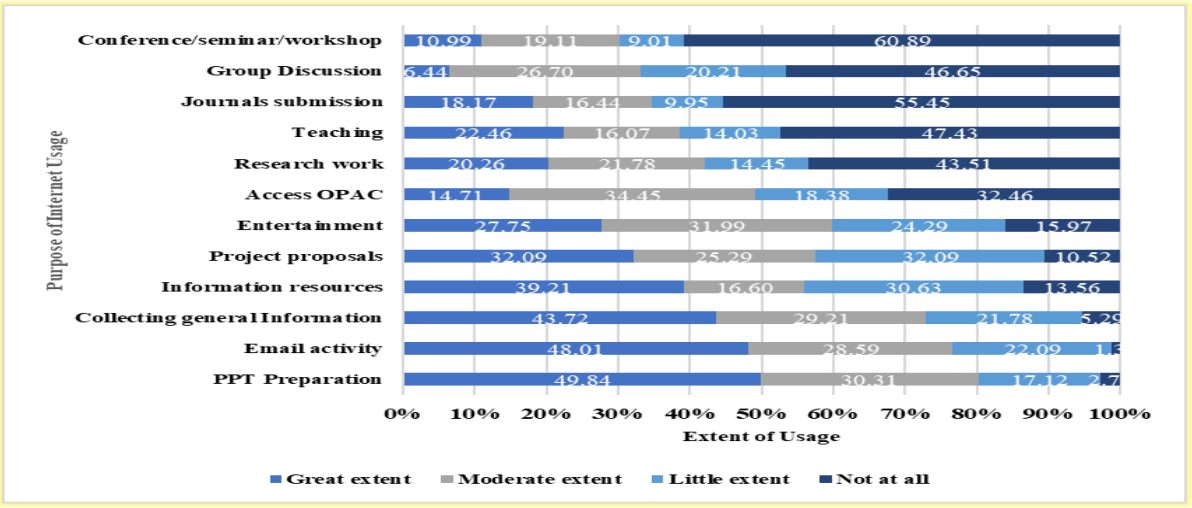

Figure 5.2:*Purpose of Internet Use*

Figure 5.2 illustrates the purpose of Internet use among the respondents. The Internet was used to a great extent for PPT preparation (49.84%), email activity (48.01%), collecting general information (43.72%), and accessing information resources (39.21%). It was also used considerably for project proposals (32.09%) and entertainment (27.75%). In contrast, Internet use for conference/seminar/workshop participation, journal submission, teaching, research work, group discussions, and OPAC access was comparatively lower, with a large proportion of respondents reporting no use for these purposes. Overall, the findings indicate that the Internet was primarily utilized for academic learning and communication rather than research-oriented activities.

Table 5.6: Use of Search Engine

Search Engine	Very High	High	Moderate	Low	Never	Weighted Mean Score	Rank
Google	1378	259	189	76	8	4.53	1
Microsoft Bing	1218	308	237	94	53	4.33	2
Yahoo	1017	281	453	116	43	4.11	3
Baidu	612	278	178	344	498	3.08	4
Infoseek	284	192	381	327	726	2.47	5
Altavista	218	327	114	562	689	2.38	6
Open Text	103	137	216	428	1026	1.88	7
Internet Archive	93	107	215	321	1174	1.76	8
					Mean WMS	**3.07**	
					SD	**1.05**	

Note. Numbers mentioned in parentheses are percentages. Weighted Mean Score (WMS) was calculated using the following weights: Very High=5, High=4, Moderate=3, Low=2, Never=1.

Table 5.6 presents the respondents' use of search engines. Google was the most preferred search engine with the highest Weighted Mean Score (WMS = 4.53), followed by Microsoft Bing (WMS = 4.33) and Yahoo (WMS = 4.11). In contrast, Internet Archive (WMS = 1.76) and Open Text (WMS = 1.88) were the least used search platforms. The overall Mean WMS of 3.07 (SD = 1.05) indicates a moderate level of search engine usage, with Google emerging as the dominant choice for accessing electronic information resources.

6. Findings of the Study

The major findings of the study are as follows:

1. The majority of the respondents possessed good computer literacy (39.25%), with students demonstrating slightly higher computer literacy than teachers.
2. Internet usage was very high (93.95%) among the respondents. All teachers(100%) and a large majority of students (93.26%) reported using the Internet for academic activities.
3. Most respondents exhibited good Internet literacy (41.20%), indicating adequate skills to access and utilize electronic information resources effectively.
4. The computer laboratory and library were the primary locations for Internet access, highlighting the importance of institutional ICT infrastructure in supporting academic information needs.
5. More than one-third of the respondents (37.28%) had been using the Internet for over five years, reflecting considerable experience in accessing electronic information resources.
6. More than half of the respondents (56.70%) considered the available infrastructure for accessing electronic information resources to be adequate to a great extent, indicating satisfactory institutional support.
7. The Internet was used predominantly for PowerPoint preparation, e-mail communication, collecting general information, and accessing academic information resources, while comparatively fewer respondents used it for research-oriented activities such as journal submission and scholarly communication.
8. Google emerged as the most preferred search engine for retrieving electronic information resources, followed by Microsoft Bing and Yahoo.
9. Significant differences were observed between teachersand students with respect to computer literacy, Internet usage, Internet literacy, and duration of Internet use, whereas no significant difference was found regarding perceptions of the adequacy of infrastructure facilities.

7. Conclusion

The study concludes that electronic information resources have become an indispensable part of teaching, learning, and research among teachersand students in horticultural colleges in Karnataka. The findings reveal that the majority of respondents possess good computer and Internet literacy and make extensive use of the Internet for accessing electronic information resources. Institutional facilities, particularly computer laboratories and libraries, provide substantial support for accessing digital information, while Google remains the most preferred search engine for information retrieval. The Internet is predominantly used for academic purposes, including presentation preparation, e-mail communication, information gathering, and access to learning resources. Although significant differences exist between teachersand students in terms of computer literacy, Internet literacy, Internet usage, and duration of Internet use, both groups perceived the available infrastructure as generally adequate for accessing electronic resources. Overall, the study demonstrates that horticultural colleges have established a supportive environment for the effective utilization of electronic information resources. Nevertheless, continuous enhancement of digital infrastructure, expansion of access to scholarly electronic resources, and regular information literacy and digital skills training programmes are essential to further strengthen the effective use of electronic information resources in teaching, learning, and research.

References

1) Ahmadianyazdi, F., & Chandrashekara, M. (2019). Use of electronic information resources and services by the research scholars in the University of Mysore. *Journal of Indian Library Association*, *55*(4), 67–75 .https://www.ilaindia.net/jila/index.php/jila/article/download/332/172

2) Chandrashekar, K. L., & Dharani Kumar, P. (2021). Knowledge and use of electronic information resources by postgraduate engineering students of Karnataka State: A study. *Library Philosophy and Practice*, 6253. https://digitalcommons.unl.edu/libphilprac/6253/
3) Kiran Kumar, G., & Kumbar, M. (2012). Use and search pattern of electronic resources in five autonomous engineering colleges (Bengaluru). Trends in Information Management, 8(2), 90–99. https://lis.uok.edu.in/Files/9ebfb2f2-5003-47a4-9dfe d3cdcc6a2020/Journal/232c9ac0-e58d-44cf-bad8-f045e5364070.pdf
4) Madhusudhan, M. (2010). Use of electronic resources by research scholars of Kurukshetra University. *The Electronic Library*, *28*(4), 492–506. https://doi.org/10.1108/02640471011033684
5) Manhas, R., Asha, Kaur, G., & Rani, S. (2015). Use of the Internet and electronic information resources by teachers and students at physiotherapy colleges in Punjab. *American Journal of Educational Research*, *3*(7), 886–892. https://pubs.sciepub.com/education/3/7/12/
6) Naik, L., Narasappa, K. C., & Naik, R. G. S. (2019). Use of electronic information resources at college libraries in Bangalore, India: A study of college learners. *Library Philosophy and Practice*, 2838. https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=6275&context=libphilprac
7) Ranjan, S., & Pradhan, S. (2019). Use of electronic information resources by faculty members in agricultural universities. *DESIDOC Journal of Library & Information Technology*, *39*(3), 146–152. https://publications.drdo.gov.in/ojs/index.php/djlit/article/view/19515
8) Surendra C.S., & Kumbar, M. (2025). Use of electronic information resources by the science teachers of first grade colleges in Mysuru region: A study. International Journal of Research in Library Science (IJRLS), 11(4), 150–168. https://doi.org/10.26761/IJRLS.11.4.2025.1984