



Digital literacy skills among the students of the college of dental sciences and research centre, Bopal, Ghuma: a case study

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Abstract- The significance and efficacy of digital literacy among students at the College of Dental Sciences and Research Center, Bopal, are highlighted in this research. Students today must learn digital literacy abilities. The questionnaire was designed using Google Forms. A structured questionnaire in online (Google form) was distributed among 100 students, out of which 31 questionnaires were answered. The results of the study show that the majority of the students in dental college, Bopal were female and belonged to the age group of 18 to 21 years. The analysis of the study shows that a majority of 64.5% of the respondents are familiar with the concept of internet literacy. The 50% respondents are aware of ICT. In the current digital environment, it is found that the maximum number of respondents prefer internet websites to search for information as it is an easy, flexible and affordable way to find information. Most respondents prefer the Google search engine over other search engines. When it comes to understanding how well students use digital gadgets such as MS Word, MS Excel, MS PowerPoint, Moodle, Facebook, Skype, YouTube, and Google.

Keywords- Digital literacy, Dental sciences and research centre, ICT Skills, Online learning.

I. Introduction

To improve digital literacy abilities, experiment with digital tools, remain up to date on technical changes, focus on relevant platforms, and participate in lifelong learning through courses. To truly comprehend "What is digital literacy," consider how much you rely on technology in your daily life. In 2025, it is anticipated that 5.56 billion people will utilize the internet. So, whether you're managing your money, communicating with friends, or simply reading the news, digital tools are an essential aspect of modern living. Digital literacy has become vital for critical and effective functioning in the digital world, and it is now more important than ever to prioritize digital skill teaching and learning for people of all ages. Mastering these lifelong skills will allow you to navigate digital platforms responsibly, apply your abilities across several media and applications, and effectively manage your digital footprint.

Digital literacy is a dynamic and changing notion that reflects the continual improvements in technology. It is an essential component of personal empowerment, education, and professional development in the twenty-first century. Individuals who are digitally literate may use technology as both consumers and knowledgeable contributors, cultivating a comprehensive grasp of the digital landscape and its impact on various facets of personal, academic, and professional life.

Digital literacy is important in today's society because it allows people to efficiently access, understand, and interact with digital technologies. It's crucial for a few reasons.



First, digital literacy improves academic outcomes by facilitating efficient research, information appraisal, and critical thinking. Professionally, it is critical for career preparation, as companies increasingly rely on digital tools.

Finally, there is no doubting the value of digital literacy as a foundation for personal empowerment, equipping individuals with the skills required to live in the digital age, make informed decisions, and constructively contribute to the growing digital world.

As technology becomes more integrated into everyday life, the importance of digital literacy grows. The following are three reasons why students should develop digital literacy abilities. 1. Encourages academic advancement. 2. Improves internet safety. 3. Helps children realize the need of digital responsibility.

College of dental sciences and research centre, Bopal, Ghuma

College of Dental Sciences & Research Centre was established in the year 2006 under Maa Kamala Charitable Trust to provide value based education with excellent infrastructure for professional courses in Dentistry (B.D.S & M.D.S). It has intake capacity of 100 undergraduate students (B.D.S.) and 24 postgraduate students (M.D.S.) in 8 specialities. To familiarise students with their work environment and enable development of practical skills, the college is equipped with the modern infrastructure that promote student learning and welfare. They are committed to the policy of regularly upgrading equipment and other facilities keeping the changing needs of time in mind. Their motto is to provide high quality of dental education to our students keeping in mind the true values of life and to provide quality treatment with utmost care to all the sections of society.

II. Review of Literature

Literature review is a technique that provides an overview of previous studies in a particular topic of study. For example, Meghabat Singh (2022) analyzed in his study that most of the respondents were familiar with the concept of digital literacy. 42.38% of the respondents use internet websites because it is an easy and quick source to find the required information. Most of the 62.88% of the respondents were using Google search engine because it provides the easiest and most relevant information compared to other search engines. Bhaiyashree Boro, R. Laltlanzova and F. Chanchinmavia (2023) have analyzed in their study that most of the respondents are aware of digital literacy. The most popular scholarly platform for information exchange is Google Scholar, which is mostly used for compiling notes.

Less than half of the students use the internet for marketing, while most of them use it for entertainment. They also have knowledge of how to use digital devices, web-based applications and MS Office applications, as well as academic and professional networking websites, and the problems they face while using the internet. Jijo Varghese and Anand Kumar Arya (2024) found in their study that prospective teachers have an average level of digital literacy skills; however, the questionnaire found that prospective teachers have an average level of opinion about the curriculum delivery mode to enhance digital competence. Sanjana Thapa and Sadhujan Bankira (2025) analyzed in their study that most students have a moderate level of digital literacy, with



very few students showing high or low levels. C. Melvin Jebaraj (2026) found in this study that this study highlights an important paradox in the digital landscape of higher education in Tamil Nadu: while access to digital devices and internet connectivity is becoming increasingly widespread among college students due to the proliferation of smartphones, cheap data plans, and government digital inclusion initiatives, the development of higher-level digital literacy skills remains significantly underdeveloped. Many students demonstrate basic functional abilities, such as using social media, browsing the web, or sending email, but struggle with the more sophisticated abilities required for academic success and professional readiness. These include critical evaluation of online information, effective use of digital productivity tools (e.g., spreadsheets, presentation software, collaborative platforms), data interpretation, digital content creation, cybersecurity awareness, and ethical online behavior.

Objectives of the Study are :

1. To know the digital literacy skills of college UG students
2. To determine familiarity with digital gadgets and web-based software
3. Discover the most common issues respondents encounter when using digital resources.
4. To determine the different search engines preferred by respondents.
5. Analyzing the most efficient resources used by respondents to find information on any topic.
6. Analyze respondents' digital literacy skills for accessing, searching, evaluating, and using information.

III. Methodology

The purpose of this study is to assess digital literacy skills among students at a dental college in Bopal. A purposeful online survey was utilized to gather information from respondents at a dental college in Bopal. The study utilized a survey-based methodology. A questionnaire was created using Google Forms and submitted to the students for feedback. The Google Form was sent to respondents via WhatsApp. A total of 31 students responded to the survey questions and submitted the required information. The information gathered from respondents was presented in the form of tables, charts, and explanations.

Data Analysis

Table 1 Gender

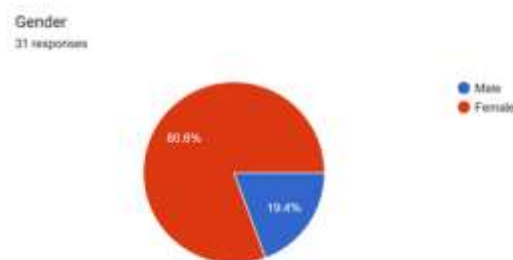


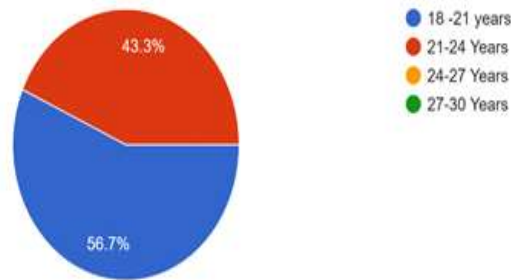


Table 1 and Figure 1 show the gender wise distribution of the respondents. Out of the total 31 respondents, the majority, 25 (80.6%) respondents were female, while the remaining 6 (19.4%) respondents were male.

Table 2 Age group wise distribution

Age group-wise distribution of respondents

30 responses

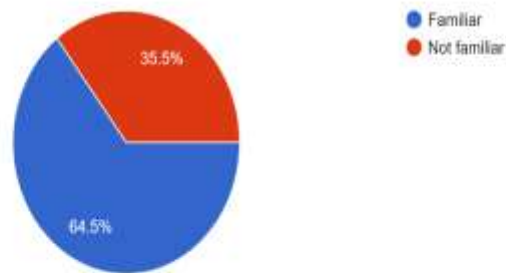


In the distribution of respondents according to age group, the majority of respondents, 17 (56.7%) are from the age group of 18-21 years, followed by 13 (43.3%) respondents from the age group of 21-24 years.

Table 3 Familiarity with the concept of internet literacy

Familiar with the concept of internet literacy?

31 responses

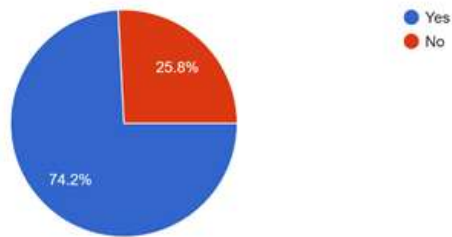


Internet literacy is essential in today's modern world, when everything is technologically advanced, especially for students. Out of a total of 31 respondents, a large number of 20 (64.5%) respondents were familiar with the concept of internet literacy while the remaining 11 (35.5%) respondents were not familiar with the concept of internet literacy at the present time.



Table 4 Library membership

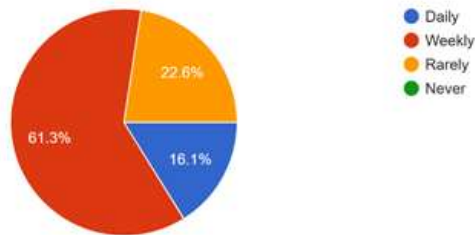
Do you have a library membership?
31 responses



Out of a total of 31 respondents, 23 (74.2%) respondents have library membership, while the remaining 8 (25.8%) respondents do not have library membership.

Table 5 Library visit patterns of college library users

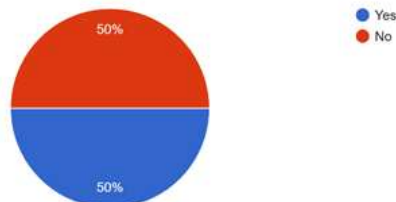
What are the library visit patterns of college library users?
31 responses



Out of a total of 31 respondents, 19 (61.3%) visited the college library weekly, followed by 7 (22.6%) who rarely visited the college library, while the remaining 5 (16.1%) visited the library daily.

Table 6: Awareness about ICT and the Internet

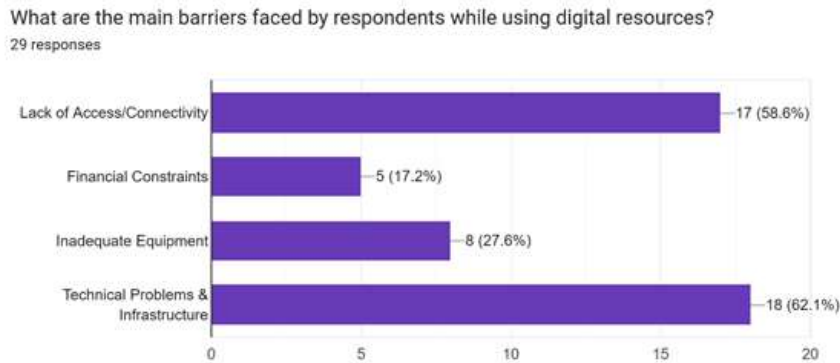
Is there awareness about ICT and the Internet?
30 responses





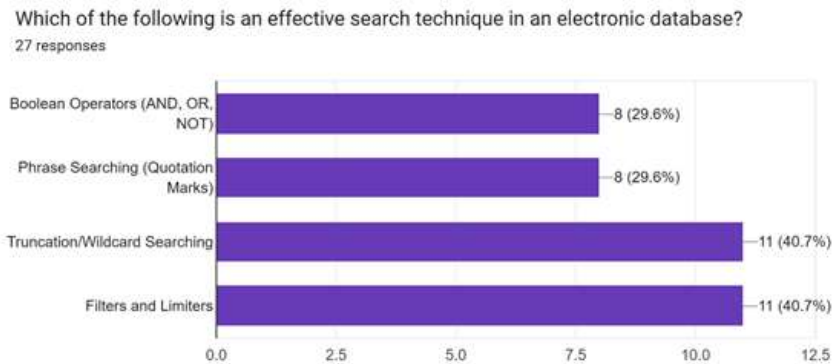
Out of a total of 30 respondents, 15 (50%) were aware of ICT and the Internet and 15 (50%) were not aware of ICT and the Internet.

Table 7 Main barriers faced by respondents while using digital resources



Majority of the respondents under the study i.e., 18 (62.1%) believe that technical problems and infrastructure are the main barriers for them, followed by 17 (58.6%) respondents believe that lack of access/connectivity is the main barrier for them, followed by 8 (27.6%) respondents believe that insufficient resources are the main barrier for them, and the remaining 5 (17.2%) respondents believe that financial constraints are the main barrier for them.

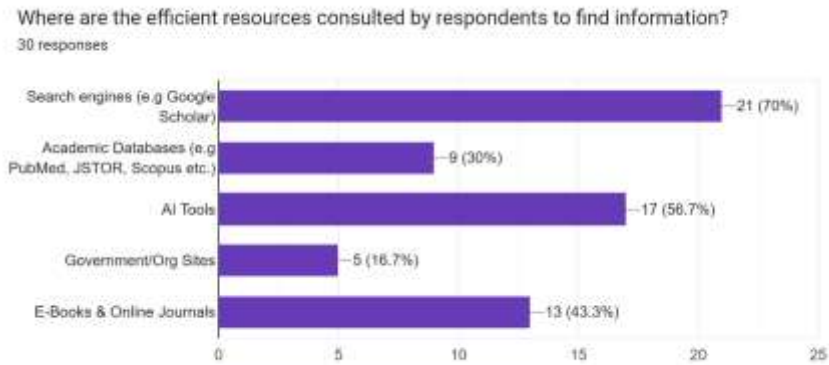
Table 8: Effective search technique in an electronic database



Most 11 (40.7%) respondents use truncation/wildcard search to find their required information, followed by 11 (40.7%) respondents use filters and limiters to find their required information, while 8 (29.6%) respondents use phrase search (quotation marks) to find their required information and the remaining 8 (29.6%) respondents use Boolean operators (and, or, not) to find their required information.

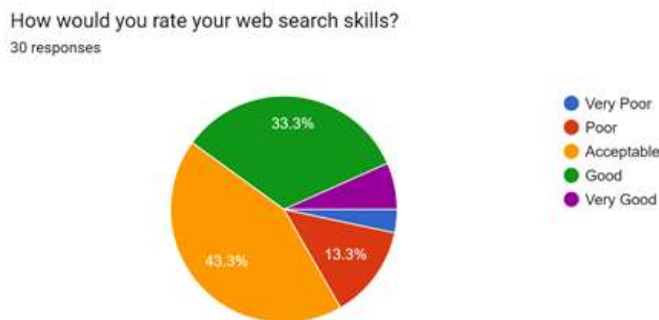


Table 9 Efficient resources consulted by respondents to find information



Most of the 21 (70%) respondents were using search engines (e.g. Google Scholar) to search for information, followed by 17 (56.7%) respondents using AI tools to search for information, while 13 (43.3%) and 9 (30%) respondents were using e-books and online journals and academic databases (e.g. PubMed, JSTOR, Scopus etc.) to search for information and the remaining 5 (16.7%) respondents were using government/institution sites to search for information.

Table 10 Web Search Skills

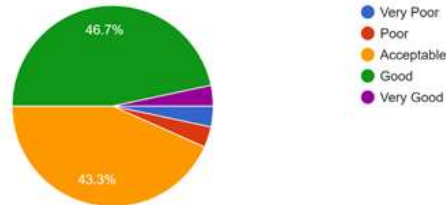


Most of the 13 (43.3%) respondents had acceptable web search skills, followed by 10 (33.3%) respondents with good web search skills, 4 (13.3%) respondents with poor web search skills, 2 (6.7%) respondents with very good web search skills and the remaining 1 (3.3%) respondent with very poor web search skills.



Table 11 Computer literacy skills

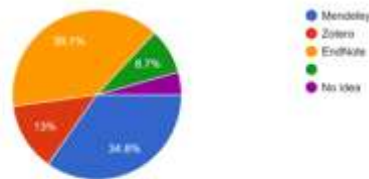
How would you rate your computer literacy skills (the ability to use the computer)?
30 responses



Most of the 14 (46.7%) respondents had good computer literacy skills, followed by 13 (43.3%) respondents had acceptable computer literacy skills while 1 (3.3%) and 1 (3.3%) respondents had poor and very poor computer literacy skills, the remaining 1 (3.3%) respondents had very good computer literacy skills.

Table 12 Reference management software preferred by respondents

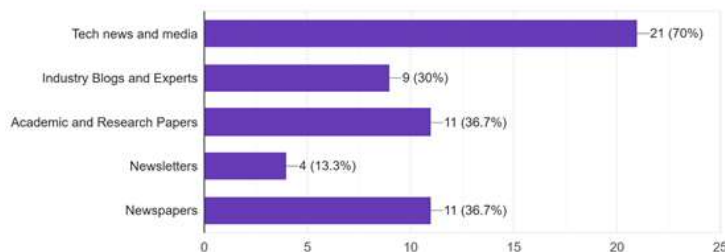
Where is the reference management software preferred by respondents?
23 responses



In today's academic era, it is an important task for users to acknowledge or cite all research works in their respective studies. Proper reference management helps in avoiding plagiarism. Most of the 9 (39.1%) respondents use EndNote software, while 8 (34.8%), 3 (13%) respondents use Mendeley, Zotero and the remaining 1 (4.3%) respondents had no idea.

Table 13 New digital technologies

How do you find out about new digital technologies? Please tick (✓) all that apply
30 responses





Most 21 (70%) respondents were using tech news and media to find new digital technologies, followed by 11 (36.7%) and 11 (36.7%) respondents were using academic and research papers and newspapers to find new digital technologies and the remaining 9 (30%) and 4 (13.3%) respondents were using industry blogs and experts and newsletters to find new digital technologies.

Table 14 Proficiency level of Respondents with basic ICT Skills

ICT skills	Very Frequently	Frequently	Occasionally	Rarely	Very Rarely	Never	Total	Mean	SD	Variance
Word processor	5	4	8	6	5	3	31	5.1667	1.72240	2.967
Email	9	15	3	2	2		31	6.2000	5.71839	32.700
World Wide Web	14	7	5	3	1	1	31	5.1667	4.91596	24.167
Graphics software	1	7	9	5	5	4	31	5.1667	2.71416	7.367
Spreadsheet (for data organization)	1	5	13	7	4	1	31	5.1667	4.49073	20.167
Blog	1	4	10	4	10	2	31	5.1667	3.92003	15.367
Wiki	4	8	11	6		2	31	6.2000	3.49285	12.200
Video conferencing	4	6	10	5	4	2	31	5.1667	2.71416	6.167
Computer game	4	10	5	5	3	4	31	5.1667	2.48328	6.167
Electronic dictionary	2	8	12	5	1	3	31	5.1667	4.16733	17.367

Data were collected from respondents on this scale: very often, often, occasionally, rarely, very rarely, never. The majority 8 respondents were occasionally use word processor, followed by 6 Rarely, 5 Very frequently, 5 very rarely, 4 Frequently, 3 Never. In ICT skills 15 respondents were using email Frequently, followed by 9 Very frequently, 3 Occasionally, 2 Rarely, 2 Very rarely. The 14 respondents were using World Wide Web, followed by 7 Frequently, 5 Occasionally, 3 Rarely, 1 Very Rarely,



1 Never. In ICT skill 9 respondents were occasionally use Graphics software, followed by 7 Frequently, 5 Rarely, 5 Very Rarely, 4 Never, 1 Very Frequently. The 13 respondents were using a spreadsheet (for data organization) occasionally, followed by 7 Rarely, 5 Frequently,, 4 Very Rarely, 1 Very Frequently, 1 Never. In ICT skill 10 respondents were used blogs occasionally, followed by 10 Very Rarely, 4 Frequently, 4 Rarely, 2 Never, 1 Very Frequently. The 11 respondents were used Wiki occasionally, followed by 8 Frequently, 6 Rarely, 4 Very Frequently, 2 Never. The 10 respondents were used video conferencing occasionally, 6 Frequently, 5 Rarely, 4 Very Frequently, 4 Very Rarely, 2 Never. The 10 respondents were used computer game frequently, followed by 5 Occasionally, 5 Rarely, 4 Very Frequently, 4 Never, 3 Very Rarely. The 12 respondents were used electronic dictionary occasionally, followed by 8 Frequently, 5 Rarely, 3 Never, 2 Very Frequently, 1 Very Rarely.

Table 15 Proficiency level of Respondents with basic ICT Skills

ICT skills	Very Good	Good	Acceptable	Poor	Very Poor	Do not know	Total	Mean	SD	Variance
Word processing applications(e.g. MS word)	6	11	10	2	1	1	31	5.1667	4.53505	20.567
Spreadsheet applications (e.g.,MS Excel)	6	9	12	3		1	31	6.2000	4.43847	19.700
Database applications (e.g., MS Access)	5	7	13	5		1	31	6.2000	4.38178	19.20
Presentation applications (e.g.,MS PowerPoint)	7	14	9		1		31	7.7500	5.37742	28.917
Communication applications(e.g., Skype)	5	8	9	5	1	3	31	5.1667	2.99444	8.967
Learning management systems(e.g., Moodle)	2	9	7	6	1	6	31	5.1667	3.06050	9.367
Social networking services (e.g.,Facebook)	12	12	3	1	2	1	31	5.1667	5.34478	28.567



Blogs (e.g., Blogger)	4	8	8	7	1	3	31	5.1667	2.92689	8.567
File sharing sites (e.g., Dropbox)	6	8	10	3		4	31	6.2000	2.86356	8.200
Photo sharing sites (e.g., Picasa)	4	12	9	3	1	2	31	5.1667	4.35507	18.967
Video sharing sites (e.g., YouTube)	12	10	7	1	1		31	6.2000	5.06952	25.700
Web search engines (e.g., Google)	18	8	4	1			31	7.7500	7.41058	54.917
Dictionary apps (e.g., Dictionary.com)	8	10	8	5			31	7.7500	2.06155	4.250

Data were collected from respondents on this scale : Very good, Good, Acceptable, Poor, Very poor, Do not know. In Word processing (e.g. MS Word), the majority 11 respondents were rate their skills as good, followed by 10 Acceptable, 6 Very good, 2 Poor, 1 Very poor and 1 Do not know. In spreadsheet applications (e.g. M S Excel) the 12 respondents were rate their skills as Acceptable, followed by 9 Good, 6 Very good, 3 Poor, and 1 Do not know. In Database applications (e.g. MS Access) the 13 respondents were rate their skills as acceptable, followed by 7 Good, 5 Very good, 5 Poor, and 1 Do not know. In Presentation applications (e.g., M S Powerpoint), the 14 respondents were rate their skills as good, followed by 9 Acceptable, 7 Very good, 1 Very poor. In communication applications (e.g., Skype), the 9 respondents were rate their skills as Acceptable, followed by 8 Good, 5 Very good, 5 Poor, 3 Do not know, 1 Very poor. In Learning management systems (e.g. Moodle), the 9 respondents were rate their skills as Good, followed by 7 Acceptable, 6 Poor, 6 Do not know, 2 Very good and 1 Very poor. In Social networking services (e.g., Facebook) the 12 respondents were rate their skills as Very good, followed by 12 Good, 3 Acceptable, 2 Very poor, 1 Poor and 1 Do not know. In Blogs (e.g.Blogger), the 8 respondents were rate their skills as Good, followed by 8 Acceptable, 7 Poor, 4 Very good, 3 Do not know, 1 Very poor. In File sharing sites (e.g., Dropbox), the 10 respondents were rate their skills as Acceptable, followed by 8 Good, 6 Very good, 4 Do not know, 3 Poor. In photo sharing sites (e.g. Picasa), the 12 respondents were rate their skills as Good, followed by 9 Acceptable, 4 Very good, 3 Poor, 2 Do not know, 1 Very poor. In Video sharing sites (e.g., YouTube), the 12 respondents were rate their skills as Very good, followed by 10 Good, 7 Acceptable, 1 Poor, 1 Very poor. In Web search engines (e.g. Google), the 18 respondents were rate their skills as Very good, followed by 8 Good, 4 Acceptable, 1 Poor. In Dictionary apps (e.g., Dictionary.com), the 10 respondents were rate their skills as Good, followed by 8 Very good, 8 Acceptable, 5 Poor.



IV. Conclusion and Discussion

In today's world of rapid technology advancement, digital literacy has emerged as the cornerstone of education. In the contemporary digital age, choosing correct and trustworthy information has become difficult due to the proliferation of information. The impending information explosion has the potential to either help or hurt one's future, thus one must be aware of it and completely prepared for it. The demand for citizens to possess digital literacy skills has also expanded due to the growth of information resources.

The present study highlights that the majority of the respondents at the College of dental sciences and research centre, Bopal were female (80.6%) and between the age group 18 – 21 years (56.7%). The majority of the respondents were familiar with the concept of internet literacy. Most respondents (62.1%) encountered technical and infrastructure challenges while using digital resources. More than 70% of respondents used Google Scholar to seek for information. The majority of responders (43.3%) have acceptable web search skills. 46.7% of respondents demonstrated good computer literacy. A maximum of 39.1% respondents use the Endnote software to manage the references. It is a comprehensive reference management software designed to help researchers efficiently organize citations, generate bibliographies, and integrate with word processors for seamless in-text citation. 70% of respondents discovered new digital technologies through tech news and media. They understand how to use digital devices, web-based applications, Microsoft Office applications, and educational and professional networking websites.

Suggestions

Based on the findings, the following recommendations are made to the respondents of the college of dental sciences and research centre in Bopal to assist them enhance their digital literacy skills:

1. College of dental sciences and research centre, Bopal should hold awareness events and workshops for students on a regular basis.
2. The college should provide internet facilities at a good speed to everyone.
3. The College should increase online resources for students to read anywhere.
4. The campus facility must be upgraded time to time.

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