Digital Literacy Skills among the Postgraduate (P.G.) Students : a study of selected Central Universities of North East India

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Abstract

The paper examines the Digital Literacy Skill (DLS) of Postgraduate (P.G.) students in the School of Life Science of selected Northeast Central Universities. The study revealed how the students developed their digital literacy skills, identified familiarity with web-based applications and digital devices, scrutinised awareness of academic/professional networking sites, and found the main challenges encountered by respondents when using digital resources. The study took a qualitative approach to identify the research problems. The respondents were selected using a purposive sampling technique. A structured questionnaire in print and online (Google form) was distributed among 240 PG students in 15 departments, out of which 198 questionnaires were answered. The data gathered were further examined and analysed using SPSS, MS Excel, and Google Form application software. The study highlights the necessity for students to enhance their digital literacy skills in both academic and everyday life. While students demonstrate competence in accessing digital devices, web-based applications, MS Office software, and academic and professional networking platforms, they face challenges when using the internet. To address this, organisations and institutions are encouraged to develop user education and awareness programmes. These programmes aim to mitigate issues like encountering unauthentic information, ultimately fostering a more robust digital literacy environment.

Keywords: Digital literacy, Digital devices, Information communication technology, Life science

1. Introduction

Paul Glister originated the idea of digital literacy, as the word is now often used, in his book (Glister, 1997). Glister did not offer any lists of the abilities, knowledge, or views that represent being digitally well-educated. He referred to it simply as "literacy in the digital age" and stated it rather broadly by way of the capacity to comprehend and then use data gathered from a variety of information formats. The idea of "digital literacy" obviously covers a wide range, from specialized knowledge and abilities to more wide understanding and viewpoints. The way

individuals interact has been revolutionised by innovation, contact, and effort, but there have been additional outcomes as well.

Additionally, technology has impacted how students learn. Today, literacy encompasses more than just teaching students to read and write. It must foster innovative teaching and learning to foster analytical reasoning, out-learning, and efficient communication.

1.1 *Digital literacy*

The term "digital literacy" came into view in the 1990s in the age of the Internet revolution. Earlier, "computer literacy" was a more popular topic of concern. But in 1997, The phrase "digital literacy" was initially used by historian and educator Paul Gilster, who argued that it comprised more than just technological proficiency. He stated that the goal is to "master ideas, not [computer] keystrokes" (Gilster, 1997).He defined "digital literacy" as "the ability to recognise and apply data in various forms via an extensive variety of resources anytime it comes in over computers." According to him, digital literacy includes the capacity to assess information vitally and come to conclusions regarding how to best utilize that information in various circumstances.

2. Literature review

The present digital world demands that every student be able to keep up with the quick development of digital technologies. It was found that knowledge about technological literacy, information literacy, liberty of expression, and internet literacy can help students' MIL through the introduction of abilities of place, assessment, development, and comprehension of information (Gupta, Sharma, & Thakur, 2023). To progress their technical skills and keep up with the modern electronic age, the ideas underlined the significance of encouraging and motivating students to continue undergoing courses, tutorials, etc (Kulkarni & Ramesha, 2021). To remain aware of activities like knowing when, why, and how to use various tools in acquiring information effectively, it becomes crucial for learners to be information skilled. Based on now on, one can develop their writing and speaking abilities in the areas they are interested in by establishing particular patterns (Verma & Sukla, 2021). They aimed to investigate if hate speech represented a danger to Nigeria's sense of unity and nationhood. Its purpose is to examine the public's comprehension of what makes up hate and the role of MIL in encouraging integration and unity among nations in Nigeria (Igwebuike, 2021). The goal of media and information literacy (MIL) is to empower people to critically evaluate the material they have heard, read, and learned. (Logeswari, Ramaiah, Shimray, & Chennupati, 2021). The development in digital literacy predictors demonstrates how and why the student's growth in digital literacy skills, including technical skills, inventiveness, perfectly rational evaluation, and analysis, and the tendency to ascertain and select out relevant data, had also enhanced (Lestari, Setiawan, & Muqoda, 2020). Higher education institutions could perhaps embrace an adequate comprehensive model to involve all students and educators in digital literacy to gear them to adapt to the globalised world to improve the chances of successful delivery of the skill; alternatively, this same result would then cast doubt on the validity of universities and colleges (Ouahidi, 2020).The importance of using digital tools and a variety of participatory learning programmes in instructional methods to enhance educational productivity and this relevance was evaluated from the standpoint of several components of the instructional experience (Zahorec, Haskova, & Munk, 2019). Digital literacy and

competencies are increasingly becoming necessary for any firm wishing to compete in a present challenging commercial environment. It is necessary to understand the distinctions between digital competence and other concepts that resemble or overlap with it (Phuapan, Viriyavejakul, & Pimdee, 2016).

2.1 *Research gap*

The above literature study gives a clear insight that numerous surveys have been conducted on Digital Literacy. However, there is not a single study on publication related to Digital Literacy among students in the School of Life Science of selected Northeast Central Universities. The study will enable the scholars to find out the student's digital literacy skills, identify familiarity with web-based applications and digital devices, scrutinise awareness of academic/ professional networking sites, and find the main challenges encountered by respondents when using digital resources. So this study is an attempt to fulfill this research gap and examines the Digital Literacy Skill (DLS) of Postgraduate (P.G.) students in the School of Life Science of selected Northeast Central Universities.

3. Objectives of the study

i. To know the digital literacy skills of PG students from the selected Central Universities

ii. To identify familiarity with digital devices and web-based applications

iii. Analyse the awareness of academic/institutional networking sites

iv. Find out the major problems faced by the respondents while using digital resources.

4. Methodology

The study took a qualitative approach to identify the research problems. The responder was chosen using a purposive sampling technique. At present, there are a total of 48 central universities in India. Among the 48 central universities, there are 7 in North East India. The paper aims to analyse the digital literacy skills among the PG students at the School of Life Science of selected Northeast Central Universities i.e., Assam University, North Eastern Hill University (NEHU), Mizoram University (MZU), and Rajiv Gandhi University (RGU). A structured questionnaire in print and online (Google form) was distributed among 240 PG students to 4 Central Universities which consist of 15 departments, out of which 198 (82.5%) questionnaires have been responded to. The collected data were further scrutinised and analysed using SPSS, and MS Excel. The study is limited to 240 PG students from selected Central Universities of North East India, Schools of Life Sciences. These include North Eastern Hill University (NEHU) (66th NIRF 2022), Mizoram University (MZU) (78th NIRF 2022), followed by Assam University (105th NIRF 2022), and Rajiv Gandhi University (RGU) (183rd NIRF 2022).

5. Analysis of the study

5.1 *Survey sample distribution*

Out of 240 questionnaires circulated, a total of 198 (82.5%) responses were received. Each department received 16 questionnaires; Assam University and NEHU each had five departments, with 72 (90%) and 54 (67.5%) responses, respectively. Mizoram University (MZU) had three departments, with 44 (91.6%) responses, and Rajiv Gandhi University (RGU) has only two departments, with 28 (87.5%) responses.

5.2 *Digital literacy skills obtained by respondents*

Table 1: Digital literacy skills acquired by respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Training Programmes	36	18.2	18.2	18.2
	Computer Assisted Instruction	17	8.6	8.6	26.8
	Library Orientation/ Library User Education	98	49.5	49.5	76.3
	Friends	47	23.7	23.7	100.0
	Total	198	100.0	100.0	

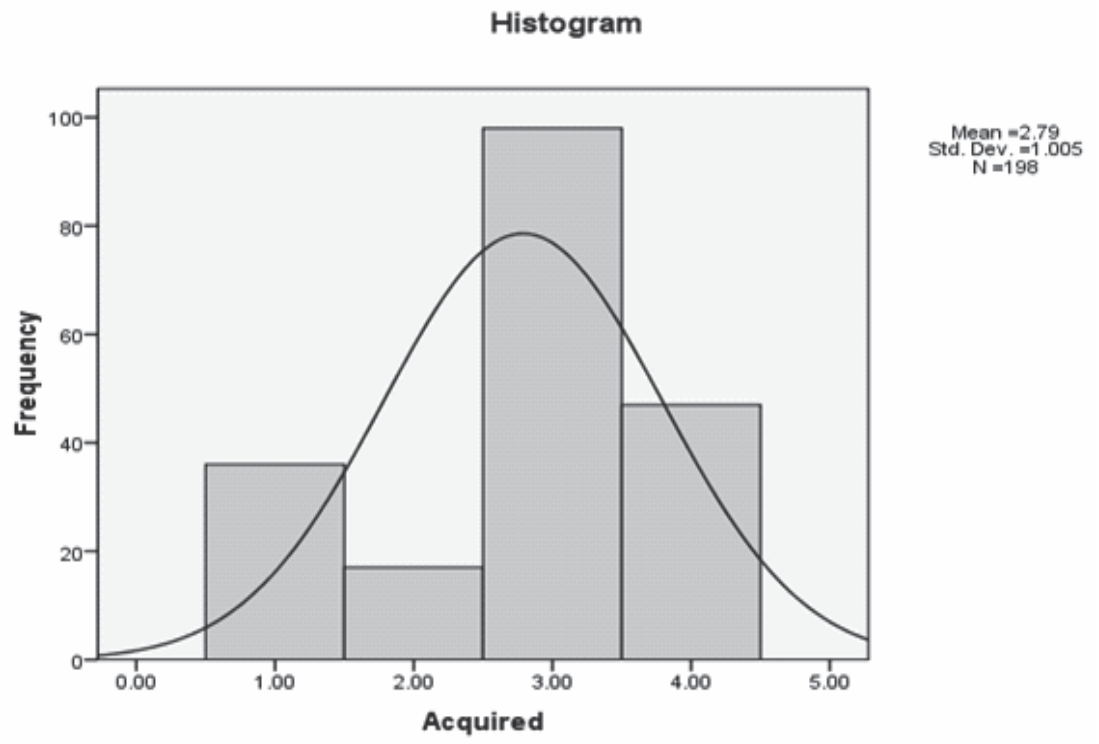

Figure 1: Digital literacy skills acquired by respondents

Table 1 and figure 1 depict the digital literacy skills obtained by the students i.e., the maximum respondents 98 (49.5%) acquired their skills from library orientation/library user education, while half of the respondents 47 (23.7%) acquired them from friends, 36 (18.2%) have acquired from training programs and only 17 (8.6%) have acquired from computer-assisted instruction. The study reveals that library orientation and library user education were the primary ways in which the students learned to be digitally literate.

5.3 *Digital literacy skills known*

Table 2: Digital literacy skills are known by the students

Sl. No.	Digital literacy skills known	No. of responses	%
1	Participation in creating and sharing knowledge through social networks	95	9.2
2	Using use ICT to retrieve and process information	96	9.3
3	Proficient in effectively creating and communicating electronic data	108	10.6
4	To know and use electronic resources for academic work	103	10.1
5	Ability to convert print materials to digital form	120	11.7
6	Ability to download/upload text, graphics, audio, and video	174	16.9
7	Ability to use computers and the internet securely and safely	146	14.2
8	Ability to analyse digital data from various sources	98	9.6
9	Ability to understand and use digital tools for educational purposes	86	8.4
Total		**1026**	**100%**

Table 2 shows the digital literacy skills known by the respondents. The maximum of the students responded i.e., 174 (16.9%) can download/upload text, graphics, audio, and video, while 146 (14.2%) know how to use computers and the internet securely and safely. 120 (11.7%) respondents admit that they can convert print materials into digital form. Other 108 (10.6%) respondents are proficient in successfully creating and communicating electronic data. Rest 103 (10.1%) can know and use electronic resources for academic work. 98 (9.6%) respondents can analyse digital data from various sources. 96 (9.3%) use ICT to retrieve and process information. 95 (9.2%) have participated in creating and sharing knowledge through social networks and only 86 (8.4%) can understand and use digital tools for educational purposes. The study reveals that while most students can upload and download text, video, music, and images, relatively few can comprehend and apply digital tools for academic work.

5.4 *Familiarity with digital devices*

Table 3: Familiarity with digital devices

Sl. No.	Familiarity with digital devices	No. of responses	%
1	Laptop	154	24.4
2	Desktop	84	13.3
3	Kindle	27	4.2
4	Notebook	87	13.9
5	Smartphones	197	31.2
6	Digital Camera	62	9.9
7	iPads	19	3.1
Total		**630**	**100%**

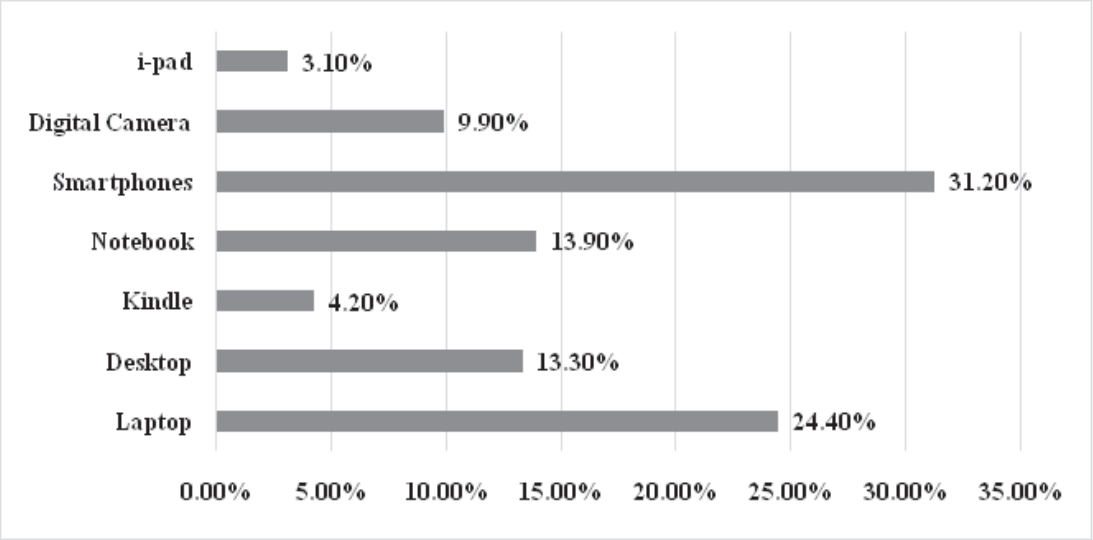

Figure 2: Familiarity with digital devices

Table 3 and figure 2 depict the familiarity of respondents with digital devices. The majority of users, 197 (31.2%) respondents, are familiar with smartphones, while 154 (24.4%) are familiar with laptops, 87 (13.9%) are familiar with notebooks, 84 (13.3%) are familiar with desktops, 62 (9.9%) are familiar with digital cameras, 27 (4.2%) are familiar with Kindles, and only 19 (3.1%) are familiar with iPads. The survey shows that most students are familiar with smartphones, whereas only a small percentage are familiar with iPads.

5.5 *Familiarity with the web-based applications*

Table 4: Familiarity with the web-based applications

Sl. No.	Familiarity with web-based applications	No. of responses	%
1	Email	116	10.4
2	Facebook	183	16.5
3	Twitter	54	4.9
4	YouTube	175	15.9
5	Web blogs	66	5.9
6	WhatsApp	198	17.9
7	Instagram	185	16.8
8	Google-meet	129	11.7
Total		**1106**	**100**

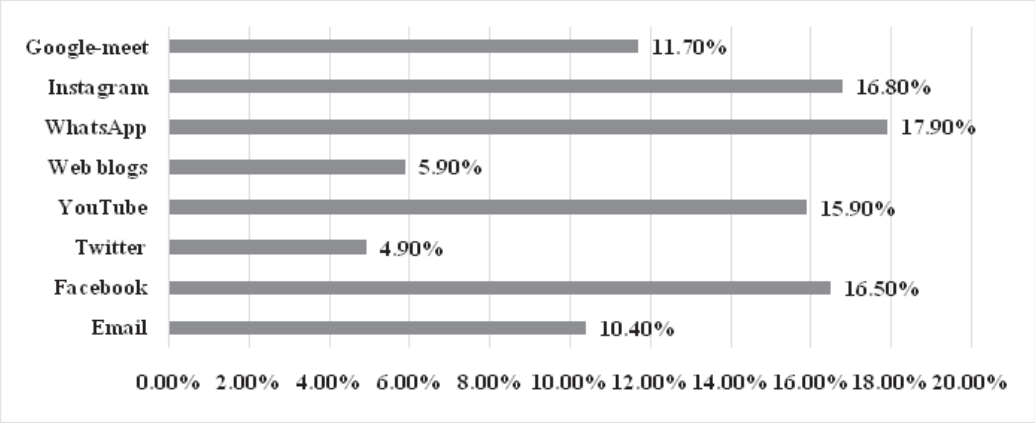

Figure 3: Familiarity with the web-based applications

Table 4 and figure 3 show the familiarity with the web-based applications of the students. A maximum number of students are more familiar with WhatsApp i.e., 198 (17.9%), 185 (16.8%) are familiar with Instagram, 183 (16.5%) are familiar with Facebook, 175 (15.9%) are familiar with YouTube, 129 (11.7%) are familiar with Google-meet, 116 (10.4%) are familiar with E-mail, 66 (5.9%) are familiar with Web blogs and 54 (4.9%) are familiar with Twitter. The analysis reveals that while the maximum number of students are familiar with WhatsApp, very few people are familiar with Twitter.

5.6 *Problems encountered while using the Internet*

Table 5: Problems encountered while using the internet

Sl. No.	Problems	No. of responses	%
1	Irregular power supply	97	24.1
2	Poor internet speed	160	39.9
3	Lack of skills in authentic information	56	13.9
4	High cost of bill	89	22.1
Total		**402**	**100**

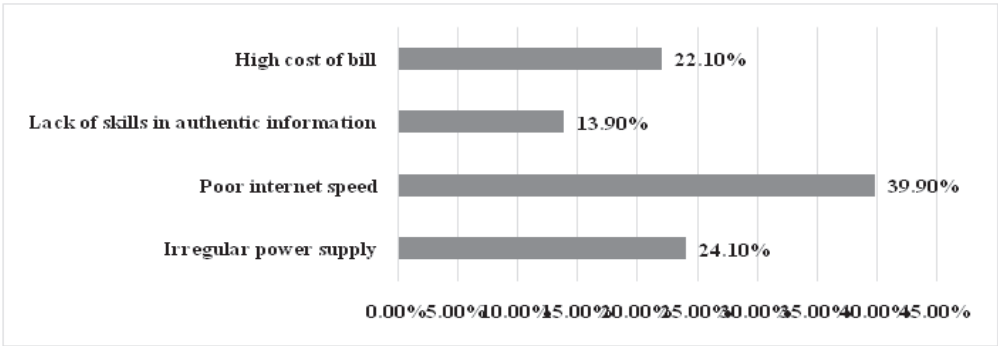

Figure 4: Problems encountered while using the internet

Table 5 and figure 4 show the problems encountered while using the internet where 160 (39.9%) respondents face problems because of poor internet speed, 97 (24.1%) responded because of irregular power supply, 89 (22.1%) face problems because of the high cost of the bill and rest 56 (13.9%) responded because of lack of skills in authentic information. According to the analysis, slow internet speed is the main cause of issues for the majority of students.

5.7 *Usage of professional/academic networking sites*

Table 6 : Usage of professional/academic networking sites

Sl. No.	Usage	No. of responses	%
1	Academia	74	18.0
2	Research Gate	135	32.9
3	Google Scholar	165	40.1
4	Penprofile	37	9.0
Total		**411**	

Table 6 depicts the respondents' usage of professional/academic networking sites. The majority of the students i.e., 165 (40.1%) use Google Scholar, 135 (32.9%) use Research Gate, 74 (18.0%) use Academia, and only 37 (9.0%) use Pen profile. The data indicate that among students, Google Scholar is the most widely used academic and professional networking site.

5.8 *Frequency of use academic networking sites*

Table 7: Frequency of use of academic networking sites

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Everyday	19	9.6	9.6	9.6
	Twice a week	15	7.6	7.6	17.2
	Weekly	36	18.2	18.2	35.4
	Monthly	46	23.2	23.2	58.6
	Sometimes	82	41.4	41.4	100.0
	Total	198	100.0	100.0	

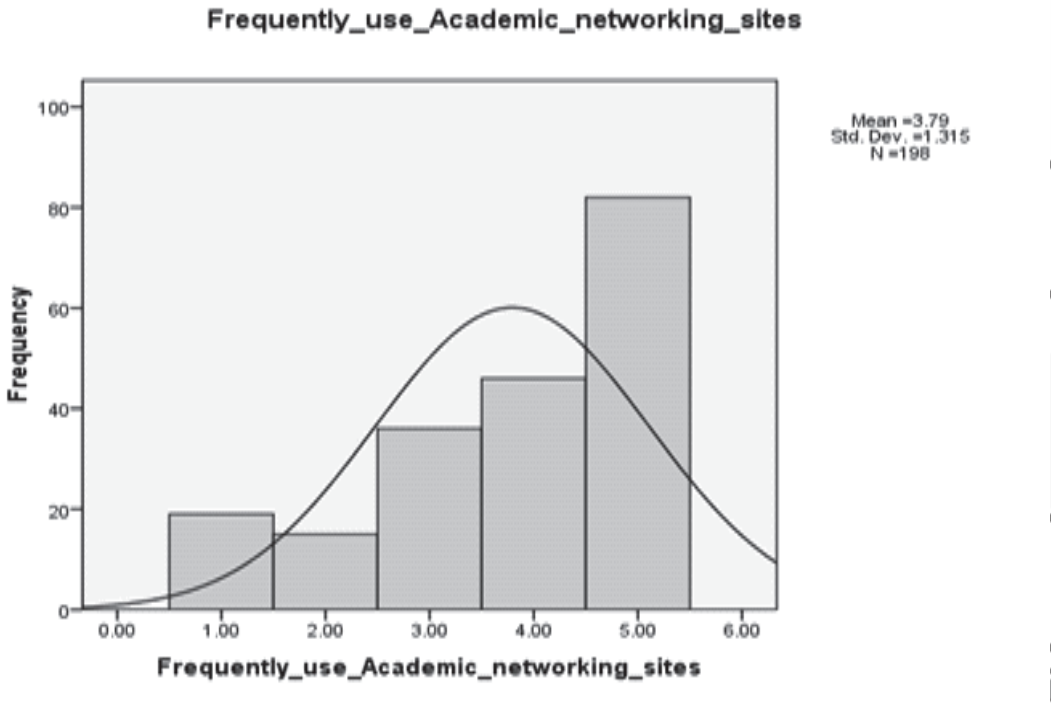

Figure 5: Frequency of use of academic networking sites

Table 7 and figure 5 examine how frequently students visit academic or professional networking. The majority of them visit sometimes i.e., 82 (41.4%), 46 (23.2%) visit monthly, 36 (18.2%) visit weekly, 19 (9.6%) visit every day, and only 15 (7.6%) visit twice a week. It indicates that more than half visit occasionally, and just a very tiny number visit frequently for academic or professional networking.

6. Conclusion

Due to the explosion of information in all dimensions, it might be challenging to select accurate and reliable information in the current digital environment. One must be aware of and completely ready for the impending information explosion, which has the power to either benefit or harm one's future. The study found that most respondents know about digital literacy. The various activities conducted by the respected university libraries were the primary ways in which the students learned to be digitally literate. Only a small percentage of people have a very high level of acquaintance with information and communication technology, the most popular scholarly platform for information exchange is Google Scholar, which is mostly used to compile notes. Less than half of students use the Internet for marketing, while the majority of them use it for entertainment. Lastly, it indicates that more than half visit occasionally to academic or professional networking to retrieve information, and just a very tiny number visit frequently.

The current study emphasised that students can use ICT to process and recover

data and then use computers and the internet safely and effectively. They also have knowledge of digital devices, web-based applications, and MS Office applications, as well as how to use academic and professional networking websites and problems, encountered while using the internet. To improve the barriers preventing opportunities to acquire digital literacy, the institution and library should focus more on this issue; they should take the initiative in organising user education and awareness programmes in the use of digital devices. Thus, Students will have advanced learning skills and be innovative problem solvers. The challenge for the upcoming years is to make sure that every student has the chance to develop and illustrate these competencies and ensure that they are challenged to adequately enhance their abilities, wisdom, and data to systematically participate in all factors of producing digital texts, along with the sharing of information of their works. Thus the study is limited to only Postgraduate (P.G.) students in the School of Life Science of selected Northeast Central Universities. Researcher may undergo further studies on digital literacy skills of PG students of different Schools, Research Scholars and Faculty of Northeast Central Universities.

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