DIGITAL LITERACY AMONG B.ED. STUDENTS IN KOLLAM DISTRICT

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Abstract: This paper is aimed to analyse digital literacy among B. Ed students in Kollam district. For this purpose, students from two government and two aided B.Ed colleges in Kollam district is selected for the study. A structured questionnaire is prepared and distributed among 182 students. The major findings includes, 1) Majority of the students are aware of E-journals and E- books. 2) They have adequate knowledge in attaching a file to an e-mail and to download and save document. 3) Majority Of students use CD-ROM, Maps and slides. 4) Among e- resources e-journals, e- books and ETDs were identified as most preferred. 5) Majority of B. Ed students use e-resources for preparing to competitive, to update knowledge and to collect materials for teaching. 6) Google is the most preferred search engine by B. Ed students. 7) Among softwares and tools, B. Ed students rarely use word processing soft wares and excel worksheet. But they browse internet every day and use e-mail frequently.8) Among OPAC search options, Author, Title and Subject were used frequently. 9) Students need training to get needful information form internet and techniques to retrieve more and relevant results. 10) Low internet access speed, difficulty in accessing relevant information and lack of support from IT staff is a problem to majority of students.
Keywords: Digital Literacy, Education, Information Literacy, B. Ed Students

1. Introduction

The term literacy generally means the ability to read and write. If it is confined to a specific area, it may be the competence or knowledge in that area. Digital literacy is the set of competencies required for full participation in a knowledge society. According to Paul Glister, Digital literacy is the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers. It includes knowledge, skills, and behaviors involving the effective use of digital devices such as smartphones, tablets, laptops and desktop PCs for purposes of communication, expression, collaboration and advocacy. The present study is intended to find out the digital literacy of B. Ed students in Kollam district. This study is found to be highly relevant in this digital era because, teacher students are supposed to integrate basic skills to students to satisfy their information needs using e- resources. They must have adequate knowledge in handling digital equipment to retrieve relevant information from e-resources.

2.0 Literature Review

A study of the use of various ICT tools and web based services by 135 students, registered for 3[rd]Administration course in six institutions of higher education in Davanagere district was undertaken by Parvathamma&Pattar (2013). Questionnaire was used as the data collection tool. The findings reveal that all the respondents own personal computer, and 73.33% of them have their own Internet connectivity. Laptop, smart phone, digital camera and I-pod are the most widely used tools. Hatlevik (2009) experimented to identify and understand how digital literacy among 9th grade students is related to time spent on computers at school and outside school, family background and priorities from the schools. The findings from the study reveal a large variation in digital literacy and this can indicate a digital literacy divide among the 9th grade students. Overall, the findings indicate how systematic factors at the individual and school levels have an impact on digital literacy.

This literature review conducted by Blummer, Barbara (2008) examined eleven articles that track the digital literacy practices of youth populations or individuals between the ages of 12 and 17. It describes the practices of these individuals through three perspectives, including: studies centered on general youth populations, research

discussing innovative programs targeting students from low income families, and articles tracking digital literacy competencies among young immigrant learners. Foremost, the articles highlight young people's efforts to express themselves through their own online literacy. Gender differences in the computer literacy levels was investigated by Maxwell & Maxwell (2014) among undergraduate students of Faculty of Education, Kogi State University, The sample size for male was 248 and 226 was for the female students using random and purposive techniques to select. A structured questionnaire was used for data collection. Findings revealed that students with computer literacy were inclined to access and use of e-resources and e-library facilities better. Moreover, differences exist in digital/computer usage and software applications.

Asadullah (2014) surveyed digital information literacy among research scholar of the arts & science research scholars residing in Vellore district. A detailed analysis and discussion of the data obtained through questionnaires. The survey reveals that scholars feel that library has a greater role to play for the promotion of digital information literacy among its user community. The study conducted by Emiri(2017) discussed the contemporary digital literacy skills (DLS) among librarians in university libraries the 21st century in Edo and Delta States of Southern Nigeria. The design of the study is descriptive survey and the population consists of all librarians from university libraries in the aforementioned states in Nigeria. The findings show that electronic mailing, social networking, use of PDAs, mobile phones and internet surfing are the major DLS amongst librarians. It was also discovered that librarians acquired DLS through colleague's assistance, trial and error, IT programmes and formal education while librarian's level of use of DLS is low amongst other findings.

Digital literacy of science-research scholars of University of Kerala was conducted by Bibina& Kabir (2016). Questionnaires were administered among science-research scholars of University of Kerala. The findings reveal that a great majority of the respondents are familiar with web portal, online databases, digital library/archives, open access e-books/e-journals and search engines. Majority of them have awareness about Google Scholar and web 2.0 based services. A good percentage of the respondents used desktop, laptop and smartphone for internet access.

3.0   Objectives of the Study
The main objectives of the study are;
1. To assess the awareness of digital resources among B.Ed students
2. To identify electronic resources preferred by B.Ed students
3. To find out purpose and frequency of use of softwares and web based services
4. To identify the level of satisfaction on the use of internet resources
5. To identify the type of digital literacy training programs needed by B.Ed students
6. To identify the constrains faced while using digital resources

4.0 Hypotheses
1. There is no significant relation between age and frequency of use of internet
2. There is a significant relation between B.Ed students with Post graduation and use of e-resources

5.0   Methodology

The population selected for the study includes B.Ed students in Kollam district. Students from two government and two aided B.Ed colleges in Kollam district is selected for the study. The colleges are Kerala University College of Teacher Education Kulakkada with 32 students, Kerala University College of Teacher Education Kollam with 50 students, Karmelarani training college Kollam with 50 students and BaseliosMarthoma Mathews II Training Collegewith 50 students. A structured questionnaire is prepared and distributed among 182 students. The analysis was conducted using 162 filled questionnaires. Data obtained through questionnaire was entered in MS Excel 2010 worksheet and the analysis was done using SPSS version 2.0.

6.0 Significance of the Study

Digital resources have a greater demand among B.Ed students by helping them to get enough information quickly in any subject of interest. In the modern world, many of the reputed institutions acquire these types of digital resources and make it available to the B.Ed students for promoting their teaching and learning process. The study is intended to know the digital literacy of B. Ed students.

7.0 Data Analysis

The collected data was analysed using SPSS Version 20. The analysis was presented below.

7.1 Awareness of Electronic Information Resources: Information explosion and developments in information and communication technologies lead to the emergence of a vast variety of digital information resources. An investigation was conducted on B. Ed students to explore their awareness about those digital information resources. The distribution of response is tabular represented in Table1.

Table 1- Awareness of E-Information Resources

E resources	Frequency	Percentage
E journals	126	92
ETD	74	54
E database	72	52.6
E – book	113	82.5
E archives	34	24.8
E report	43	31.4
E patent	48	35
Gateways	39	28.5
Web portals	68	49.6
Digital library	84	61.3
Web OPAC	22	16.1

Majority (92%) of the students are aware are E-journals. More than eifhty two percent (82.3%) of the respondents are aware of E- books. Electronic databases and electronic thesis and dissertations are aware to 52.6 and 54 percent of students respectively. The least aware resources are e –archives (24.8%), gateways (28.5%), and web OPACs (16.1%).

7.2 Extend of Digital Literacy: Digital literacy includes knowledge, skills, and behaviors involving the effective use of digital devices such as smartphones, tablets, laptops and desktop PCs. The extend of those capabilities were identified using some statements and the distribution is given in Table 2

Table 2- Extent of Digital literacy

Statements	Not known	A little knowledge	Adequate knowledge	Proficient
I can attach a file to an e mail	10.2	27.0	33.6	29.2
I know how to download and save document	2.9	43.8	45.3	8.0
I know how to convert word file to PDF and PDF to word File	39.4	58.4	2.2	0
I can create a simple website for my projects through MS Publisher	52.6	32.1	15.3	0
I can create students grade with the help of MS excel	25.5	19	27.7	27.7
I know how to use advanced search facilities	52.6	32.1	15.3	0
I know how to use web 2.0 Service	16.1	36.5	28.5	19
I am familiar with internet search tools	3.6	27	29.9	39.6

Majority of respondents (33.6%) have adequate knowledge in attaching a file to an e-mail. Only 10.2% are not known how to do this. Among the respondents 45 percent have adequate knowledge and some percentages have a little knowledge to download and save document. Only 3 percent have unable to do. Nearly 60% of students have a little knowledge on file conversion. No one have proficient knowledge on file conversion. More than half (52.6%) of students did not know to create simple website and 32% have a little knowledge. Nearly twenty-eight percentages of B. Ed students has adequate knowledge and 27.7% have deficient knowledge in using MS Excel. Most of the respondents (52.6%) students have not known about use of advanced search facilities. Twenty six percent of respondents are not known about the web 2.0 services. Proficient knowledge about internet search tools has 39.6 percent of respondents and 29.9 percent of respondents had adequate knowledge.

7.3 Use of Digital Audio Video Materials: Digital materials were used in mainstream of teaching purpose. So, extend use of these materials amongB. Ed students must be assessed. The frequency of use of digital audio video materials is graphically represented in figure 1.
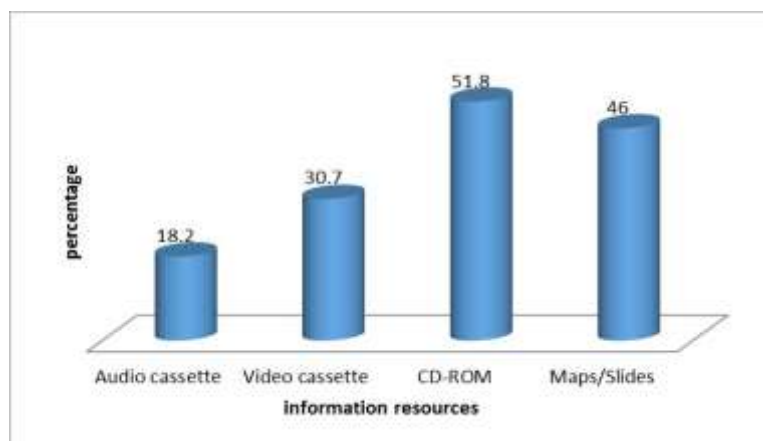
Figure 1: Use of digital audio video materials

From the above figure it is clear that, more than half (51.8%) of the students use CD-ROM. Maps and slides were used by 46 percent of B.Ed students. The other two materials, audio cassette and video cassette were very low(18.2% & 30.7%) due to the emergence of CD- ROM s.

7. 4 Preference Among E-resources: A wide variety of e- resource are available today. Students may place preference among them due to ranges of reasons. Preference among students on use of some major types of electronic resource was collected and is tabulary represented in Table 3.

Table 3- Preference Among Use Of E-Resources

E resources	Preference							
	Rank 1	**Rank 2**	**Rank 3**	**Rank 4**	**Rank5**	**Rank 6**	**Rank 7**	**Rank 8**
E journal	**87 (63.5%)**	0 (0%)	0 (0%)	1 (.70%)	1 (.70%)	1 (.70%)	0 (0%)	0 (0%)
e books	45 (32.8%)	**66 (48.2%)**	11 (8%)	5 (3.6%)	6 (4.4%)	1 (0.7%)	3 (2.2%)	0 (0%)
ETD	1 (0.7%)	9 (6.6%)	37 (27%)	**42 (30.7%)**	40 (29.2%)	6 4.4%	2 1.5%	1 (0.7%)
E- Databases	1 (0.7%)	4 (2.9%)	31 (22.6%)	35 (25.5%)	**41 (29.9%)**	14 (10.2%)	8 5.8%	3 2.2%
Insti: Repositories	0 (0%)	1 (0.7%)	4 (2.9%)	4 (2.9%)	13 (9.5%)	**79 (57.7%)**	21 (15.3%)	15 10.9%
E- patents	0 (0%)	0 (0%)	1 (0.7%)	3 (2.2%)	0 (0%)	15 (10.9%)	10 (7.3%)	**108 (78.80%)**

It is found from the analysis that, out of 137 respondents, 63.50% gave first preference to e-journals. Second preference is given to e- books (48.20%) and third preference is given to ETDs (30.70%).E –databases came in fifth position with 29.90 percent of response rate. The respondents gave sixth preference to institutional repositories (57.70%), seventh preference to e-reports (65.70%) and eighth preference to e-patents (78.80%).

7.5 Purpose of Using E-Resources: E-resources are recognized as a major source of scholarly information. Most of the time, teachers and students need electronic resources not only for improving their learning, but also for many other purposes. This section identifies the purpose of using e-resources by the B.Ed. students. Table 4 represents the distribution.

Table 4 - Purpose of using e-resources

Sl. No.	E resources	Percentage
1	To update knowledge	81.8
2	To collect materials for teaching	83.9
3	To write articles for publication	46
4	To carry out project work	75.2
5	To prepare competitive exam	89.8

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Around 90 percent of B. Ed students use e-resources for preparing to competitive exam. Eighty two percent of students use e resources to update knowledge and eighty four percent to collect materials for teaching. Only 46% use these types of resources to prepare article and seventy five percent to do project work.

7.6 Use of Search Engines: A web search engine is a software system that is designed to search for information on the World Wide Web. The relevance and order of search results may vary from search engine to search engine. The choice of search engine is based on one's need and quality of search engine. Table 5 represents distribution based on search engine preferred by B. Ed students.

Table 5 - Use of Search Engines

Search	Respondents	Percentage
Google	127	92.7
Yahoo	39	28.5
Alta vista	10	7.3
MSN	10	7.3
Bing	13	9.5
Baidu	17	12.4

Lists of widely used search engines were given in the questionnaire. From them six search engines with relatively high frequency of response is given in the table. Nearly everyone (92.7%) prefer to use Google. Yahoo is used by 28.5 percent of respondents. Baidu search engine is used by 12.4 percent of students. Only a small portion use (7.3% each) Alta Vista and MSN search engines.

7.7 Use of Softwares And Web Based Services: The frequency of use of softwares and web based services among B.Ed students were collected and the distribution is given in table 6.

Table 6 - Use of Softwares and web based services

Software/ web-based services	Every day	4-5 Times	2-3 Times	Rarely	Never
Word processing software	9.5	16.1	18.2	38.7	17.5
Spreadsheet	8.8	12.4	21.2	40.9	16.8
E mail	29.9	24.8	18.2	19.7	7.3
Blogging	27	16.8	19.7	34.3	2.2
Internet chatting	50.4	14.6	8.8	13.1	13.1
Video conference	13.1	17.5	10.9	31.4	27
Computer games	22.6	73	7.3	32.1	30.7

Among the sample respondents 38.7% B.Ed students use word processing soft wares rarely. 17.5% of them never used word processing soft wares. In the case of usage of excel worksheet, 40.9% use it rarely and 21.2% use 2-3 times in a weak.29.9% of students use e-mail in every day and 24.8% students were use e-mail in 4-5 times in a weak and 18.2% students use in 2-3 times in a weak.

In the case of internet browsing 48.9% students browse internet in every day. 29.9% students are use internet in 4-5 times. 97.3% of students use blogs in their B.Ed program. 27% students use blog in every day, 16.8% students use blog in 4-5 times in a weak, 9.5% students use 2-3 times and 34.3% of students use in rarely. Only 2.2% of students not use blog. Half (50.4%) of the students use internet chatting. 14.6% students use 4-5 times in a weak, 8.8% 2-3 times in a weak. Internet chatting is rarely by 13.1% students. In the case of the online information 41.6% students accessed. 13% students not used the online information. Only 13.1% students use video conferencing in every day. Major part of the students uses computer games. 22% students use computer games in every day, 7.3% students use in 4-5 times and 2-3 days in a weak. 32.1% of students use computer games in a weak.

7.8 OPAC Search Options: Different access points are available in OPACs. The distribution based on OPAC search option is given in Figure 2.
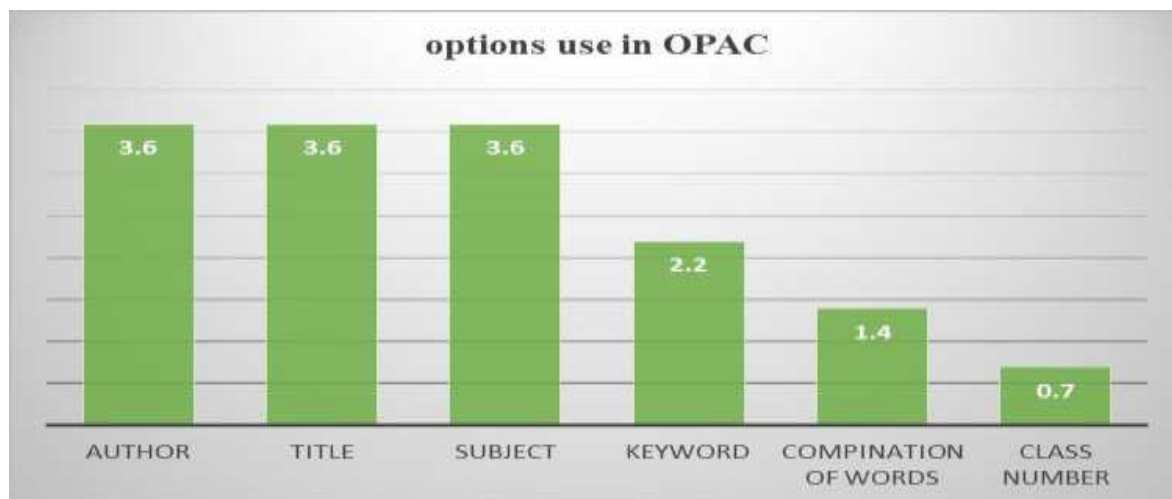
Figure 5 - OPAC search options

From the above figure, It clear that,3.6 percent of students each use author, title and subject as access options. Class number search is used by only 0.7 percent of B. Ed students. Keyword search is used by 2.2 percent of students.

7.9 Need for Digital Literacy Training Program: Digital literacy training programmes enhance the ability of students to find and use electronic resources available to them. The distribution based on need for digital literacy training programmes is given in Table 7.

Table 7 - Digital Literacy Training Program

Types of digital literacy training program	Strongly agree	Agree	Disagree
Discipline specific training program	40.1	48.9	10.9
Information retrieval training program	48.2	50.4	1.5
Information content briefing	47.1	42.8	9.4
Online resources searching skill	54	38.7	7.3
Filter junk files while searching	65.7	25.5	8.8
Evaluation of digital information Resources	56.2	28.5	15.3

About sixty percent (65.7%) of students need training to avoid unnecessary files from the retrieved results. In the abundancy of resources, 56.2 percent want training to find out good sources. Another half (54%) of students want training on searching techniques to retrieve more and relevant results. Fourtystudents have need discipline specific training program. Around 49% of students need information retrieval training program.

7.10 Constrains Faced in Using Digital Resources: Students face a lot of problems in using e resources. Their responses were elicited in order to find out the barriers faced by them, and the distribution is represented in Table 8.

Table 8 - Constrains faced in using digital resources

Sr. No	Problems	Percentage
1	Slow access speed	84.7
2	Difficulty in finding relevant in formation	71.5
3	Difficulty in using digital resources due to the lack of IT knowledge	57.7
4	Frequent power failure	61.3
5	limited working hours of library/institution	68.6
6	Lack of support from IT staff	61.3
7	No campus computer not work	58.4
8	No digital resources available in your library	58.4
9	Lack of ICT facilities	57.7
10	Copyright issues	51.8

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Nearly eighty-five percent of respondents face the problem of low internet access speed. Seventy-one percent face difficulty in accessing relevant information. Frequent power failure and lack of support from IT staff is a problem to 61.3 % of students each. Unavailability of information resources and unavailability of computers is a problem to fifty-eight percent of students.

7.11 Association between B.Ed. Students with Post-Graduation and Use of E-resources

The extend of use of e resources may vary based on qualification of users. In order to check this, an investigation was conducted to check any relation between additional qualification and use of e- resource. It is represented in Table 9.

Table 9 - **Association Between B.Ed. Students with Post-Graduation and Use of E-resources**

variable	category	Post-graduation		χ^2	P value
E journal	yes	68	58	.382	.537
	no	7	4		
E journal article	yes	58	50	.223	.637
	no	17	12		
E theses and dissertation	yes	43	31	.735	.391
	no	32	31		
E database	yes	42	30	.789	.374
	no	33	32		
E books	yes	62	51	.004	.950
	no	13	11		
Subject gateways	yes	16	9	1.057	.304
	no	59	53		
E archives	yes	22	12	1.811	.178
	no	53	50		
E reports	yes	25	18	.292	.589
	no	50	44		
E patents	yes	25	23	.211	.646
	no	50	39		

All the p values are greater than 0.05. So there is no significant relation between use of e-resources and students with Post graduation. Hence hypothesis H1 is rejected.

7.12 Association between Age and Awareness of E- information Resources:
In order to find out the relation between age and awareness of e resources a chi- square test was conducted. The test is given in table 10. H1: There is a significant association between age and awareness of e-resources.

Table 10 - Association between Age and Awareness of E- Information Resources

variable	category	Age				χ^2	P value
		20-24	25-29	30-34	35 & above		
E journal	yes	109	13	2	2	.387	.943
	no	10	1	0	0		
E theses dissertation	yes	64	8	0	2	5.262	.154
	no	55	6	2	0		
E- database	yes	66	3	2	1	4.110	.250
	no	53	11	1	0		
E books	yes	95	14	2	2	4.401	.221
	no	24	0	0	0		
Subject gateways	yes	22	2	0	1	1.950	583
	no	97	12	2	1		
E - archives	yes	31	2	0	1	2.269	.518
	no	88	12	2	1		
E reports	yes	40	3	0	0	2.748	.432
	no	79	11	2	2		
E patents	yes	45	3	0	0	3.700	.296
	no	74	11	2	2		

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Table showed that, the p value is greater than 0.05. So, there is no significant relation between age and awareness of information resources. Hence Hypothesis 1 is rejected.

8.0 Major Findings:

1. Majority of the students are aware of E-journals and E- books. Electronic databases and electronic thesis and dissertations are aware to half of respondents.
2. Majority of respondents have adequate knowledge in attaching a file to an e-mail and to download and save document. No one have proficient knowledge on file conversion. More than half of students did not know to create simple website and to use advanced search facilities.
3. Majority Of students use CD-ROM, Maps and slides.
4. Among E- resourses, E-journals, E- books and ETDs were identified as most preferred.
5. Majority of B. Ed students use e-resources for preparing to competitive, to update knowledge and to collect materials for teaching.
6. Google is the most preferred search engine by B. Ed students.
7. Among softwares and tools, B. Ed students rarely use word processing soft wares and excel worksheet. But they browse internet every day and use e-mail frequently.
8. Among OPAC search options, Author, Title and Subject were used frequently.
9. Students need training to get needful information form internet and techniques to retrieve more and relevant results.
10. Low internet access speed, difficulty in accessing relevant information and lack of support from IT staff is a problem to majority of students.

9.0 Conclusion:

Now we are living in digital era. So it is impossible to lead a smooth life without digital literacy. As a student, a large portion his learning materials are available in digital format. More than this fact, a teacher student must obtain digital literacy for his own sake and to impart those skills to his students. This study reveals the level of digital literacy of B. Ed students.

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