INFORMATION LITERACY COMPETENCE AND SKILLS AMONG FACULTY MEMBERS OF BLDE AND SECAB ENGINEERING COLLEGES IN VIJAYAPURA

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ABSTRACT

The present study explores the Information literacy competencies and skills among the faculty members of engineering colleges in vijayapura. A survey method of research was used for the present study where in structured questionnaire was designed for the purpose of data collection. 150 questionnaires were distributed among the faculty of engineering colleges of BLDE and SECAB faculty members. The present paper aims to highlight the knowledge about skills of the information literacy that allows faculty to searching and locating and evaluation, and uses the information. The study found that majority of the faculty have better knowledge and skills about uses different types of sources and resources and different kind of tools and services respects in their fields

Keywords: Information literacy, searching skills, sources of information, engineering faculty

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1. INTRODUCTION

The term of information literacy is very important for, technical education or engineering education because engineering science or technical courses or fields provide technical education has particular challenges in identifying, evaluating and using information from diverse sources and formats such as technical standards, journal articles and patent. The term

Information literacy is defined as the “set of abilities requiring individuals to recognize when information is needed and have the ability to locate evaluate and use effectively the needed information” (ALA: 1989). A similar understanding of information literacy is assumed by Andretti (2005: 15) who defines information literacy as the ability to identify the need for information; to know the importance of accurate and authentic information; to develop search strategies to assist in finding information; to source information; to evaluate information; and, to use and organize information effectively (MousinOmarsaib 2015).

“Information literacy in science, engineering, and technology disciplines is defined as a set of abilities to identify the need for information, procure the information, evaluate the information and subsequently revise the strategy for obtaining the information, to use the information and to use it in an ethical and legal manner, and to engage in lifelong learning. Information literacy competency is highly important for students in science and engineering/technology disciplines who must access a wide variety of information sources and formats that carry the body of knowledge in their fields. These disciplines are rapidly changing and it is vital to the practicing scientist and engineer that they know how to keep up with new developments and new sources of experimental/research data. Science, engineering, and technology disciplines require that students demonstrate competency not only in written assignments and research papers but also in unique areas such as experimentation, laboratory research, and mechanical drawing).

***Information literacy and higher engineering education.** Developing lifelong learners is central to the mission of higher education institution. Ensuring that individuals have the intellectual abilities of reasoning and critical thinking, and by helping them to construct a framework for learning how to learn, colleges and universities provide the foundation for continued growth thoughttheir careers, as well as in their roles as informed citizens and members of communities. Information literacy is key component of, and contributor to, lifelong learning. Information literacy is increasingly important in contemporary environment of rapid technological changes and proliferating information resources.(“transilvania” university library along the search and write tutorial).

2. REVIEW OF LITERATURE

Rosenzweig and Gardner (1994) reported on their survey in Chemical Engineering Progress that, “chemical engineers today spend a considerable amount of time retrieving and using information on a wide variety of topics...” but, “depended on personal collections and other engineers for their information, and were not making good use of the growing number of electronic options. More than half the survey respondents attributed this to their inability to find and use appropriate information”.

Kristin M. Klucevsek & Allison B. Brungard (2016).For undergraduate students to achieve science literacy, they must first develop information literacy skills. These skills align with Information Literacy Standards and include determining appropriate databases, distinguishing among resource types, and citing resources ethically. To effectively improve information literacy and science literacy, we must identify how students interact with authentic scientific texts. In this case study, we addressed this aim by embedding a science librarian into a science writing course, where students wrote a literature review on a research topic of their choice. Library instruction was further integrated through the use of an online guide and outside assistance. To evaluate the evolution of information literacy in our students and provide evidence of student practices, we used tasks scaffold writing assessments, a reflection, and surveys. We found that students improved their ability and confidence in finding research articles using discipline-specific databases as well as their ability to distinguish primary from secondary research articles. We also identified ways students

improperly used and cited resources in their writing assignments. While our results reveal a better understanding of how students find and approach scientific research articles, additional research is needed to develop effective strategies to improve long-term information literacy in the sciences.

3. OBJECTIVE OF THE STUDY

The main objectives of study are:

1. To know the level of knowledge of information literacy skill among faculty members of BLDE, SECAB Engineering colleges.
2. To understand the skill level in identifying types of information sources by the faculty members of engineering colleges.
3. To identify the different information search technique used by the faculty members of engineering colleges.
4. To find out how the faculty members are locate and access information in libraries of engineering colleges.
5. To find out the computer and ICT literacy skills among the faculty members of engineering colleges.
6. To know how the selected information is evaluated by the faculty members of engineering colleges.

4 NEED FOR THE STUDY

The study is undertaken to investigate the level of competency and skills among the faculty members of engineering colleges of BLDE and SECAB .The study population is basically involved in teaching, research and knowledge extension. The Faculty of engineering college require constantly update their existing knowledge in their field. Information available in different form and structure as there is enormous information available in the from all the resources and remote corner of the world.Thus present study will be carried out to find out extent information literacy competency skill among the faculty of engineering colleges in vijayapura.

5. SCOPE AND LIMITATION OF THE STUDY

The present study is explorative nature based on the primary data collected from study population BLDE and SECAB engineering colleges in vijayapura. The study will conducted with the intention to understand the information literacy skills and competencies among the faculties and confined only B.E, M.E and Ph.D. in the Civil, Mechanical, Electronic and Electrical, Computer science branches have taken.

6. METHODOLOGY

This study covers the engineering colleges of BLDE and SECAB. The survey method of research was used. Further structured questionnaire was used as data collection tool for collecting required information from the study population. Questionnaire was designed according to the objectives and available literature on the topic information literacy competencies and skills. Further appropriate sampling technique was adopted for selection of the sample. Later structure questionnaire was distributed among the faculty members of engineering colleges of BLDE; SECAB.The data so collected was analyzed, tabulated and interpreted in the fallowing section.

7. ANALYSIS AND INTERPRETATION OF THE DATA

Information literacy competencies and skill are important for technical education or engineering education to increase the familiarity of topics identifying key concept recognize and update exist knowledge a identifies value of difference of potential resources in various formats in their discipline.

Table 1 Gender wise distribution of the respondents

Sl no	Gender	Frequency	Percent (%)
1	Male	91	60.7
2	Female	59	39.3
	Total	150	100.0

The above table presents the gender wise distribution of the study sample, it is found that majority of the study population 91(60.7%) belong to male category. While, remaining 59 (39.3%) of the respondent belongs to female category. It can be concluded that majority of the study sample belongs to male counterpart only.

Table-2 Age of the respondents

Sl.no	Age of the respondents	Frequency	Percent (%)
1	Less than 35 age	68	45.33%
2	35-45 years	72	48%
3	More than 45 years	10	6.66%
	Total	150	100.0

Table-2 reveals about age wise distribution of the faculty members of engineering college under study. It has been observed that more than 68 (45.33%) of the study sample have less than 35 years of age and remaining, 72 (48%) of the respondents were in between 35-45 years of age. And only 10(6.66%) were more than 45 years.

Table 3 Domicile wise distribution of the respondents

Sl no	Place	Frequency	Percent (%)
1	Rural	22	14.66%
2	Urban	128	85.33%
	Total	150	100.0

Table- 3 indicates place wise distribution of the respondents under study, greater majority of the study population 128 (85.33%) belongs to urban place and while only 22(14.66%) of the study population belongs to rural area. It can be concluded that representation of the study population is less from rural area.

Table 4 Do you Visit to library?

Sl no	Opinion	Frequency	Percent
1	Yes	150	100.0
2	No	0	0
	Total	150	100.0

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The respondents from the above table-4 shows regarding the visiting to library. Out of 150 to 150 they visit the library.

Table 5 Frequency of visit to library.

Sl no	Frequency of visit to library	Frequency	Percent (%)
1	Almost Daily	15	10.0%
2	Once in Week	48	32%
3	Twice a Week	56	37.33%
4	Fortnightly	12	8%
5	Once a Month	11	7.33%
6	Occasionally	4	2.66%
	Total	150	97.32%

The table 5 shows that majority of the faculty member 56 (37.33%) visit the library twice a week, and there are 48(32%) visit in once week, 15 (10%) visit almost daily, 12(8%) visit fortnightly, 11(7.33%) once a month, and only few of them are 4 (2.66%) visiting occasionally. it can be seen that all faculty member visiting the library but it is found that 10% are visiting daily.

Table 6 Purpose of library visit

Sl no	Purpose	N	Percent (%)
1	To borrow and lending books	150	100.0%
2	To read the journal articles	139	92.7%
3	To read the newspapers and magazines	150	100.0%
4	For the reference	130	86.67%
5	Research purpose	90	60%
6	Browsing internet	92	61.3%
7	Update knowledge	64	42.67%
8	Project work	98	65.33%

Above table reveals that out of 150 to 150(100%) respondents have visited library for 'to borrow and lending books, and like that 150 (100.0%) 'To read the newspapers and magazines, while 139 (92.7%) are visited to read the journal articles, 130 (86.67%) said for references, 98(65.33%) for the Project work, another 92 (61.3%) for Browsing internet, 90 (60%) for Research purpose followed by 64 (42.67%) visiting for Update knowledge. It is conclude that the all the faculty member visit library for purpose of borrow and lending books and read newspaper and magazines and journal articles.

Table 7 Types of information needed

Need of information	N	Percent (%)
Academic information	150	100.0%
Generalised information	150	100.0%
Health information	31	20.7%
Research information	108	72.0%
Statistical information	52	34.66.0%
Current information	71	47.33%
Financial information	90	60%

Political information	83	55.3%
Information related Govt. programme and policy	69	46.0%
Environmental Information	85	56.66%

The above table explains about what type of information needed the respondents 150 (100%) needs 'Academic information, followed by the same 150 (100%) General information, and 108 (72%) Research information, 90(60%) financial Information, 85(56.66%) related to Environmental Information, 83 (55.3%) Political information, and 71 (47.33%) Current information, 69(46.0%) Information of Govt. programs and policy, 52 (34.66%) Statistical information, 31(20.7%) health information respectively.

Table 8 Access needed information

Needed information	N	Percent (%)
Library	150	100.0%
Internet/Web	150	100.0%
Medias(TV,Radio,Newspaper	41	27%

The above table reveals that out of 150 to 150 (100%) are access the needed information through the Library, and same as 150(100%) needed information through the Internet/Web, only 41 (27%) accessing information through the Medias (TV, Radio, Newspaper) respectively.

Table 9 Types of sources that you use to satisfy your information need

Sources	Frequency N=150	N
Books	150	100.0%
Journals	150	100.0%
Back volume of periodical	31	20.7%
Reference sources	116	77.3%
Standard and specification	150	100.0%
Technical Reports	41	27.3%
Patents	108	72.0%
Government Publication	83	55.3%
E-Books	150	100.0%
E-Journals	105	70.0%
CD-ROM sources	107	71.3%
E-database	140	93.3%

Above table shows the level of satisfaction of different types of information sources, that highest of the respondent fully satisfied 150 to 150 (100%) Books, 150 (100%) satisfy for journals available in library, 150 (100%) satisfy for E-Books, and standard and specification 150 (100%), the second most highest 140(93.3%) satisfy for E-database, and 116 (77.3%) satisfying Reference sources, 108 (72.0%) satisfy for pate patents, 107 (71.3%) CD-ROM sources 105(70.0%) E-Journals and remaining 83% (55.3%) Government Publication, and very few of them 31(20.7%) satisfying Back volume of periodicals.

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Table 10 Use engineering E-database sources

	Never	Rarely	Somewhat used	Used	Highly used	Total scores	Mean	Rank
IEEE Explore	12 8	0 0	0 0	44 29.3	94 62.7	658	4.386	1
INSPEC	12 8	0 0	11 7.3	87 58	40 26.7	593	3.953	3
Compendex	12 8	0 0	0 0	98 65.3	40 26.7	604	4.026	2
Pro Quest	12 8	19 12.7	22 14.7	97 64.7	0 0	504	3.36	4
NTIS	46 30.7	30 20	12 8	62 41.3	0 0	390	2.6	5
ASCE	46 30.7	30 20	52 34.7	22 14.7	0 0	350	2.333	6
ASCM	46 30.7	30 20	52 34.7	22 14.7	0 0	350	2.333	6

The above table 10 shows uses E-database that distribution made rank wise 1st rank it means highly used 94(62.7%) given IEEE Explore, and 2nd rank given to Compendex it means 98(65.3 %) used, and 3rd is given to INSPEC it mean 87(58%) , and followed 4th rank one given to ProQuest 97(64.7%) just used, and 5th NTIS 62(41.3%), like that 6th r rank is given to ASCE, and ASCM that is 22(14.7%) uses E-database in engineering colleges respectively.

Table 11 Identification of sources by the faculty members

	Sources	Primary	Secondary	Tertiary
1	Patent	53	0	0
		35.33	0	0
2	Book	0	89	0
		0	59.33	0
3	Journals	67	0	0
		44.66	0	0
4	Standard and specification	42	0	0
		28	0	0
5	Dissertation and Thises	55	0	0
		36.66	0	0
6	Dairies	12	0	0
		8	0	0
7	Bibliography	0	0	23
		0	0	15.33
8	Autobiography	18	0	0
		12	0	0
9	Text book	0	48	0
		0	32	0
10	Handbook	0	37	0
		0	24.66	0
11	Encyclopedia	0	39	0
		0	26	0
12	Review article	0	41	0
		0	27.33	0
13	Research paper	28	0	0
		18.66	0	0
14	Manuscript	13	0	0
		8.66	0	0

The above table 11 highlight that the respondent identifying a primary sources out of 150 respondents identify 53(35.33%) patent, like that 67(44.66%) journal, 42(28%) standard and specification, 55(36.66%) identified the Dissertation and Theses, like that 12(8%) Dairies, 18(12%) Autobiography, 28(18.66%) Research paper, 13(8.66%) Manuscript, same as the respondent identifying secondary sources like 89 (59.33%) Books, like 48 (32%) was identify Text Book, 37(24.66) Handbook, 39(26%) Encyclopedia, 41(27.33%) Review article, finally respondent identifying Tertiary sources only 23(15.33%) was identify Bibliography.

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Table 12 Tools used for locating information

Locating information	Highly used	Used	Somewhat	Rarely	Never	Total scores	Mean	Rank
Library catalogue	93 62	57 38	0 0	0 0	0 0	693	4.62	1
Bibliographies	2 1.34	2 1.34	7 4.67	139 92.67	0 0	317	2.113333	4
Union catalogue	61 40.67	45 30	23 15.34	10 6.67	11 7.34	585	3.9	2
Abstract and indexes	0	23 15.34	94 62.67	21 14	12 8	428	2.853333	3
OPAC (Online public access catalogue)	0 0	0 0	32 21.34	84 56	34 22.67	298	1.986667	5

The above table shows Tools used for locating information that is distribution made rank wise 1st rank given to Library catalogue it means highly used 93 (62.%), and 2nd given Union catalogue 61(40.67%), and followed by 3rd rank given to Abstract and indexes 94 (62.67 %) used, like that 4th is given to Bibliographies 139 (92.67%) , and last 5th rank given to OPAC (Online public access catalogue) 34 (22.67%).

Table 13 Awareness about the library catalogue

Opinion	N	Percent
Yes	150	100.0
No	0	0
Total	150	100.0

The respondents from the above from table shows that awareness about library catalogue out of 150 to 150 (100%) are found to be awareness about the library catalogue.

Table 14 The sources usually covered in the catalogue

Sources	Frequency N=150	N
Government publication	150	100.0
Videos	93	62.00
CDs	62	41.3
Books	139	92.7
Article	97	64.7
Journals	97	64.7
Magazines Article	141	94.00

The above table explain that 150 (100%) replied that the catalogue covered about the Government publication, and 141 (94.00%) say about the Magazines Article, 139(92.7%) catalogue covered books, 97(64.7) catalogue usually covered Journals, like that 97(64.7) covered about Article, whereas 93(62%) said about Videos.

Table 15 Place where information is searched

Information searched	N=150	percent%
Library	150	100.0
Internet/Web	126	84.00
Medias (T.V, Radio, Newspaper)	35	23.3

Table-15 it revealed that all the respondent out of 150 to 150 (100%) searching information Library for getting the required information, and 126 (84.00%) is used to search information through the Internet/Web, whereas only 35 (23%) search through channels of the Medias (T.V, Radio, Newspaper) respectively.

Table 16 Skill find a book in shelve in the library collection

Skills	N	Percent (%)
By ISBN	19	12.7%
By Author	150	100.0%
By Title	126	84.0%
By call number	61	40.7%
I don't know	35	23.3%

The above table 16 shows about the skill to find book in shelve the data provided by the respondent it is clear that 150 (100.0%) have skill to find books by author, and 126 (84.0%) they used skill by Title, 61(40.7%) by call number, whereas only few of them have skill about find a book on shelves by ISBN, 35 (23.3%) they do not know anyone them.

Table 17 Search strategy used to get the information

Search strategy	N =150	Percent
Manual card catalogue	150	100.0%
Browse through the shelves	150	100.0%
Consult Bibliographies	68	45.3%
Utilization of index and Abstract	46	30.7%
OPAC	131	87.3%
Website	545	363.3%

Table 17 shows that search strategy used to get information majority of the respondent 545(363.3%) used Website, the second highest out 150 to 150 (100.0%) respondent used 'Browse through the shelves, like that 150 (100.0%) uses manual card catalogue, and 131(87.3%) OPAC is used as search strategy, and 68(45.3%) consult bibliographies, whereas only 46 (30.7%) utilization of index and abstract.

Table 18 Method used to search electronic resources

Method of Search	N	Percent
Through specific URL	139	92.7%

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Through search engine like Google's Yahoo	150	100.0%
Through subject gateway/portals	139	92.7%
Total	428	285.3%

The above table 18 revealed that majority 150 (100.0%) respondent used the method of search electronic resources is through search engine like Google's Yahoo' and 139 (92.7%) through specific URL, like that 139 (92.7%) through subject gateway/portals respectively.

Table 19 Search strategy used to search information in search engine

Search strategy in search engine	N	Percent
Type the required statement is s each box	202	134.7%
Type the keyword in search box	150	100.0%
Type the keyword using Boolean operators	115	76.7%
Use wildcard/Truncations	467	311.3%

The table 19 shows that respondent used the strategy to search the information 202(134.7%) Type the required statement in search box and 150 (100%) Type the keyword in search box, like that 115 (76.7%) Type the keyword using Boolean operators, whereas highest respondent used the 467 (311.3%) use wildcard/Truncation.

Table 20 Channels of information

Channels	N	Percent (%)
Accessing online database	139	92.7%
Attending seminar, conference symposia etc.	98	65.3%
Personal visit to subject specialists	118	78.7%
Through telephone	35	23.3%
Through fax	97	64.7%
Through email	106	70.7%

Table-20 reveals that majority of the respondent 139 (92.7%) Accessing online database, like that 118(78.7%) Personal visit to subject specialists, 106 (70.7%) access through the email, 98 (65.3%) use to access the information attending seminar, conference symposia etc., 97 (64.7%) Through fax, 35(23.3%) Through telephone.

Table 21 Parameter for evaluated the information

Parameter	N	Percent
Accuracy	150	100.0%
Validity	150	100.0%
Usability	108	72.0%
Authority	150	100.0%
Timeliness	140	93.3%
Reliability	140	93.3%
Currency	150	100.0%
Objectivity	150	100.0%
Comprehensive accessibility	150	100.0%

The above table 21 gives detail about the evaluation parameter of information that followed by the faculty of engineering colleges the majority of the respondent followed out of

150 to 150 (100%) accuracy, validity, authority, currency, objectivity, comprehensive accessibility, but the 140 (93.3%) timeliness, reliability, only one of them parameter usability that is 108 (72)

Table 22. Evaluate information its authenticity

Evaluation	N	Percent
To evaluate the information in term of currency authority and appropriateness	150	100.0%
To consult other sources to verify the information gathered	109	72.7%
To evaluate the information available in internet	63	42.0%
Total	322	214.7%

The table 22 is describes to evaluate information its authenticity. In this study, 150 respondent able to evaluate its authenticity (100.0%) use to evaluate the information in term of currency authority and appropriateness, and 109 respondent able (72.7%) consult other sources to verify the information gathered, 63(42.0%) respondent able to evaluate the information available in internet”.

Table 23 Problems and barriers while searching information

Problems	N	Percent
Lack of knowledge about use of library catalogue	104	69.3%
Lack of knowledge about arrangement of the books on shelves in library	93	62.0%
Unfamiliarity with search method	61	40.7%
Too much time consuming searching the information	126	84.0%
Lack of quality of information	61	40.7%
Slow access	83	55.3%
Difficulty to finding relevant information	150	100%
Lack of IT knowledge	138	92.0%
Lack of training in library	116	77.3%

Table-23 shows the problems and barriers faced while searching the information. 150(100.0%) Difficulty to finding relevant information, and 138 (92.0%) lack of IT knowledge, 126 respondents (84.0%) report too much time consuming searching the information, 116 respondents (77.3%) said Lack of training in library,104 respondents (69.3%) report that lack of knowledge about use of library catalogue, while 93 respondent said(62%) lack of knowledge about arrangement of the books on shelves in library,83 respondents(55.3%) slow access, like that 61 respondents (40.7%) report that unfamiliarity with search method, and lack of quality of information.

Table 24 Social issues around the use of information

Statements	A	SA	NAND	D	SD
I can identify and discuss the issue related to privacy and security in both print and electronic environments	137	5	3	2	3
	91.33	3.33	2	1.33	2

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I can identify and discuss issue related to free information and paid information	75	3	63	5	4
	50	2	42	3.33	2.66
I can identify and discuss issue related to censorship and freedom of speech	44	3	76	23	4
	29.33	2	50.66	15.33	2.66
I Have an understanding of intellectual property, copyright and fair use of copyright materials	69	5	64	7	5
	46	3.33	42.66	4.66	3.33

The above table explains that maximum respondents agree 137(91.33%) they can identify and discuss the issue related to privacy and security in both print and electronic environments, and followed by 75(50%) can identify and discuss issue related to free information and paid information, like that 69(46%) said that they have agree and understand of intellectual property, copyright and fair use of copyright materials, but 76(50.66%) not agree not disagree about the identify and discuss issue related to censorship and freedom of speech'

Table 25 Suggest the measures of important in information literacy skill and training

Statements	N	Percent
The library should conduct periodical training programs for faculty member and student on how to use the e-resources effectively and efficiently	150	100.0%
List of web resources on different subject useful for the faculty	116	77.3%
Wi-Fi facility may be connected in library to get information quickly or easy acces information	146	97.3%
Awareness about the latest e-books, e-journal, full text articles, online databases	140	93.3%
More terminals should be installed in the library for easy access to electronic resources for faculty & students	128	85.3%
Total	680	453.3%

Table 25 shows about suggestion and importance of information literacy skill for users of engineering colleges. In this study 150 respondent (100%) suggest about "The library should conduct periodical training programed for faculty member and student on how to use the e-resources effectively and efficiently ,second 146 (97.3%) Wi-Fi facility may be connected in library to get information quickly or easy access information, and 140 respondents (93.3%) Awareness about the latest e-books, e-journal, full text articles, online databases, and 128 respondents (85.3%) More terminals should be installed in the library for easy access to electronic resources for faculty & students, whereas 116 respondents (77.3%) List of web resources on different subject useful for the faculty

8. CONCLUSION

The above study shows clearly information literacy is very important skill and important role in all fields. but specially in engineering field faculty members aware and updating their existing knowledge regarding accessing, locating uses different kind of tools and services uses various type sources and resources, search strategies, to know about the copyright, fair use intellectual property right, and social issue legal issues know they should have continues updates their knowledge and skills of current information specific and general fields.

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