Information Literacy Skills of Female Engineering Graduates: A Spotlight Study

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Abstract

The purpose of this study is to examine the Information literacy skills of undergraduate female students of PSR engineering college, Virudhunagar District, Tamilnadu State. The present study is descriptive survey method. 170 female students were randomly selected. The results reveal that : The students are better skilled in identifying concepts & terms related to the information they need and recognizing the need for information to achieve a specific goal ; identifying the available search tools, such as general and subject specific resources at different level ; reading and downloading online material and data and communicating effectively using appropriate writing styles in a variety of formats. They are least skilled in selecting the most appropriate search tools; assessing the credibility of the data gathered ; creating appropriately formatted bibliographies ; constructing complex searchers appropriate to different print resources; selecting the most appropriate search tools and using background information and combining the existing information with original concept

Keywords

Websites; Tirunelveli District; Engineering College; Library; Content Analysis.

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1. INTRODUCTION

Engineering is a field that is fast developing as a result of scientific and technological advancement. The growth of digital information, the focus on lifelong learning, and the demand for highly skilled workers have highlighted the need for information-related competencies. Thus, engineering students need to be equipped with strong information literacy skills to succeed in their academic and future professional endeavors (Ramamurthy, Siridevi and Ramu, 2015).

1.1 What is Information Literacy?

The word 'Literacy' has been linked with cultural literacy, Information literacy, Library literacy, technological literacy and recently with digital literacy and multimedia literacy also. Information literacy is the ability to identify, evaluate, organize and use the information judiciously. According to American Library Association (2001), Information Literacy is a set of abilities requiring individuals to "recognize when information is in need and have the ability to locate, evaluate and use effectively the needed information". ALA also states that "Information Literacy is a survival skill in the information age". Information literacy forms the basis for lifelong learning. It is common to all disciplines, to all learning environment and to all levels of education.

2. REVIEW OF LITERATURE

Ramamurthy, Siridevi and Ramu (2015) investigated the knowledge of information literacy and search skills of students in five selected Engineering Colleges in Chittoor district, Andhrapradesh. study suggested the need for an enhanced and continuous library user education geared towards empowering students to be sufficiently familiar with information sources, mutual collaboration between teachers and librarians to ensure integrated mode of lecture delivery, constant advocacy and sensitization outreaches.Kumbar, Mallinath, Tejashwini and Kirankumar (2011) reported a study on Information literacy skills among engineering students of Sri Jayachamarajendra College of Engineering, Mysore.. The findings are: majority of students approached internet resources (39.55%), followed by journals (20.52%) and the least approached is reports (7.08%). The analysis of student's extent of awareness in copy right and citation concepts reveals that they are aware about this issue to a little extent 56(44.80%), followed by moderate 42(33.60%) extent and least percentage of students 27(21.60%) said that they are

well aware about the concept and apply in their day today information use behavior.

Ali, Hassan, Daud and Jusoff (2010) undertook a study to determine the Information literacy skills among the diploma level engineering students at a Malaysian college. Data were collected using a survey instrument. This study implies the importance of information literacy assessment as the first step in improving students' information skills. It also indicates the need to encourage students to use more scholarly electronic resources in their coursework. The study suggested the introduction of an intervention program to improve students' information literacy skills.Hart and Davids (2010) examined the information literacy intervention for first year engineering students at the Cape Peninsula University of Technology (CPUT). The research provides insight into how information literacy education at CPUT library can be improved. Its major recommendations are : more time in the time table must be allocated to information literacy education and that lecturers should recognize the educational role of librarians.Pattar and Kanamadi (2010) surveyed the information literacy programmes being provided at the engineering colleges in Navi Mumbai, India. The methods used for delivering IL classes are limited to brief introduction by lecture method and library tours. Web based instructions are not provided. Majority of libraries agree that ICT has had great influence on literacy programmes. Majority of libraries were not conducting any evaluation of these literacy programmes.

3. NEED AND SIGNIFICANCE OF THE STUDY

The engineering students need to be information literate. They should develop skills to locate, gather, evaluate, use and credit both print and online e-resources to their benefit. They may develop their information search, information retrieval, information evaluation and information use skills in various information sources available in engineering and allied courses. We need to undertake surveys periodically to measure the information literacy skills of engineering female students so as to enable us decide where they stand, what we expect in them and what gaps exist between these two extremes. This will help the management to take remedial measures and administrative decisions to emulate the engineering students to become better information literates to face the fast growing and challenging engineering education / profession.

4. PURPOSE OF THE STUDY

The purpose of the study is to know the information literacy skills of the undergraduate female students of the PSR Engineering College, Sevalpatti, Virudhunagar district, Tamilnadu.

5. OBJECTIVES OF THE STUDY

The researcher has set the following objectives for her study, inter alia :

- To elicit the socio-demographic information about the respondents
- To find out the frequency and purposes of library visits
- To measure the information literacy competencies of the respondents in
    - Identifying the need for information
    - Assessing the current knowledge and identifying gaps
    - Constructing strategies for locating information
    - Locating and accessing information needed
    - Reviewing, comparing and evaluating information
    - Organizing information professionally and ethically
    - Applying, presenting, synthesizing and disseminating information

6. HYPOTHESES

The researcher has set the following Hypothesis for her study, inter alia :

- There is no association between year of study and purposes of visiting the library.
- There is no significant difference between the nativity and the information literacy skills.
- There is no significant difference between the Year of study and the information literacy skills.

7. METHODOLOGY

The study undertaken by the researcher belongs to descriptive-cum-evaluative research study. The researcher has used sampling method in his survey study. The data required for the study was collected from primary as well as secondary sources. The primary data was collected from the engineering college students through questionnaires. The secondary data was collected from various books, periodicals, hand books, e-journals, conference proceedings, book chapters, theses, reports etc. A well structured questionnaire was designed to collect required data from the selected 170 respondents. The

questionnaire has 3 parts. Part A: Socio-demographic information of the respondents, Part B: Library visits and usage, Part C: Information Literacy Competency Assessment.

PSPP – a free and open source software was used for entering the data collected from the respondents. Statistical Package for Social Sciences (SPSS), Version 23.0 was used to analyze the data so prepared. Descriptive and inferential statistics have been applied to the data. The descriptive statistics enable us describe and summarize sets of data. But, the inferential statistics help generalize from a sample to a whole population and in testing hypothesis.
he researcher has used MS Excel and MS Word to create and format tables and charts required for the study.

8. DATA ANALYSIS AND INTERPRETATION

Table 8.1: Discipline –wise distribution of respondents

Discipline of the student	Frequency	Percentage
CSE & IT	77	45.3
EEE & ECE	93	54.7
Total	170	100

(Source: Primary data)

Table 8.1 explores the discipline- wise distribution of respondents. The disciplines are divided into two groups. The first group includes IT and CSE. The second group includes ECE and EEE. 77 (45.3%) of the respondents are from the IT and CSE group and the remaining 93 (54.7%) respondents are from ECE and EEE group.

Table 8.2: Year-wise distribution of respondents

Year of study	Frequency	Percentage
I & II	71	41.8
III & IV	99	58.2
Total	170	100

(Source: Primary data)

Table 8.2 shows the year wise distribution of respondents. The year of study is divided into two groups. The first and second year students belong to first group. Third and fourth year students belong to second group. 71 (41.8%) respondents belong to I & II year group and 99 (58.2%) respondents belong to III & IV year group.

Table 8.3: Nativity -wise distribution of respondents

Nativity	Frequency	Percentage
Rural	101	59.4
Urban	69	40.6
Total	170	100

(Source: Primary data)

Table 8.3 shows the nativity of the respondents. 101(59.4%) respondents belong to rural area followed by 69(40.6%) respondents who belong to urban area. It is inferred that majority of the respondents have hailed from rural areas.

Table 8.4 : Frequency of library visits

Frequency of Library Visit	Year of Study			
	I & II	%	III & IV	%
Daily	08	11.3	11	11.1
Weekly	42	59.2	83	83.8
Fortnightly	04	05.6	05	05.1
Occasionally	17	23.9	00	00.0
Total	71	100	99	100

(Source: Primary data)

Table 8.4 discloses the frequency of library visit of the respondents. Majority of the respondents (125) visit the library weekly. It is followed by 19 respondents who visit the library daily and 17 respondents who visit the library occasionally. Just 9 respondents visit the library once in a fortnight. This indicates that majority of the respondents visit the library weekly.

Table 8.5 : Purpose of visiting the library

Purposes of Visiting the Library	Discipline of the Student			
	CSE & IT	%	ECE & EEE	%
Borrowing Book	13	16.9	20	21.5
Surfing Internet	18	23.4	18	19.4
Academic Purposes	28	36.4	36	38.7
Light Reading	18	23.4	19	20.4

(Source: Primary data)

The table 8.5 shows the purposes of visiting the library. Out of the 170 respondents, 64 respondents visit the library for academic purposes. While 36

respondents visit the library for surfing internet, 33 respondents visit the library for borrowing books and 27 respondents visit the library for light reading. Majority of the students from both groups visit the library for the academic purposes.

Table 8.6 : Identification of Need for Information

Statement	Nativity				Overall	
	Rural		Urban			
	WAM	Rank	WAM	Rank	WAM	Rank
I can identify a lack of knowledge in my subject area	2.15	IV	1.97	VI	2.08	V
I can identify a search topic & define it using simple terms	2.16	III	2.14	II	2.15	II
I can identify concepts & terms related to the information I need	2.16	III	2.23	I	2.19	I
I recognize a need for information to achieve a specific goal	2.23	I	2.14	II	2.19	I
I can modify the need for information in search process	2.09	V	2.12	III	2.10	IV
I can use the background information	2.09	V	2.03	V	2.06	VI
I can manage time effectively to complete a search	2.18	II	2.07	IV	2.14	III
I recognize that existing information can be combined with original concept	2.09	V	2.03	V	2.06	VI

(Source: Primary data)

Rural Background

The rural students are better skilled at recognizing the need for information to achieve a specific goal with a WAM of 2.23 followed by skills to manage time effectively to complete a search with a WAM of 2.18. They are moderately skilled at identifying the search topics and defining them with simple terms and identifying concepts and terms related to the information they need with a WAM of 2.16. They are least skilled in identifying the lack of knowledge in their subject area (WAM of 2.15) followed by the skills to modify the need for information, use background information and combine the existing information with original concept (WAM of 2.09).

Urban Background

The urban students are better skilled at identifying concepts and terms related to the information they need (WAM of 2.23) followed by the skills to recognize the need for information to achieve a specific goal, identifying the search topics and defining them with simple terms (WAM of 2.14) and the skills to modify the need for information in search process (WAM of 2.12). They are moderately skilled at managing time effectively to complete a search (WAM of 2.07) followed by the ability to use the background information, combine the existing information with original concept (WAM of 2.03). They are least skilled in identifying lack of knowledge in their subject area (WAM of 1.97).

Overall Analysis

The students are better skilled in identifying concepts & terms related to the information they need and recognize a need for information to achieve a specific goal (WAM of 2.19). They are least skilled in using background information and combining the existing information with original concept (WAM of 2.06).

Table 8.7 : Assessment of Current knowledge and Identification of Gaps

Statement	Year of study				Overall	
	I & II Year		III & IV Year			
	WAM	Rank	WAM	Rank	WAM	Rank
I Know what I don't	2.07	III	2.12	III	2.10	III
I can identify which types	2.17	I	2.10	IV	2.13	II
I can Identify the available search tools,	2.15	II	2.17	II	2.16	I
I can identify different	2.06	IV	2.18	I	2.13	II
I can demonstrate the ability to	2.01	V	2.10	IV	2.06	IV

(Source: Primary data)

I & II Year Students

I & II year students are better skilled at identifying which types of information will best meet their information need (WAM of 2.17) followed by the skills to identify the available search tools such as general and subject specific resources at different level (WAM of 2.15). They are moderately skilled at knowing what they don't know to identify any information gap (WAM of 2.07) followed by the skills to identify different formats in which information may be provided (WAM of 2.06). They are least skilled in using new tools as they become available (WAM of 2.01).

III & IV Year Students

III & IV year students are most skilled at identifying different formats in which information may be provided with a WAM of 2.18 followed by the skills to identify the available search tools, such as general and subject specific resources at different level (WAM of 2.17). They are moderately skilled at knowing what they don't know to identify any information gap (WAM of 2.12). They are least skilled at identifying which types of information will best meet their information need (WAM of 2.10) followed by the skills to use new tools as they become available (WAM of 2.10)

Overall Analysis

Majority of students are better skilled at identifying the available search tools, such as general and subject specific resources at different level (WAM of 2.16). They are least skilled to use new tools as they become available (WAM of 2.06).

Table 8.8 : Construction of Strategies for Locating Information and Data

Statement	Discipline				Overall	
	CSE & IT		ECE & EEE			
	WAM	Rank	WAM	Rank	WAM	Rank
I can define the scope of search question clearly and in appropriate	2.18	II	2.27	I	2.23	I
I can define a search strategy by using appropriate keywords and concepts, defining and setting limits	2.16	III	2.09	IV	2.12	III
I can select the most appropriate search tools	2.14	IV	2.05	V	2.09	V
I can identify controlled vocabularies and taxonomies to aid in searching if appropriate	2.19	I	2.14	II	2.16	II
I can identify appropriate search techniques to use as necessary	2.14	IV	2.09	IV	2.11	IV
I can identify specialist search tools appropriate to each individual information need	2.09	V	2.13	III	2.11	IV

(Source: Primary data)

CSE & IT discipline Students

CSE & IT students are better skilled at identifying controlled vocabularies and taxonomies to aid in searching if appropriate (WAM of 2.19) followed by the skills to define the scope of search questions clearly in appropriate language (WAM of 2.18). They are moderately skilled in defining search strategy by using appropriate keywords and concepts, defining and setting limits (WAM of 2.16) followed by the skills to select the most appropriate search tools, and identify appropriate search techniques to use as necessary (WAM of 2.14). They are least skilled in identifying specialist search tools appropriate to each individual information need (WAM of 2.13).

ECE & EEE discipline Students

ECE & EEE discipline students are most skilled at defining the scope of search questions clearly in appropriate language (WAM of 2.27). They are moderately skilled at identifying controlled vocabularies and taxonomies to aid in searching if appropriate (WAM of 2.14), identifying specialist search tools appropriate to each individual information need (WAM of 2.13) followed by the skills to define search strategy by using appropriate keywords and concepts, define and set limits and identify appropriate search techniques to use as necessary (WAM of 2.09). They are least skilled in selecting the most appropriate search tools (WAM of 2.05).

Overall Analysis

Majority of students are better skilled at defining the scope of search questions clearly in appropriate language (WAM of 2.23). They are least skilled in selecting the most appropriate search tools (WAM of 2.09).

Table 8.9 : Locating and Accessing of Information and Data Needed

Statement	Nativity				Overall	
	Rural		Urban			
	WAM	Rank	WAM	Rank	WAM	Rank
I can use a range of retrieval tools and resources effectively	2.19	III	2.16	II	2.18	II
I can construct complex searches appropriate to different digital resources	2.08	VII	1.97	IX	2.04	X
I can construct complex searches appropriate to different print resources	2.18	IV	2.03	VI	2.12	V
I can access full text information (both print and digital)	2.12	V	2.00	VIII	2.07	VII
I can read and download online material and data	2.21	I	2.20	I	2.21	I
I can use appropriate techniques to collect new data	2.20	II	2.13	III	2.17	III
I can keep up –to-date with new information	2.08	VII	2.10	IV	2.09	VI
I can identify when the information need has not been met	2.08	VII	2.01	VII	2.05	IX
I can use online and printed help	2.20	II	2.07	V	2.15	IV
I can find personal and expert help	2.11	VI	2.00	VIII	2.06	VIII

(Source: Primary data)

Rural Background

The rural students are better skilled at reading and downloading online material and data (WAM of 2.21) followed by the skills to use appropriate techniques to collect new data, use online and printed help to locate and access required information (WAM of 2.20) and use a range of retrieval tools and resources effectively (WAM of 2.19). They are moderately skilled at constructing complex searchers appropriate to different print resources (WAM of 2.18), accessing full text information -both print and digital (WAM of 2.12) and finding personal and expert help to get required information (WAM of 2.11). They are least skilled at constructing complex searchers appropriate to different digital resources, keeping up-to-date with new information and identifying when the information need has not been met (WAM of 2.08).

Urban Background

The urban students are better skilled at reading and downloading online material and data (WAM of 2.20) followed by the skills to use a range of retrieval tools and resources effectively (WAM of 2.16), use appropriate techniques to collect new data (WAM of 2.13) and keep up-to-date with new information (WAM of 2.10). They are moderately skilled at using online and printed help to locate and access required information (WAM of 2.07) followed by the skills to construct complex searchers appropriate to different print resources (WAM of 2.03) and to identify when the information need has not been met (WAM of 2.0). They are least skilled in accessing full text information (both print and digital), finding personal and expert help to get required information (WAM of 2.00) followed by the skills to construct complex searchers appropriate to different print resources (WAM of 1.97).

Overall Analysis

Majority of students are better skilled in reading and downloading online material and data (WAM of 2.21). They are least skilled at constructing complex searchers appropriate to different print resources (WAM of 2.08).

Table 8.10 : Reviewing, Comparing and Evaluating Information and Data

Statement	Year of study				Overall	
	I & II Year		III & IV Year			
	WAM	Rank	WAM	Rank	WAM	Rank
I can distinguish between different information resources and the information they provide	2.13	III	2.22	III	2.18	III
I can choose suitable material on their search topic, using appropriate criteria	2.14	II	2.28	I	2.22	I
I can assess the quality accuracy, relevance, bias, reputation and credibility of the information resources found	2.08	V	2.23	II	2.17	IV
I can assess the credibility of the data gathered	2.07	VI	2.13	VI	2.11	VI
I can read critically, identifying key points and arguments	2.11	IV	2.15	V	2.14	V
I can relate the information found to the original search strategy	2.15	I	2.21	IV	2.19	II
I can critically appraise and evaluate my own finding and those of others	2.13	III	2.22	III	2.18	III
I know when to stop	2.13	III	2.22	III	2.18	III

(Source: Primary data)

I & II Year Students

I & II year students possess highest skills to relate the information found to the original search strategy (WAM of 2.15), choose suitable materials on their search topic, using appropriate criteria (WAM of 2.14), distinguish between different information resources and the information they provide, know when to stop their information search and retrieval process and critically appraise and evaluate their won findings and those of others (WAM of 2.13). They have mediocre skills to read critically identifying key points and arguments (WAM of 2.11) and assess the quality, accuracy, relevance, bias, reputation and credibility of the information resources found (WAM of 2.08). They have lowest skills to assess the credibility of the data gathered (WAM of 2.07).

III & IV Year Students

III & IV year students possess highest skills to choose suitable materials on their search topic, using appropriate criteria (WAM of 2.28) followed by the skills to assess the quality, accuracy, relevance, bias, reputation and credibility of the information resources found (WAM of 2.23). They have mediocre skills to critically appraise and evaluate their own findings and those of others, know when to stop their information search and retrieval process and distinguish between different information resources and the information they provide (WAM of 2.22) followed by the skills to relate the information found to the original search strategy (WAM of 2.21). They have lowest skills to read critically identifying key points and arguments (WAM of 2.15) and assess the credibility of the data gathered (WAM of 2.13).

Overall Analysis

Majority of students are better skilled in choosing suitable materials on their search topic, using appropriate criteria (WAM of 2.22). They are least skilled in assessing the credibility of the data gathered (WAM of 2.11).

Table 8.11 : Organizing Information Professionally and Ethically

Statement	Discipline				Overall	
	CSE & IT		ECE & EEE			
	WAM	Rank	WAM	Rank	WAM	Rank

I can use bibliographical software (Zotero, Mendely etc) if appropriate to manage information	2.19	I	2.09	III	2.14	I
I can cite printed sources using suitable referencing styles like APA, MLA, Chicago, IEEE etc.	2.09	V	2.02	VII	2.05	V
I can cite electronic sources using suitable referencing styles like APA, MLA, Chicago, IEEE etc.	2.04	VI	2.08	IV	2.06	IV
I can create appropriately formatted bibliographies	2.09	V	1.98	VIII	2.03	VI
I can demonstrate awareness of issues relating to the rights of others including ethics, data protection, copyright and any other intellectual property issues	2.17	II	2.03	VI	2.09	III
I know what is plagiarism and its implication	2.09	V	2.13	I	2.11	II
I meet standards of conduct for academic integrity	2.13	III	2.10	II	2.11	II
I can use appropriate data management software and techniques to manage data (like SPSS, Excel, PSPP, SOFA Stat, R etc.)	2.12	IV	2.06	V	2.09	III

(Source: Primary data)

CSE & IT discipline Students

The CSE & IT students are better skilled in using bibliographical software (Zotero, Mendely etc) if appropriate to manage information (WAM of 2.19), demonstrating awareness of issues relating to the rights of others including ethics, data protection, copyright and any other intellectual property issues (WAM of 2.17) and meeting the standards of conduct for academic integrity (WAM of 2.13). They are moderately skilled at using appropriate data management software and techniques to manage data like SPSS, Excel, PSPP, SOFA Stat, R etc. (WAM of 2.12) and citing printed sources using suitable referencing styles like APA, MLA, Chicago, IEEE etc., creating appropriately formatted bibliographies and knowing what is plagiarism and its implications (WAM of 2.09). They are least skilled at citing electronic sources using suitable referencing styles like APA, MLA, Chicago, IEEE etc (WAM of 2.04).

ECE & EEE discipline Students

The ECE & EEE students are better skilled in the concepts of plagiarism and its implications (WAM of 2.13) followed by the skills to meet standards of conduct for academic integrity (WAM of 2.10) and use bibliographical software (Zotero, Mendely etc) if appropriate to manage information (WAM of 2.09). They are moderately skilled at citing electronic sources using suitable referencing styles like APA, MLA, Chicago, IEEE etc (WAM of 2.08), using appropriate data management software and techniques to manage data like SPSS, Excel, PSPP, SOFA Stat, R etc. (WAM of 2.06) and demonstrating awareness of issues relating to the rights of others including ethics, data protection, copyright and any other intellectual property issues (WAM of 2.03). They are least skilled at citing printed sources using suitable referencing styles like APA, MLA, Chicago, IEEE etc (WAM of 2.02) and creating appropriately formatted bibliographies (WAM of 1.98).

Overall Analysis

Majority of students are better skilled at using bibliographical software (Zotero, Mendely etc) if appropriate to manage information (WAM of 2.14). They are least skilled at creating appropriately formatted bibliographies (WAM of 2.03).

Table 8.12 : Application, Presentation, Synthesis and Dissemination of Information

Statement	Nativity				Overall	
	Rural		Urban			
	WAM	Rank	WAM	Rank	WAM	Rank

I can use the information and data found to address the original question	2.25	II	2.12	II	2.19	I
I can summarize documents and reports verbally and inn writing	2.10	VIII	1.94	VIII	2.04	VII
I can incorporate new information into the context of existing knowledge	2.15	V	2.10	III	2.13	V
I can analyze and present data appropriately	2.19	III	2.07	V	2.14	IV
I can synthesize and appraise new and complex information from different sources	2.16	IV	2.16	I	2.16	II
I can communicate effectively using appropriate writing styles in a variety of formats	2.27	I	1.97	VII	2.15	III
I can communicate effectively verbally	2.12	VII	2.00	VI	2.07	VI
I can select appropriate publications and dissemination outlets in which to publish if appropriate	2.14	VI	1.97	VII	2.07	VI
I can develop a personal profile in the community using appropriate personal networks and digital technologies (e.g. discussion lists like whatapps, social networking sites like facebook, blogs etc.)	2.16	IV	2.09	IV	2.13	V

(Source: Primary data)

Rural Background

The rural students possess better skills to communicate effectively using appropriate writing styles in a variety of formats (WAM of 2.27) followed by the skills to use the information and data found to address the original question (WAM of 2.25) and analyze and present data appropriately (WAM of 2.19). They have mediocre skills to synthesize and appraise new and complex information from different sources, develop personal profiles using appropriate personal network and digital technologies (WAM of 2.16), to incorporate new information into the context of existing knowledge (WAM of 2.15) and to select appropriate publications and disseminate outlets in which to publish if appropriate (WAM of 2.14). They possess lowest skills to communicate effectively verbally (WAM of 2.12) and to summarize documents and reports verbally and in writing (WAM of 2.10).

Urban Background

The urban students are better skilled at synthesizing and appraising new and complex information from different sources (WAM of 2.16), using the information and data found to address the original question (WAM of 2.12) and incorporating new information into the context of existing knowledge (WAM of 2.10). They are moderately skilled at developing personal profiles using appropriate personal network and digital technologies (WAM of 2.09) and analyzing and presenting data appropriately (WAM of 2.07). They are least skilled at communicating effectively verbally (WAM of 2.00), communicating effectively using appropriate writing styles in a variety of formats, selecting appropriate publications and disseminating outlets in which to publish if appropriate (WAM of 1.97) and summarizing documents and reports verbally and in writing (WAM of 1.94).

Overall Analysis

Majority of the students are better skilled at communicating effectively using appropriate writing styles in a variety of formats (WAM of 2.19). They are least skilled at summarizing documents and reports verbally and in writing (WAM of 2.04).

Hypothesis

Hypothesis: There is no significant difference between the nativity / Year of study and the information literacy skills

Nativity Vs Information Literacy Skills

Table 8.13: Descriptive Statistics

Group Statistics						
SCONUL Pillars	**Information Literacy Skills**	Nativity	N	Mean	Std. Deviation	Std. Error Mean
IDENTIFY	Identification of need for information	Rural	101	17.1386	2.30664	.22952
		Urban	69	16.7391	2.54750	.30668
SCOPE	Assessment of Current Knowledge and Identification of Gaps	Rural	101	10.7228	1.48404	.14767
		Urban	69	10.3913	1.62894	.19610
PLAN	Construction of strategies for locating information and data	Rural	101	12.8812	1.97630	.19665
		Urban	69	12.7536	1.85826	.22371
GATHER	Location and Accessing of information and data needed	Rural	101	23.6634	3.51647	.34990
		Urban	69	22.6667	3.89444	.46884
EVALUATE	Reviewing, Comparing and Evaluating information and data	Rural	101	17.7327	2.49356	.24812
		Urban	69	16.8406	2.96362	.35678
MANAGE	Organising Information professionally and ethically	Rural	101	16.9703	2.98481	.29700
		Urban	69	16.2609	2.72598	.32817
PRESENT	Application, Presentation, Synthesis and Dissemination of Information	Rural	101	19.5248	3.00863	.29937
		Urban	69	18.4203	3.02638	.36433

Table 8.13 gives descriptive statistics showing the number, mean, standard deviation and standard error mean for all the 7 pillars of information literacy.

Table 8.13a: Independent Samples‘t’ Test

Independent Samples Test										
SCONUL Pillars	Levene's Test for Equality of Variances			t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
IDENTIFY	EVA	.353	.553	1.063	168	**.289**	.39948	.37594	-.34270	1.1416
	EVNA			1.043	136.406	.299	.39948	.38306	-.35802	1.15698
SCOPE	EVA	.047	.829	1.374	168	**.171**	.33147	.24120	-14471	.80764
	EVNA			1.350	137.022	.179	.33147	.24548	-15396	.81689
PLAN	EVA	.133	.715	.423	168	**.673**	.12756	.30134	-.46734	.72247
	EVNA			.428	151.983	669	.12756	.29785	-.46090	.71603
GATHER	EVA	.534	.466	1.737	168	**.084**	.99670	.57385	-.13618	2.12958
	EVNA			1.704	136.129	.091	.99670	.58501	-.16019	2.15358

EVALUATE	EVA	.398	.529	2.120	168	.035	.89209	.42072	.06152	1.72267
	EVNA			2.053	129.140	.042	.89209	.43457	.03229	1.75190
MANAGE	EVA	.131	.718	1.576	168	**.117**	.70943	.45026	-.17946	1.59832
	EVNA			1.603	154.521	.111	.70943	.44261	-.16492	1.58378
PRESENT	EVA	.149	.700	2.345	168	.020	1.10446	.47103	.17457	2.03436
	EVNA			2.342	145.668	.021	1.10446	.47155	.17249	2.03643

Note. EVA = Equal variances assumed EVNA = Equal variances not assumedTable 8.13a shows the result of Levene' statistics and t-test.

The Levene's Test for Equality of Variances shows that the p value is more than 0.05 for all the seven information literacy skills. So, the null hypothesis is accepted. There is no variation between the groups. So, we have to look for the results of t test under the column Equal Variance Assumed for the results.

The p-value of the t-test for the information literacy skills - Identify, Scope, Plan, Gather and Manage - are more than 0.05. Thus, the null hypothesis is accepted. There is no significant difference between the nativity of the respondents and these information literacy skills.

The p-value of the t-test for the information literacy skills –Evaluate and Present - are less than 005. Thus, the null hypothesis is rejected. There is a statistically significant difference between the nativity of the respondents and these two information literacy skills.

Year of study *Vs* Information Literacy Skills

Table 8.14 : Descriptive Statistics

Group Statistics						
SCONUL Pillars	**Information Literacy Skills**	Year of study	N	Mean	Std. Deviation	Std. Error Mean
IDENTIFY	Identification of need for information	I & II Year	71	16.4225	2.55042	.30268
		III & IV Year	99	17.3737	2.22961	.22408
SCOPE	Assessment of Current Knowledge and Identification of Gaps	I & II Year	71	10.4648	1.42258	.16883
		III & IV Year	99	10.6768	1.63400	.16422
PLAN	Construction of strategies for locating information and data	I & II Year	71	12.6761	1.72191	.20435
		III & IV Year	99	12.9394	2.05941	.20698
GATHER	Location and Accessing of information and data needed	I & II Year	71	23.2535	3.03653	.36037
		III & IV Year	99	23.2626	4.11960	.41404
EVALUATE	Reviewing, Comparing and Evaluating information and data	I & II Year	71	16.9437	2.65592	.31520
		III & IV Year	99	17.6768	2.73984	.27536
MANAGE	Organising Information professionally and ethically	I & II Year	71	16.5352	2.87268	.34092
		III & IV Year	99	16.7879	2.92167	.29364
PRESENT	Application, Presentation, Synthesis and Dissemination of Information	I & II Year	71	19.0986	3.07132	.36450
		III & IV Year	99	19.0606	3.06001	.30754

Table 14 gives descriptive statistics showing the number, mean, standard deviation and standard error mean for all the 7 pillars of information literacy.

Table 8.14a : Independent Samples 't' Test

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
SCONUL Pillars		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
IDENTIFY	EVA	.616	.434	-2.582	168	**.011**	-.95120	.36835	-1.67840	-.2240
	EVNA			-2.526	138.124	.013	-.95120	.37660	-1.69585	-.2065
SCOPE	EVA	3.237	.074	-.880	168	.380	-.21198	.24096	-.68768	.26372
	EVNA			-.900	161.719	.369	-.21198	.23553	-.67708	.25312
PLAN	EVA	3.374	.068	-.879	168	.381	-.26334	.29952	-.85465	.32798
	EVNA			-.905	164.004	.367	-.26334	.29086	-.83765	.31098
GATHER	EVA	7.262	.008	-.016	168	.987	-.00911	.57650	-1.14722	1.12901
	EVNA			-.017	167.857	.987	-.00911	.54890	-1.09274	1.07453
EVALUATE	EVA	3.025	.084	-1.743	168	.083	-.73311	.42070	-1.56365	.09744
	EVNA			-1.752	153.682	.082	-.73311	.41854	-1.55994	.09372
MANAGE	EVA	.131	.718	-.560	168	.576	-.25267	.45121	-1.14344	.63811
	EVNA			-.562	152.453	.575	-.25267	.44995	-1.14161	.63627
PRESENT	EVA	.090	.765	.080	168	.937	.03799	.47662	-.90294	.97891
	EVNA			.080	150.618	.937	.03799	.47691	-.90431	.98028

Table 8.14a shows the result of Levene' statistics and t-test.

The Levene's Test for Equality of Variances shows that the p value is more than 0.05 for all the seven information literacy skills. So, the null hypothesis is accepted. There is no variation between the groups. So, we have to look for the results of t test under the column Equal Variance Assumed for the results.

The p-value of the t-test for the information literacy skills - Scope, Plan, Gather, and Evaluate, Manage and Present - are more than 0.05. Thus, the null hypothesis is accepted. There is no significant difference between year of study of the respondents and these information literacy skills.

The p-value of the t-test for the information literacy skill – Identify – is less than 005. Thus, the null hypothesis is rejected. There is a statistically significant difference between the year of study of the respondents and this particular information literacy skill.

Hypothesis: There is no association between year of study and purposes of visiting the library

Table 8.15: Chi-Square Analysis of Purposes of Visiting the Library Vs. Year of Study

Purposes of Visiting the Library * Year of				
		Year of Study		
		I & II	III &	Total

Borrowing Books	Count	15	18	33
	%	21.1%	18.2%	19.4%
Surfing Internet	Count	8	28	36
	%	11.3%	28.3%	21.2%
Academic Purposes	Count	32	32	64
	%	45.1%	32.3%	37.6%
Light Reading	Count	16	21	37
	%	22.5%	21.2%	21.8%
Total	Count	71	99	170
	%	100%	100%	100%

Table 8.15a: Chi-Square Result

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.655[a]	3	.054
N of Valid Cases	170		

Tables 8.15a shows that p-value is (0.054) more than the significant level of 0.05. So, null hypothesis is accepted. Thus, there is no significant association between the year of study of engineering students and the purposes of their library visits.

9. SUGGESTIONS

The researchers have suggested the following measures to improve the information literacy skills of the female engineering students.

- Conduct of seminars, workshops and conferences on information literacy skills.
- Invited talks of external experts on information literacy skills.
- Provision of online tutorials on information literacy competencies
- Week-end demos on use of various information sources and services
- Special orientation classes may be organized on the user of appropriate search tools and techniques, controlled vocabularies etc.
- The student should be taught very practically the use of various referencing styles like APA, MLA, IEEE. MALA etc.
- The importance of acknowledging the works of others is to be instilled in their minds. Plagiarism check may be introduced in th

10. CONCLUSION

Information literacy is the basic need of everyone in the modern technological era because every day there is a new technological challenge coming out of the engineering department. Therefore, the students need literacy skills so that they can recognize their 'information needs, locate and evaluate the quality of information, store and retrieve information, make effective and ethical use of information' for their future perspectives (IFAP, 2008).

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