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Winter 1-13-2020

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Zeeshan, Muhammad; Idrees, Haroon; and Siddique, Nadeem, "Information literacy skills among students of Lahore University of Management Sciences (LUMS)" (2020). *Library Philosophy and Practice (e-journal)*. 3866.

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Information literacy skills among students of Lahore University of Management Sciences (LUMS)

Introduction

The revolutionary growth in the information has affected almost every field of life. Information literacy is considered an essential component of library and information studies. There are myriad hitches in identifying information need, authentic sources, retrieval, assessment and utilization of the required information. In the age of information explosion, researchers, students, and other information seekers confront ample of issues in ensuring the ease of use, dependability, and authenticity of the information and its resources while conducting their projects. Various definitions and concepts, models and standards of information literacy have been presented by different authors, information organizations and associations. An information literate person requires knowing how to clearly define need of information; a subject or area of investigation; select appropriate terminology that expresses the concept under investigation; formulate a search strategy that takes into consideration different information sources and various ways the information is organized in; analyze the data collected for value, relevancy, quality and suitability; and subsequently turn them into knowledge (Annet Kinengyere, 2007)

Students can enhance their scholastic accomplishments regarding grade point average (GPA) alongside real skills by making a successful utilization of library and its assets. To do this, they have to take in the utilization of the library and its resources, consult library staff to examine their data needs, and use library resources effectively with no worry or negative emotions.

Information literacy (IL) perceived as the nuts and bolts for learning. IL has become a crucial part of the latest research and knowledge. The skills of Information literacy are considered highly important for students and researchers to seek information that could cater their academic and research needs, it plays a vital role in the need assessment, access, use, and management of information. With advanced technological era, access to information is becoming more complex (Bruce, 2004)

Jan, Anwar, and Warraich (2016) described that the main purpose of the academic libraries is to support teaching, learning and research activities. It is possible by providing access to the mandatory information and related resources. Libraries can play a vital role in students' learning and students' performance towards their studies.

Information literacy (IL) is generally seen as pivotal to the pursuit of lifelong learning and central to achieving both personal empowerment and economic development. Bruce (2004) also explained about information literacy:

Information literacy is conceivably the foundation for learning in our contemporary environment of continuous technological change. As information and communication technologies develop rapidly, and the information environment becomes increasingly complex, educators recognize the needs for learners to engage with the information environment as part of their formal learning processes. IL is generally seen as important to the pursuit of lifelong learning, and entral to achieving both personal empowerment and economic development (Bruce, 2004).

Naveed and Rafique (2018) discussed the information literacy term usually defined as a skill to set the need of information, how to locate desired information and its assessment, currency, and authenticity, then use the information in decision making.

Bruce (2004) emphasized that information literacy training is the core objective of information society into modern society. Ranaweera (2008) portrayed information literacy as an arrangement of abilities which empowers an individual to investigate access, analyze and use information. Information literacy is strongly concerned with learning, in-depth thinking, and to learn concepts of information right from its commencement and for the duration of its life cycle. Batool and Mahmood (2016) depicted in their study that information literacy can be improved through proper training and facilities infrastructure at the school level. Ullah and Ameen (2014) recommended that it is necessary to join hands with faculty to integrate IL instructional programme, to educate IL in all aspects of information. In another study, Ameen and Ullah (2016) shared their findings that good information literacy programmes are playing an important role in student's efficiency and their independence in getting the information. Information professional can play a leading role in the development of literacy programme. They emphasized on adding information literacy in the LIS curriculum. Karim and Hussein (2008) claimed that these days information plays a vital role in any decision making process to improve the efficiency of work like others assets such as financial matters and other machinery.

The present study has been conducted with the purpose to identify the status of information literacy among students of the LUMS. LUMS is a well renowned educational institute of Pakistan. There are various schools that are working under the umbrella of LUMS. The schools offer undergraduate and postgraduate level education in various disciplines, i.e., Law, Education, Engineering, Management & Social Sciences, Information Technology and Basic Sciences. LUMS is trying its best to facilitate its students as well as faculty to meet their educational needs. Information literacy is an area that the researchers are taking an interest in and working on, throughout the world. Plenty of research on IL skills has been conducted in the developing world along side developed world. LUMS is trying its best to facilitate the students in gaining quality education. LUMS library organizes training, workshops, seminars, and other awareness sessions to enhance the students' knowledge regarding various areas of information and technology. Nonetheless, it is being done without assessing the perception and existing level of IL skills of the students. This study is very important to be selected as a problem for assessing the students' existing skills and determining need of the IL program. This study focused on assessing the existing IL skills of students as well as finding grey areas that need to be addressed and improved. It includes problems in promoting the IL skills and solutions to remove problems, need and importance of IL program, and role of LIS professionals in the implementation of the IL program concerning LUMS environment.

Literature review

The expression of information literacy (IL) initially showed up in the early 70s. Zurkowski (1974) utilized the expression to depict the "techniques and skills" known by the information literate. Various definitions, concepts, models and standards of information literacy have been presented by different authors, information organizations and associations. Among these authors Bawden (2001) and Virkus (2003) have described in details the various concepts related to the topic. Gorman (2003) emphasized that the fast growth of information resources on the internet makes it important for people to be information literate. Limberg, Sundin, and Talja (2012) portrayed that Information Literacy is generally characterized as the capacity of an individual to discover, make a choice, assessment, and use of the information for solutions of the problems.

In the customary concept, an individual is considered “educated” who is able to read and write. In the setting of current times, information literacy can be sorted in different types i-e, as audiovisual literacy, print literacy, computer literacy, media literacy, web literacy, technical literacy, functional literacy, library literacy, and information literacy. Information literacy is the blend of all the above ideas. With the advancement of technology, information is becoming more complex. Educators feel the need of learning to engage them in dealing with the information along with other learning processes. Information literacy as an arrangement of aptitudes which empowers an individual to investigate access, analyze and use information. Information literacy is strongly concerned with learning, in-depth thinking, and to learn concepts of education (Ranaweera, 2008). In a study, Probert (2009) revealed that there was misconstruing about the idea of information literacy among the students. A few students (27) took information literacy as ICT (Information Communication and Technology) and considered that both terms are the same, whereas exactly (25%) were not sure about both concepts.

Warschauer (2007) directed a study on "Information Literacy in the Laptop Classroom" and expressed that it has become important to build up the information literacy abilities of the students also particularly, on account of the technological changes. Probert (2009) orated that teachers and students have very little awareness about information literacy. Information literacy assumes an essential part in the development of the students' research abilities. It is important that the research aptitudes of the students should also be developed (Singh, 2005).

California State University offers courses of IL to their students. These courses concentrats on the research, writing and searching of various contents from the web. Participants of the courses showed more enthusiasm for the courses which was incorporated with their subjects. Thus, it can be reasoned that subject particularly IL courses can be more helpful as compared with the general contents (Barbour, Gavin, & Canfield, 2004)

Faculty and library professional can play piovtal role in the enhancement of students' information literacy skills. Sessions in regards to library guidelines need to be more frequent, and LIS experts can also create better results. The material should be given on the web to encourage the students in the library instruction sessions (Brown & Krumholz, 2002). LIS experts are the focal persons who can play their part in the development of the curriculum module for IL (Wang, 2010).

In Pakistan, researchers, educators and LIS professionals showed their interest in the idea of information literacy. In the beginning of 2008, Library and Information science department at University of the Punjab first time in the history of the subject introduced a comprehensive IL programme. Initially in 2009, six-credit hours course was offered on IL and curriculum was also revised by Higher Education Commission (HEC) of Pakistan (Ullah & Ameen, 2014). Review of literature reveals only a few studies related to IL in Pakistan and the most ignored area in IL is school level (Batoool & Mahmood, 2016; Batoool & Webber, 2016). Anwar (2014) claims in his study that only a single study has been conducted at the college level, which focused on IL instruction in Pakistan.

Rafique (2014) described that library professionals and faculty jointly conducted a meeting to plan IL session for students to effectively use information. The students should be train to authenticate the source of information for its reliability. Ullah and Ameen (2014) insisted that librarians should take the responsibility of offering information literacy instructions to the students. Bhatti (2012) examined 10 universities in Pakistan to assess their state of user-education programs and found that only 40% libraries offered proper user education programs to their students. More focus of the libraries were on providing orientations and library tours to the

new entrants. Naveed and Rafique (2018) conducted a study of M. Ed. Students by using pretest and posttest tool and reported the significant impact of the training. Students highlighted the issues faced and training improved their skills. In his study, Mahmood (2016) exposed that students of University of the Punjab possessed basic computer and internet skills and recommended training regarding searching techniques for the students. He further suggested that such instruction programs should be designed for students at all levels of Pakistan. Rafique and Khan (2018) conducted a study of undergraduate and graduate students of two universities of Lahore and reported that the students preferred online resources instead of visiting library. In this study, the students claimed that they had sufficient skills to recognize and describe the required information but the study recommended IL training for the students to become lifelong learners in accessing, analyzing, organizing and using for their future needs.

LIS experts have highlighted some major problems regarding IL. Lack of interest among students in information literacy contents is a problem for the success of information literacy. Similarly, lack of awareness about the information literacy is another issue, and a standout amongst the issue is nonappearance of cooperation among librarians and teachers (Varlejs & Stec, 2014). The poor information literacy aptitudes of the academicians are also an issue. The poor training evaluation strategies, LIS experts' absence of energy to impact educational program and their lack of instructive preparing are also among the issues in teaching the information literacy contents effectively (Johnston & Webber, 2003). There is no committed information literacy strategy to guide information literacy practices. The absence of systematic orientation methods for students about libraries resources and its services (Fidzani, 1998). Lwehabura and Stilwell (2008) finally described that there is a lack of mindfulness among students about the information literacy sessions on offer. Other challenges that weaken the effectiveness of imparting IL knowledge and skills are the absence of proactive approach of librarians, lack of partnerships between librarians and teaching staff to streamline IL and convenience of resources.

It is evident from the review of related literature that information literacy is among the areas of interest of the current era. Research studies highlighted that students possessed poor IL skills. They faced problems while accessing, using, and managing the information. There is a need to equip the students with these skills to meet the educational needs of the current age. Role of faculty, administration, and LIS professionals is very important in the implementation of the IL program.

Statement of the problem

Nowadays, information literacy skills are considered highly important for the students to seek information that could cater to their academic and research endeavors. IL skills play a vital role in the need assessment, access, use, and management of information. Research studies on need and importance of IL skills/program are being conducted around the globe. However, there are only a few studies on IL that have been conducted in Pakistan for undergraduate students. Therefore, there is a dire need to conduct a study to assess the existing information literacy skills of the students of LUMS so that students can be equipped with whatever is needed to meet their modern educational needs. It is a starting point to identify the need and importance of the IL

program. It would lead to replication of this study in other parts of the country. This research will provide a fruitful insight for policy makers especially library professional to reorganize information literacy instructional programs for LUMS and other universities as well. It is imperative keeping the fact in view that LUMS is a leading institute of higher education in Pakistan, as reflected in (Symonds, 2019) it can provide a way forward for all institutions of higher learning in the country, especially in private sector.

Research questions

This study focused on answering the following research questions:

- What is the undergraduate students' perception about information literacy (IL)?
- What are the existing IL skills of undergraduate students?
- Is IL program needed as a course or otherwise for undergrad and other students?
- What is the perception of students about the role of IL in the students' development and learning?

Research design and procedure

The objective of the study is to assess the skills required to improve information literacy of the students of LUMS, Pakistan. The LUMS is an excellent academic institution with a proud history of achievement, and ambitious plans for the future. Various schools are working under the umbrella of LUMS. The schools offer undergraduate and postgraduate level education in various disciplines, i.e., Engineering, Management & Social Sciences, Information Technology, and Basic Sciences. LUMS is trying its best to facilitate its students as well as faculty to meet their educational needs.

At the time of the study, LUMS had four schools, Suleman Dawood School of Business (SDSB) Mushtaq Ahmad Gurmani School of Humanities and Social Sciences (MGSHSS), Syed Babar Ali School of Science and Engineering (SBASSE) and Shaikh Ahmad Hassan School of Law (SAHSOL). A survey research design was solicited to collect the required data using a self-administered structured questionnaire. On the basis of the literature review, a questionnaire was designed to collect required data from the respondents. For the content validation, the questionnaire was sent to LIS experts for review. Thirty-one (31) questionnaires, as a sample of the pilot study, were distributed among the students of each school. On their feedback, further changes were made in the questionnaire. The questionnaire was consisted of thirteen close-ended questions to collect the maximum data. Each statement had a 4-point rating scale (i.e., 1=Poor, 2=Adequate, 3=Good, and 4=Excellent). The questionnaire was divided into three parts. The first part was designed to collect the participants' demographic information. The second part of the tool was designed with the aim to collect the respondents' existing IL skills. Moreover, the third part was composed with the intention to obtain the opinion of the respondents regarding the need, importance, and contents of the IL program. Simple, convenient sampling technique was used to collect required data from the population. The sample size was calculated using Yamane (1967) formula. Total of 357 students of LUMS were selected as sample for this study. To collect the data, 357 questionnaires were distributed among the students of various schools of LUMS.

Out of 357 questionnaires, 306 (82%) questionnaires were received; eight incomplete

questionnaire were excluded at the data entry stage. SPSS (Statistical Package for Social Sciences) version 16.0 was used for analysis of the collected data.

Data analysis and discussion

The questionnaire was divided into various parts to collect the maximum data. Information about gender, age, school, etc. was intended to collect through the first part of the questionnaire. Results of Table 1 show that among the participants, male and female students were 203 (67%) and 103 (33%), respectively. Whereas, 83 (27%) of participants were 16-20 years and 223(73%) of respondents were 21-25 years old.

Table 1
Demography of Participants

Demography of participants	Frequency	Percent
Gender		
Male	203	66
Female	103	34
Age group		
16-20	83	27
21-25	223	73

IL Familiarity Level of Undergraduate Students

Participants of the study were asked to mention their level of familiarity with IL. Results showed that 16% students were familiar with IL “To a Great Extent”, 51% were aware of the concept IL “Somehow”, 23% have knowledge about IL “very little” and 11% mentioned that they were completely unaware of the IL concept.

Table 2

Frequency Distribution of IL Familiarity Level of Respondents

Familiarity Level	Frequency	Percent
To a Great Extent	48	16
Somehow	155	51
Very Little	71	23

Not at All	32	11
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Respondents' Opinion towards Existing IL Skills

The second part of the survey was designed to collect data about the existing IL skills of the respondents. Five point Likert scale was used against each statement. Following options were furnished against each statement:

Students' Existing IL Skills

The results of the study show that major portion of the students knew some what about IL skills. Students were asked to mention their level of skills to determine their need of information and majority 151 (49%) of the students mentioned that they have “somewhat” skills in the aforesaid area. Similarly, participants were asked to give their opinion about their skills to understand what information is exactly needed as well as their expertise to judge the authenticity of the information gathered and major portion 122 (40%) of the students responded against each statement that they have “somewhat” skills in this area. Likewise, major portion 139 (45%) of the students mentioned that they have “somewhat” skills to identify the sources of needed information. According to results, many 147 (48%) participants accepted that their skills to access the sources to collect needed information are “somewhat”.

Table 3

Results of Respondents' Opinion Regarding Existing IL Skills

(N = 306)

Sr.	Statement	No Opinion	Not at All	Somewhat	Very Little	To a Great Extent
1	I can determine my need of Information	- (0%)	6 (2%)	151 (49%)	24 (8%)	125 (41%)
2	I have skills to understand why information is needed	- (0%)	11 (4%)	122 (40%)	18 (6%)	155 (51%)
3	I have skills to understand what information is exactly needed	- (0%)	6 (2%)	139 (45%)	50 (16%)	111 (36%)
4	I have skills to identify the sources of needed information	- (0%)	10 (4%)	147 (48%)	52 (17%)	97 (32%)

5	I have skills to access the sources to collect needed information	- (0%)	12 (4%)	147 (48%)	52 (17%)	95 (31%)
6	I am aware of various searching techniques (AND, OR, NOT, wildcard, truncation etc.)	- (0%)	58 (19%)	108 (35%)	84 (28%)	56 (18%)
7	I have skills to revise and refine the search query to thrash for the right information	- (0%)	28 (9%)	117 (38%)	93 (30%)	68 (22%)
8	I have expertise to compare the sources of needed information	- (0%)	8 (3%)	170 (56%)	69 (23%)	59 (19%)
9	I have expertise to differentiate the best sources of needed information	- (0%)	20 (7%)	155 (51%)	71 (23%)	60 (20%)
10	I have expertise to judge the authenticity of the information gathered	- (0%)	17 (6%)	137 (45%)	79 (26%)	73 (24%)
11	I have expertise to judge the reliability of the collected information	- (0%)	20 (7%)	155 (51%)	71 (23%)	60 (20%)
12	I have expertise to evaluate the importance of the information	- (0%)	11 (4%)	148 (48%)	61 (20%)	86 (28%)
13	I have expertise to identify the main themes of the collected	- (0%)	12 (4%)	137 (45%)	69 (23%)	88 (29%)

	information					
14	I have expertise to compare the old knowledge with new research to understand the salient differences and similarities between the two	- (0%)	17 (6%)	132 (43%)	73 (24%)	84 (28%)
15	I have expertise to decide whether the collected information is right or not	- (0%)	11 (4%)	168 (55%)	55 (18%)	72 (24%)
16	I have expertise to manage the needed hardware/software (CPU, monitor, printer, scanner, hard disk, USB,/MS Office, Adobe acrobat, Winzip, Endnote, SPSS etc.) to manage the collected information appropriately	- (0%)	10 (3%)	155 (51%)	28 (10%)	113 (37%)
17	I have expertise to manage key notes of my activities during research	- (0%)	11 (4%)	156 (51%)	59 (19%)	80 (26%)
18	I have expertise to use the information accurately to meet my academic needs	- (0%)	8 (2%)	156 (51%)	48 (16%)	94 (31%)
19	I have expertise to convey the	- (0%)	8	156	53 (17%)	89 (29%)

	outcomes created from the gathered information		(2%)	(51%)		
20	I am able to understand the ethical, legal, and socio-economic issues related to information and information technology	- (0%)	11 (4%)	133 (44%)	65 (21%)	97 (32%)
21	I understand the rules, policies, SOPs (Standard Operating Procedures) of various institutions regarding the access and use of information	- (0%)	30 (10%)	122 (40%)	88 (29%)	66 (22%)
22	I have expertise of the use of various tools (Endnote, Bibtex etc.) for managing my research and references	- (0%)	51 (17%)	110 (36%)	77 (25%)	68 (22%)
23	I have expertise to quote the references of the information gathered properly	- (0%)	18 (6%)	139 (45%)	68 (22%)	81 (27%)
24	I am aware of fair and unfair use of information	- (0%)	17 (6%)	125 (41%)	52 (17%)	112 (37%)

	(Direct Plagiarism, Self Plagiarism, Accidental Plagiarism etc.)					
25	I have expertise to check the plagiarism using Turnitin software	- (0%)	58 (19%)	94 (31%)	58 (19%)	96 (31%)

Respondents' Opinion Regarding Need of IL Program

Participants were asked to give their opinion about the need of IL program. Results showed that 85% respondents felt that IL program is needed to help improving their academic performances. There were only 15% students who negated the need of the aforesaid program. The results represent that majority 208 (68%) believed that the IL program should be a mandatory part of the undergraduate program and 98 (32%) were not in favor of this idea.

Table 4

Frequency Distribution of Respondents' Opinion about Need of IL Program

Need	Frequency	Percent
Yes	259	85
No	47	1
Mandatory		
Yes	208	68
No	98	32

Importance of IL Program

Students were asked to express their opinion about the importance of IL program. Five point rating scale was used for this purpose. Results showed that majority of the students 150 (49%) considered the IL program as "Very Important". Similarly, a handsome number of students, i.e., 109 (36%) believed that the IL program is "Important" and only one (0.3%) student was not in the favor of IL program.

Table 5

Frequency Distribution of Respondents' Opinion about Importance Level of IL Program

Importance	Frequency	Percent
Very Important	150	49
Important	109	36
Moderately Important	40	13
Of Little Importance	6	2
Unimportant	1	.3

Respondents' Opinion Regarding Contents of IL Program

Participants were asked to give their opinion about the contents of the IL program. Options such as “Library Related Contents”, “Subject Related Contents”, and “Research Related Contents” with the option “check all that apply” were given to the participants. Results in Table 6 showed that majority of the students 140 (46%) chose all options i-e, “Library, Subject, and Research Related Contents”, only 38 (12%) chose “Subject Related Contents” and 33 (11%) each chose “Library Related Contents” and “Research Related Contents”.

Table 6

Frequency Distribution of Respondents' Opinion about Contents of IL Program

Contents	Frequency	Percent
Library, Subject, and Research Related Contents	140	46
Subject Related Contents	38	12
Library Related Contents	33	11
Research Related Contents	33	11
Library and Subject Related Contents	25	8
Subject and Research Related Contents	24	8
Library and Research Related Contents	13	4

Discussion and Conclusion

The findings of the study show that majority of the participants were male students in the age range between 21-25 years old, which reflect that more participants were out of senior

undergraduate students who have spent reasonable time in the university. The findings reveal that majority of students have familiarity with the information literacy programs which in line with the finding of Rafiq and Khan (2017) that the students have awareness about the information literacy. It maybe because the LIS professionals in the universities are performing their role. The findings further disclose that the students have skills to identify their information needs, the sources to access their required information and authenticate the retrieved information which contradict with the findings of Jan, Anwar & Warraich (2016) that the students have deficiency in information literacy skills. Further analysis shows that majority of the students believe that information literacy is important for their academic achievements which indicates their interest in receiving such trainings to fulfill their educational needs. Majority of students desire to be literate in library, subject, and research related contents so that they can be aware about their specific subjects and courses.

Recommendations

The aim of the study was to examine existing information literacy skills of the undergraduate students at LUMS, their perception about its importance and the contents they would like to be included in their information literacy program. The findings reveal that majority of the students have awareness about the information literacy and its importance for their academic achievements. Their preferred contents were library, subject, and research related contents so that they can identify need, resources to access and authenticate the available information to fulfil their academic needs. On the basis of these findings, it is recommended that the LIS professional at LUMS should prepare information literacy programs and course according to the findings of the study and the other universities of Pakistan should also be taken on board during this activity. As a result, other universities can either adopt the course, where there is no such practice, prior, or they may revise their information literacy programs accordingly, where such programs are already in practice.

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