

IMPACT OF INFORMATION LITERACY INSTRUCTION PROGRAMMES USING PRE- AND POST-TESTS: A CASE STUDY OF PUNJAB AGRICULTURAL UNIVERSITY, LUDHIANA

Suniti Bala

Assistant Librarian,

Punjab Agricultural University, Ludhiana

Email: sunitipau@gmail.com

Abstract:

Higher education administrators, faculty, and librarians recognize that successful students must develop lifelong learning skills to succeed in their academic pursuits. In today's Information Age society, it is necessary for students to be information literate due to the explosion of information and technologies. They must be information literate and know how to navigate, find, retrieve, analyze, and use information to be successful in an academic environment as well as the workplace. Successfully integrating information literacy instruction into the college environment is a crucial concern for improving student success and learning in higher education.

Keywords: Information literacy, User education, Bibliographic instruction

1.0 Introduction

Access to information in an academic library is complicated due to variety of subjects and various formats. In spite of various methods and tools like bibliographies and abstracting techniques, locating the information from various resources is a cumbersome process for the users. Most of the times, they are also unable to evaluate and analyse the information. Undoubtedly, the library professionals are working hard to educate the users. They organize the orientation programmes for the effective use of the libraries.

Various terms are used for the user education viz user orientation, bibliographic instruction, user awareness etc. Now the term information literacy has changed the complete scenario for the user education programme. A lot of research is taking place in this respect and the academicians are also giving it utmost importance to improve the information literacy skills of the users. Now it has a set of instruction with some standards.

The libraries organize the orientation programme to acquaint the freshman with some of the basics concerning the library use. It also introduces the user to the various library services and resources. It intends to familiarise the users with physical lay-out and the procedures of accessing the information from library resources. Though the libraries finish their responsibilities by providing the orientation to the library users, but the extent of benefits of the programme are required to be measured so that the instruction programmes may be improved in the future.

1.1 Concept of Information literacy (IL)

The concept of Information Literacy is too broad and overwhelming. In the context of libraries, so many terms for information literacy are used such as "library orientation", "freshmen initiation", "library tour", "user education", "user training", "library instruction" etc. But since 1988, many research studies have used the term 'information literacy' (Rader, 2000). The term Information Literacy was first introduced by Paul Zurkowski in 1974

in a proposal submitted to the National Commission on Libraries and Information Science. Paul Zurkowski defined Information literacy (as cited by Tuominen, Savolainen and Talja, 2005) as an individual's capacity to use information tools and primary sources to address problems.

The concept of information literacy is not new. Since years, libraries are guiding its users to consult the resources and its effective use. Gibson (2006) stated that professional associations in the American library community such as the ALA, American Association of School Librarians and Association of College and Research Libraries (ACRL) have promoted information literacy for a number of years. They have invested much time and resources in the professional development opportunities for librarians in information literacy pedagogy and programme development. They have also helped to create standards like the American Association of School Librarian's Information Power guidelines, and Information Literacy Competency Standards of ACRL.

There is no doubt of it that now almost in all countries the term is popular and the librarians are stepping towards attaining excellence and going at par with the IL standards.

[American Library Association Presidential Committee on Information Literacy](#) (1989) defined that "information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand."

The Association of College and Research Libraries (ACRL, 2000) declared that "an information literate individual is able to understand the economic, legal and social issues surrounding the use of information, and access and use information ethically and legally."

In broader sense 'to know how to derive required information from various resources and how to use it in a right way' is information literacy. The prime objective of an information literacy programme is to guide the users about accessing and using the information in a better way.

2.0 Statement of the problem

To cope up with the below proficiency in the information literacy skills of the students, the universities has added information literacy in their course contents. But the course instructors are unable to measure the effectiveness of these courses. Punjab Agricultural University, Ludhiana has also added a course of one semester (PGS501) for M.Sc. and Ph.D. students to educate the students about the access and effective use of information from different sources of information. The students are spending approximately six months in these courses. Therefore, there is a need to assess the information literacy skills of the students before and after going through the course.

3.0 Objective of the Study

The study aimed at identifying the followings:

- To study information literacy proficiency of the new entrants.
- To compare the overall level of library skills before and after receiving library instructions.
- To study the effect of information literacy instructions on students' learning.

4.0 Literature Review

Issa and others (2015) examined the IL proficiency of final year undergraduate students at the University of Ilorin, Nigeria. The study exposed that most of the students accepted that they had problems in recognizing their information needs. The study proposed teaching of IL to the new students to enhance the ability of the students to identify the information needs and to satisfy them.

From the results of a survey of faculty members at the University of Lahore, Pakistan, **Rafique (2014)** retrieved that the majority of the respondents were lacking the basic searching skills. Their information literacy skills were not satisfactory. They were unable to form effective search strategies.

Wadnerkar (2014) conducted a survey at Dhanwate National College, Nagpur to evaluate the students who registered for undergraduate, postgraduate and competitive examinations. Convenience sampling technique was used to select the respondents and questionnaire method was used to gather the required data. The result exposed that more than half of the respondents do not use e-resources as they were not much techno-savy. Majority of the students had never got any library instruction to use the library resources. Only 35% were able to analyze the gathered information to check its reliability and accuracy.

Wijetunge and Manatunge (2014) reviewed the information literacy programmes offered in a Faculty of Law in Sri Lanka to explore the factors which make the delivery and implementation of these programmes successful. The research recommended that summative assessment should be included in the study programme to reap the full benefit.

Baikady and Mudhol (2013) surveyed medical faculty and students of six medical colleges of Coastal Karnataka with the aim to know the computer literacy skills in using the web resources. The study recognized that 53.1% of faculty members and 49.2% postgraduate students possessed average computer literacy and it required joint efforts from librarians and faculty members to integrate computer literacy into the curriculum.

Baro and others (2013) did a case study through an online survey of university libraries of Nigeria, UK and USA which exposed that students do not have much interest in information literacy sessions. The lack of understanding of 'what information literacy is' and the non-cooperative approach of the teaching staff as regards to library services and use were the basic problem.

Bansode and Pereira (2012) conducted a survey of post graduate students of department of Marine Microbiology, Marine Science and Marine Biotechnology of Goa University to know their ability to communicate their needs and synthesize information on internet. The results depicted that the users had no knowledge about the use of OPAC and did not have the skills to create the search strategy in case of not finding the information on a required topic.

Jeffrey et al (2011) reported that advanced IL training is required in higher education and for lifelong learning through a case study on four institutions of Auckland, New Zealand. They found self-efficacy on the use of technology as one of the major hindrances. They discovered that students become doubtful about the quality of online information but they are more concerned with accessing and using information that is suitable to their needs rather than the value.

Joshi and Sharma (2009) conducted a survey in four departments of Kurukshetra University on searching information, use of computer and internet and proper utilization of information. The results revealed that the students were not much aware of their information needs. They were dependent on the library staff and the teachers to find out the information.

5.0 Methodology

The survey method was used to carry out this research and the target population were M.Sc. students of various disciplines at Punjab Agricultural University, Ludhiana. The students were assessed through pre-test and post-test by using a questionnaire. A random sampling method was adopted for the research work. A well-structured questionnaire was the instrument used to gather data for the study. A total of 120 questionnaires for pre-test were distributed to all the students present in the class in the year 2014. Again in the year 2015, after going through the information literacy sessions, the same questionnaires were got filled up from the same 111 students out of the 120 as the same students could not be located for the post test. In this way, 111 copies were found valid for the analysis. The collected data was analysed by differences of the percentage of correct and incorrect answers in the pre and post-test.

6.0 Findings and Discussions

A set of 31 questions was developed to analyse the level of information literacy skills of the students.

7.0 Analysis of need and identification of resources

The results of the pre-test revealed that the students were aware that to find books in the library they had to consult Online Public Access Catalogue (OPAC). In post-test the percentage increased (Table 1, Q1), 107 out of 111 students knew that for searching the books in the library they had to go through the OPAC. On the other hand percentage dropped down to 45 when they were asked either way on the use of the OPAC (Table 1, Q2). But after IL sessions, the students were well aware of the use of OPAC. There was a difference of 41.44% between the pre and post-test. Further, as a freshman, the students were also not aware about the type of the documents found in the OPAC. However, after attending the course, there was a great hike in the percentage by 72.07% (Table 1, Q3).

Table 1

Question No.	No. of correct answers (Pre-test %)	No. of correct answers (Post-test %)	Difference (%)
Q1	96(86.48)	107(96.39)	+9.90
Q2	50(45.045)	96(86.48)	+41.44
Q3	2(1.8)	82(73.87)	+72.07
Q4	84(75.67)	109(98.19)	+22.52
Q5	60(54.05)	101(90.99)	+36.93
Q6	84(75.67)	109(98.19)	+22.52

Initially, the students did not know the functions of various sections of the library. For them, Librarian's office was the right place to get the books issued. After one year of entering into the university, 98.19% of the students was aware that check in and check out of the documents are done at the circulation desk. (Table 1, Q4). The pre-test results showed that only 54.05% students were familiar with the system of organization of the library. However, till the post test, 90.99% of the students were aware about the shelving system (Table 1, Q5). Furthermore, only 75.67% of the students were able to recognize the categories of documents like magazines and journals are called periodicals, which was increased to 98.19% as per the results of the post-test (Table 1, Q6).

7.1 Searching techniques and locating the information

In the beginning, at the time of pre-test the students were not able to form the searching strategies. Yet, they were not aware how to start to get books on a topic. But their approach had a revolutionary change (17.11% to 70.27%) after one year (Table 2, Q1). Only 45.94% of the students were familiar with the catalogue format primarily, although the percentage changed to 84.68% in the post test (Table 2, Q2). Similarly, 62.16% students identified the call number correctly in the pre-test but later on 89.18% students acknowledged the call number (Table 2, Q3).

Table 2

Question No.	No. of correct answers (Pre-test %)	No. of correct answers (Post-test %)	Difference (%)
Q1	19 (17.11)	78 (7.27)	+53.15
Q2	51 (45.94)	94 (84.68)	+38.73
Q3	69 (62.16)	99 (89.18)	+27.02
Q4	27 (24.32)	69 (62.16)	+37.83
Q5	50 (45.04)	90 (81.08)	+36.03

To find out the journals articles, only 24.32% of the students selected the correct option formerly, but the post test exposed a little progress of 37.83% (Table 2, Q4). In addition to it, only 45.04% of the respondents had the clarity to search the journals in the library OPAC in the beginning but there was a visible change in the post test (Table 2, Q5).

7.2 Examining, selecting and rejecting the resources

Only 25.22% of the students were confident about the availability of the full text articles in the online catalogue before IL sessions. Later on, the percentage increased to 72.97% (Table 3, Q1). Average was higher in the post test on the awareness of information contained in various sources as compared to the pre-test (Table 3, Q2 and Q3). Similarly the percentage boosted by 19.81% and 26.12% in the post test in selecting the resources for scholarly articles and their availability respectively (Table 3, Q4 and Q5).

Table 3

Question No.	No. of correct answers (Pre-test %)	No. of correct answers (Post-test %)	Difference (%)
Q1	28 (25.22)	81 (72.97)	+47.74
Q2	76 (68.46)	102 (91.89)	+23.42
Q3	72 (64.86)	105 (94.59)	+29.72
Q4	67 (60.36)	89 (80.18)	+19.81
Q5	44 (39.63)	73 (65.76)	+26.12
Q6	78 (70.27%)	108(97.29%)	+27.02
Q7	36 (32.43%)	57(51.35%)	+18.91
Q8	24 (21.62%)	39 (35.13%)	+13.51

The percentage (70.27%) was satisfactory in examining the citations in pre-test and improved to 97.29% in the post test (Table 3, Q6). Besides the percentages was very low in interrogating into abstracting services. In post test it was reached to 51.35% from 32.43% (Table 3, Q7). Only 21.62% of the students were aware about the peer reviewed articles but after post test it was raised by only 13.51% (Table 3, Q8).

7.3 Formulating search strategies

Use of Boolean operators plays an important role in formulating the effective search strategies. In the pre-test and post test only 33.33% and 4.84% were aware of all the three Boolean operators (Table 4, Q1). However, the students were proficient (89.18% in pre-test and 92.79% in post test) in using the Boolean Operator 'AND' (Table 4, Q2).

Table 4

Question No.	No. of correct answers (Pre-test %)	No. of correct answers (Post test %)	Difference (%)
Q1	37 (33.33)	52 (46.84)	+13.51
Q2	99 (89.18)	103 (92.79)	+3.6

Recording and storing information

The pre-test results discovered that 64.86% of the students were capable of distinguishing between PDF and HTML format of the document but the post test results showed a development (Table 5, Q1). Most of the

students were not aware of the various referencing styles in both the tests (Table 5, Q2). The students were not aware about the definition of the annotated bibliography (Table 5, Q3) but they were well aware of the information contained in the bibliography which also depicted the progress in the post test (Table 5, Q4).

Table 5

Question No.	No. of correct answers (Pre-test %)	No. of correct answers (Post test %)	Difference (%)
Q1	72 (64.86)	94 (84.68)	+19.81
Q2	03 (2.7)	21 (18.91)	+16.21
Q3	29 (26.12)	39 (35.13)	+9.00
Q4	81 (72.97)	104 (93.69)	+20.72

7.4 Analysing the online resources

It is significant to evaluate the information from the online resources, its reliability and credibility. The outcomes of the survey presented a clear picture that the students were not much aware of the information contained in the wikipedia and internet. The findings displayed the unawareness of the students about these sources and very little progress in the post test (Table 6, Q1 and Q2 respectively). Only 27.92% of the students were aware of determining the authenticity of an internet cite which rose up to 46.84% in the post test. (Table 6, Q3).

Table 6

Question No.	No. of correct answers (Pre-test %)	No. of correct answers (Post test %)	Difference (%)
Q1	27 (24.32)	42 (37.83)	+13.51
Q2	32 (28.82)	46 (41.44)	+12.61
Q3	31 (27.92)	52 (46.84)	+18.91

7.5 Using the information

72.97% (pre-test) and 64.86 % (post test) of the students responded that they prefer to use the free resources available on internet to prepare their assignments. Most of the students preferred to make minor changes in the information already available to write their own document. Although, the students were not aware of why to cite but a progress of 13.51% was shown in this respect.

8.0 Conclusion

This study examined the impact of information literacy through a credit library course Findings from the study revealed that the course had visible impact on the development of information literacy skills of the students. The students became proficient in accessing the information from various resources but still most of the students were not proficient in organizing and using the information. They were not aware of the information ethics. Therefore, librarians and faculty will need to reassess the course contents and develop the course accordingly to demonstrate their level of mastery of information competency.

9.0 References:

1. American Association of School Librarians (2007). Standards for the 21st century learners. Accessed February 22, 2016. <http://www.ala.org/aasl/sites/ala.org.aasl/files/content/guidelinesandstandards/learningstandards/LearningStandards.pdf>.
2. American Library Association (1989). Presidential Committee on Information Literacy: Final report, 10 January 1989, Accessed June 4, 2014. <http://www.ala.org/acrl/publications/whitepapers/progressreport>
3. Association of College and Research Libraries (2000). Information literacy competency standards for higher education. Chicago: *Association of College and Research Libraries*. Accessed June 4, 2014. <http://www.ala.org/acrl/sites/ala.org.acrl/files/content/standards/standards.pdf>
4. Bansode, S.Y. & Pereira, S. (2012). Information search and retrieval in digital environment: a case study of marine sciences students of Goa University. *International Journal of Information Dissemination and Technology*, 2(4), 230-236.
5. Baikady, M.R. & Mudhol, M.V. (2013). Computer literacy and use of web resources: a survey on medical faculty and students. *International Journal of Dissemination and Technology*, 3(1), 27-32.
6. Baro, E. E., Seimode, F. D., & Godfrey, V. Z. (2013). Information Literacy Programmes in University Libraries: A Case Study. *Libri*, 63(4). doi:10.1515/libri-2013-0023
7. Gibson, C. (2006). Information Literacy and IT fluency: convergences and divergences. *Reference & User Services Quarterly*. 46 (3), 23-59.
8. Issa, A., Amusan, B. B., Olarongbe, S. A., Igwe, K. N., & Oguntayo, S. A. (2015). Assessment of the information literacy competence of undergraduate students at the University of Ilorin, Kwara state, Nigeria. *Annals of Library and Information Studies*, 62(2), 68-76.
9. Jeffrey, L., Hegarty, B., Kelly, O., Penman, M., Coburn, D., & McDonald, J. (2011). Developing digital information literacy in higher education: Obstacles and supports. *Journal of Information Technology Education*, 10, 383-413.
10. Joshi, Manoj K. and Sharma, Sanjeev (2009). Students' use of various information sources and need for information literacy education in Kurukshetra University. *Library Herald*, 47(1), 46-59.
11. Rader, Hannelore B. (2000). A silver anniversary: 25 years of reviewing the literature related to user instructions. *Reference Services Review*, 28(3), 290-297.
12. Rafique, Ghulam Murtaza (2014). Information literacy skills of faculty members: a study of the University of Lahore, Pakistan. *Library Philosophy and Practice* (e-journal). Paper 1072. Accessed on January 21, 2015 from <http://digitalcommons.unl.edu/libphilprac/1072>
13. Tuominen, Kimmo, Savolainen, Reijo & Talja, Sanna (2005). Information literacy as a sociotechnical practice. *Library Quarterly*, 75(3), 329-345.
14. Wadnerkar, Vaishali B. (2014). Information literacy skills on the use of e-library resources among students of the Dhanwate National College Library, Nagpur: a study. *Information Age*, 8(1), 34-36.
15. , Pradeepa & Manatunge, Kalpana (2014). Empowering 8 in practice: information literacy programme for law undergraduates revisited. *Annals of Library and Information Studies*, 61(1), 24-32.