Annals of Library and Information Studies
Vol. 62, June 2015, pp. 77-83

Information resources usage by the agriculture undergraduates of University of Peradeniya, Sri Lanka

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Received 30 September 2014, accepted 29 May 2015

A questionnaire based survey of a sample population of 69 agriculture undergraduates revealed that they often depend on search engines, Wikipedia, classmates and lecturers for information. The study found that a few undergraduates never used e-resources or never took the help of friends and family, librarians, library collections or personal collections. The study recommends that the students be provided adequate training in information literacy. Also the number of computers available in the library and the faculty computer centre should be increased so that the students can easily access e-resources.

Keywords: agriculture undergraduates; information resources; electronic resources; information literacy; Sri Lanka

Introduction

Awareness of the information resources available in the library, and ability to search and obtain information from the library adds substantial value to the learning process of students. There are numerous studies on the information use behavior of undergraduate students. However, such studies related to students of agriculture are limited. In fact, in Sri Lanka, only two studies related to agriculture undergraduates have been reported.

Ileperuma and Mudannayake studied the agriculture and science undergraduate and postgraduate students (a sample of 1185 students with a response rate of 76.74%)[1]. Findings of the study established that books are the most important information source followed by lecture notes and handouts. Researchers claim that resources like CD/ROM databases and audio-visual materials have a low priority but there is an increasing trend to use Internet as an information source. The study also revealed that the majority of students were not aware of the online public access catalogue and e-resources provided through the library web pages. However, the paper does not make a distinction between the findings related to agriculture and science students. Therefore the specific characteristics of agriculture undergraduates could not be known from that study.

The second study by Dilrukshi[2] surveyed the online journal usage of all the fourth year undergraduates (number not specified), and reported that 52% prefer online journals while the remaining 48% prefer printed journals. The study further recognised that the absence of training in using online resources, lack of time to engage in searching due to heavy workload, poor knowledge of online jorunals, and lack of computer facilities in the faculty affect the usage of online journals. The author recommended comprehensive training and awareness programmes, allocation of time to use the library, and increased computer facilities in the faculty.

Keeping in view that there are only two studies on the information usage pattern of agriculture undergraduate students in Sri Lanka, the current study was undertaken at the Faculty of Agriculture, University of Peradeniya. Established in 1972, the Faculty consists of eight academic departments and presently offers three B.Sc. programmes in Agricultural Technology and Management, Food Science and Technology, and Animal Science and Fisheries.

Literature review

Since the relevant literature in the Sri Lankan context was limited, the survey was extended to international studies carried out since 2000. Cheunwattana et al[3] surveyed 2,435 students in six public universities in Thailand and established that 64.84% of the respondents rely on search engines and 32.74% consulted course readings. Other resources consulted by them included classmates (43.31%), class readings (41.63%), Wikipedia (33.52%), lecturers (31.49%), and library collection (28.86%).

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[a]The author, since carrying out the study, has moved to the current place of work.

Rhoades et al[4] surveying 255 second and third year students in the College of Agricultural and Life Sciences of University of Florida observed that search engines and WebCT were utilized by most. Hadimani and Rajgoli[5] reported the findings of their study carried out in a college of agriculture in Raichur, India with 90 randomly selected undergraduates with a response rate of 100%. The study established that all the respondents knew where to find information and it was found that the majority could search exact information (95.55%), and had the ability to evaluate information in terms of currency, authority and appropriateness (91.11%). These findings are contrary to the findings of many other studies reported here perhaps due to the nature of Yes/No type of responses obtained rather than using a Likert type scale. However, the authors concluded that the college should have separate funding and other support for an information literacy agenda, technological infrastructure needs to be improved and that the librarians and faculty should collaborate to develop discipline-specific research skills. They also pointed out that there is a need to develop tutorials to improve database searching skills and highlighted the need for an information literacy component in the curriculum.

Adio and Arinola[6] studied 180 senior students in the Faculty of Agricultural Sciences in LAUTECH (Latoke Akintola University of Technology, Ogbomoso, Nigeria) and established that 74% used Internet, 66% used textbooks, 63% used theses and dissertations, 39% used CD/ROM databases, and that most students lack basic knowledge and skills in using available resources and services in the library. Lack of facilities and inadequacy of computers in the library were identified as barriers. Researchers recommended conducting awareness programmes, and improving computer and Internet facilities for the students.

The studies conducted in India, Nigeria, Thailand, and USA established that most of the undergraduates prefer Internet and search engines to other types of resources although they have problems related to information skills. In contrast, the two Sri Lankan studies established that the undergraduates prefer printed resources to electronic resources and one study confirmed that the Sri Lankan agriculture undergraduates lack awareness and information skills. The current study made an effort to identify the specific information seeking trends of the agriculture undergraduates of University of Peradeniya.

Objectives of the study

- To study the information resource usage of agriculture undergraduates; and
- To study the criteria used to evaluate the web-based resources.

Methodology

An online questionnaire used by Head and Eisenberg[7] and validated thereafter[3,8] was adapted for the present study.

A pilot survey was conducted that ascertained the usability of the online questionnaire in the Sri Lankan context. The full questionnaire was not used in this research as the respondents of the pilot study commented about its lengthiness and the time taken to complete it. Only Part I on academic research was adapted omitting Part II on everyday life research. In addition to the original questions, two more on age and gender of the respondents were added. Further, six questions on the access to computers by the undergraduates and the training they have received in using the library and Internet were also added to the instrument, as data on these aspects were not available in the university. The final survey instrument contained 20 questions.

A stratified random sample of 10% was drawn from a population of 688 students. The sample included 25, 23 and 21 students from the second, third and fourth academic years. First year students were disregarded as their information use was not expected to be adequate to respond to the questionnaire effectively. Since access to e-mail by the students is limited, a printed version of the questionnaire was administered through the faculty library in early 2013 and the data collection was completed in two months. Faculty websites, annual reports, some faculty members and the senior assistant librarian of the faculty were consulted to triangulate the findings.

The findings of the survey are mostly based on the student responses and the reliability of the findings largely depend on the accuracy of revelations by the students. Nevertheless, the findings can be generalized to the total student community in the faculty of agriculture as the sample is representative and the group was predominantly homogenous.

Findings

The response rate was 100% and of the total respondents, 66% were 24-26 years, 30% were over 26 years and 4% were 21-23 years of age. Forty nine

respondents were males while 51% were females. Fifty five percent had received a Grade Point Average (GPA) of 3.0-3.5 and 34% had a GPA of 3.6 or above while 10% had a GPA of 2.6-2.9. The following sections discuss the findings under two themes - the frequency of consulting the information resources, and the frquency of using a given list of criteria to evaluate the web-based resources.

Resources consulted

The usage frequency of the eleven sources are given in Table 1.

According to Table 1, the information sources consulted often are search engines (96%), Wikipedia (73%), classmates (66%), lecturers (64%), and recommended readings (58%). Information sources that are used sometimes are librarians (58%), e-resources through the library (48%), recommended readings and friends and family (42%), and library and personal collections (40%). Some respondents claimed that they never use e-resource (19%) or have never consulted friends and family (13%), librarians (11%), personal collections (9%), and library collections (7%). Some respondents claimed that they do not know or do not have any experience with e-resources (15%), personal collections (9%), librarians (7%), government websites, library collections, and friends and family (3%).

Use of certain resources like library collection and the e-resources provided by the library is low, i.e. only 45% use the library collection often, and 10% claimed that they never use or do not know about the library collection. Only 40% used their personal collection often while 9% never used it and another 9% were not aware of any personal collections which meant that they did not have any personal collection of information resources for their use. Librarians were consulted often by only 22% while 11% never approached the librarians. E-resources provided through the library which included CABI, JSTOR and AGORA were used often only by 18%, while 19% never used them, and 15% were not aware of the e-resources.

A further analysis was made to ascertain whether there is any correlation between the use of information resources and several other variables, but only a minor correlation (0.2413) was established between the information resource usage and the GPA. The correlation coefficient between the information resource usage and the subject studied (-0.0087), gender (-0.1788), age (0.1644), and training received (0.1323) were insignificant.

Evaluation criteria

Respondents were offered twelve criteria to select according to the frequency they used each to evaluate web-based resources. Currency of the website (63%), availability of vital information (60%), prior awareness about the website (48%) previous use of the website (48%) and whether the website has links to the other resources (43%) are the often used criteria (Table 2). URL (34%), design of the website (30%) and librarians' recommendations (13%) are not used by many.

Respondents sometimes consider author credentials (64%), previous use of the website (58%), prior awareness about the website (54%), availability of vital information (52%), etc. Some respondents claimed that they never use vital information (18%), links to other sites (15%), website creator's credentials (13%), whether have heard about the site before (10%), etc. to evaluate web resources. Some of the respondents claimed that they do not know the meaning of the URL (28%), librarians'

Table 1--Freqency of using information resources

Resources consulted	Often	%	Sometimes	%	Never	%	Don't know	%
Search Engines	64	96	5	4	0	0	0	0
Wikipedia	49	73	17	25	1	1	1	1
Classmates	44	66	23	34	0	0	0	0
Lecturers	43	64	19	28	3	4	1	1
Recommended Readings	39	58	28	42	1	0	1	0
Government Websites	35	52	26	39	4	6	2	3
Library Collection	30	45	27	40	5	7	2	3
Personal Collection	27	40	27	40	6	9	6	9
Friends/family	25	37	28	42	9	13	2	3
Librarians	14	21	38	57	7	10	5	7
E-Resources through the library	12	18	32	48	13	19	10	15

Table 2--Criteria used to evaluate web-based resources

Evaluation criteria	Often	%	Sometimes	%	Never	%	Don't know	%
Currency of website content	42	63	24	36	2	3	1	1
Website creator's credentials	19	28	35	52	12	18	3	4
Content acknowledges different viewpoints	24	36	36	54	7	10	2	3
Website gives credit for using someone else's ideas.	18	27	39	58	6	9	6	9
Consider what the URL mean	23	34	33	49	10	15	3	4
Website has links to other web resources	29	43	34	51	3	4	1	1
Website has bibliography	14	21	30	45	4	6	19	28
Vital information on website	40	60	24	36	3	4	2	3
Librarian's recommendation	9	13	43	64	9	13	7	10
Prior awareness about the website	32	48	26	39	7	10	1	1
Previous use of the website	32	48	31	46	4	6	1	1
Website's design	20	30	33	49	5	7	10	15

recommendations (15%), or website creator's credentials (10%) when it comes to evaluating a website.

Discussion

Findings proved that the agriculture undergraduates often use search engines (96%) and Wikipedia (73%) than any other type of resource, which is in conformity with several previous research[3,4,6]. According to these studies, Internet is perceived by the students as the most effective method of obtaining information because it is easy to understand, and 'accurate'. Head and Eisenberg[7,8] also established that it meets the students' requirements in terms of currency, coverage, convenience, and comprehensibility. Colon-Aguirre and Fleming-May[9] established that the students prefer Wikipedia because of its capacity to help them with the terms and use of language regarding certain topics, its clarity of language and inclusion of hyperlinked citations. Lim[10] identified that the ability to check facts quickly and the availability of background information makes Wikipedia popular among the students.

The current study established that third preference of the agriculture undergraduates is their classmates (66%) as an information resource. Findings of a previous study[11] determined that the colleagues and friends are consulted because they are easily and efficiently accessible, and the friends and colleagues are used to compare findings with their own, to obtain advice on a task, and to obtain advice on search processes.

The fourth resource preferred by the respondents is the lecturers (64%). Literature identifies several reasons for the students to turn to their lecturers for information. The lecturers evaluate assignments of the students, they are easily accessible via e-mail, they provide guidance, offer individual consultative sessions for the students, and have in-class discussions[7]. In other words, lecturers have closer communications with the students regarding their course related research; therefore they turn towards the lecturers for information.

The study ascertained that the respondents do not satisfactorily use the library collection and 10% never use or are not aware of this resource. The annual statistics confirmed that the average use of library books per student in the faculty has dropped from 3.3 in 2011 to 2.5 in 2013 and to 1.8 in 2014 depicting that the students are moving further away from the library collection. However, this trend is not specific to Sri Lanka. Inconvenience, lack of time, misperceptions over how to begin the search for resources, lack of awareness of the mechanisms to locate materials in the library, and the fear of approaching the library staff to seek help are perceived as reasons for the low use of the library[9]. The reluctance of the library staff to assist them, inadequacy of library opening hours, lack of relevant material in the library[5] are also determined as reasons for poor use of the library. In the Sri Lankan context, language also could be a barrier as over 95% of the library material are in English. Though the current study did not make an in-depth analysis of why the library usage is low, several students have mentioned under any other comments that there is a considerable distance between the lecture

theatres and the library, and that the library opening hours are not convenient for them.

The study also ascertained that the use of the e-resources provided through the library is low.

Urquhart and Rowley[11] identified eleven elements, that can affect the e-resource usage which they categorized as micro (individual) and macro (organizational) factors. Micro factors include information literacy, search strategies used, support and training, pedagogy, academic's information behavior, and the discipline/curriculum, while the macro factors include information resource design, availability and constraints to access information and learning technology infrastructure, policies and funding, and organisational leadership and culture. This research did not delve into qualitative aspects in information resource usage. Therefore it is not possible to identify the effects of some of these factors on the usage. Nevertheless, the full survey's component on training and access to computers proved that two micro factors (information literacy and support, and training) and one macro factor (constraints to access) can have an effect on the e-resource usage.

Only 48% of the respondents claimed that they received any training in using the Internet or library while 52% claimed that they did not receive such training. The findings further established that trainings are not equally offered to all, but only to certain academic departments and only for certain academic years. The programme offered to all is an one-hour orientation programme offered at the enrollment, but this is not adequate to provide any helpful instructions on using the e-resources. This confirms that all undergraduates are not adequately information literate and do not receive adequate support. Request made by 51% of the respondents for the library to offer such training further confirms the existing inadequacy. Findings related to the access to computers by the agriculture undergraduates confirmed that they lack access to computers. Of the respondents, 91% claimed that they use the faculty computer centre, which has only 75 computers, and 70% of the respondents claimed that they use the library computer centre, which has only two computers. More research is needed to identify the effect of other factors identified by Urquhart and Rowley[11] on the usage of e-resources available through the library.

The correlation figures did not prove that there is a significant relationship between the use of information resources and the age, gender, subject, and training of the respondents. There cannot be any positive correlation between training and use of resources as 52% of the undergraduates have not received any training and even the offered training is not adequate. Several studies have established why students prefer certain information resources over the others despite the belief of their teachers and librarians that certain other resources are better in quality than what they often use. In general, ease of accessibility[12-15], ease of use[15,17,18], and convenience[17] are the factors which drive the students more to particular resources. It indicates that the Sri Lankan respondents have limited training and issues with access to computers as well as the inconvenient opening hours and the distance between the faculty library and their classroom, which discourage them from using the library often. However, further qualitative research is required to confirm the specific reasons for the pattern of information resource usage by the agriculture undergraduates.

Head and Eisenberg[7] have identified three criteria (Traditional standards of timeliness and authority, Domain specific standards, and Self-taught standards) for evaluating information resources. Findings indicated that the respondents often use three self-taught methods (previously heard, previous use, and availability of vital information) and one traditional method (currency of website) to evaluate Internet-based resources. It was observed that the students do not use reliable criteria to evaluate web-based resources, hence their evaluation methods need to be improved especially as they often use search engines, and Wikipedia than the other more reliable resources.

Conclusion

The findings lead to the conclusion, that the agriculture undergraduates use search engines, Wikipedia and classmates often than the other information resources. They sometimes use librarians, e-resources provided through the library, recommended readings, friends and family, library collections and personal collections. Few of them never use e-resources, friends and family, librarians, library collections or personal collections while a smaller percentage do not know about e-resources, personal collection, and librarians and that they do not use standard evaluation criteria to select web-based resources. Under these circumstances, attention must be paid to the quality of the information resources used by the agriculture students, especially when

thousands of dollars are spent on strengthening the library collection, both print and electronic. The findings also proved that the training they receive in using the library and the Internet are not adequate and the students expect more from the library. These findings convinced that the agriculture students need more support from the faculty and the librarians to improve their information resource usage if they are to exploit the high quality resources provided through the library for their learning and research.

Therefore, it is strongly recommended that the students be provided with adequate training so that they learn how to use the information resources effectively and to consult librarians for assistance when they need expertise, to help them. They need to be trained in searching for information from e-resources available through the library so that they are empowered to search beyond Wikipedia or Google. Rather than offering common training for all, the information literacy programmes need to be tailor-made to suit the needs of specific groups, i.e. first, second, third, and final year students and the subject-based groups of students. Secondly, it is recommended to undertake more qualitative studies to uncover why they exclusively turn to certain resources but not to others and to identify the barriers they encounter in using more scholarly and reputed information resources. Thirdly, it is recommended to increase the number of computers available in the library and the faculty computer centre considerably so that the students can access the e-resources other than the Wikipedia and Search Engines without any hindrance. Although it is not always possible to locate the library in close proximity to the classrooms, it is recommended to have flexible opening hours, so that the undergraduates can use the library facilities conveniently in-between or after their classes.

Acknowledgement

Financial assistance provided by University of Peradeniya (Grant No. RG/2012/58/L) is acknowledged.

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