Information Literacy of Undergraduates for Lifelong Learning

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Abstract

Information literacy is a set of abilities required to identify, locate, evaluate, organize, and effectively use the needed information to address personal, job related, or broader social issues and problems. Information literate individuals are those who have learned how to learn, and who are prepared for lifelong learning. People's relentless need for information in order to achieve educational, social, occupational and economic goals led to recognize information literacy as a core literacy of the 21st century, which underpins all other forms of literacy and makes them possible. When undergraduates passing out from universities are seen as tomorrow's worker, all undergraduates have to be information literate and such people are valuable asset to any employer. Many universities in the Western world have taken steps to incorporate information literacy programmes into Bachelors' degree curriculum. However, none of universities in Sri Lanka has taken information literacy into the Bachelors' degree curriculum to date. In the above context, this research was conducted to investigate the status of information literacy of undergraduates. Information literacy can be assessed using three distinct methodologies: self-evaluation, third-party evaluation, and peer evaluation. The findings presented in this paper are on undergraduates' perceived (current) level of information literacy based on attitudinal scales. From a population of 2414 undergraduates studying in the University of Moratuwa by the time of this research, 918 responded to the survey, amounting to 38% response rate with a university-wide coverage. The findings and implications of the research for education endeavor will be discussed.

Keywords: Education, Information literacy, lifelong learning, Sri Lanka, Curriculum

1. Introduction

Information literacy is a set of abilities required to identify, locate, evaluate, organize, and effectively use the needed information to address personal, job related, or broader social issues and problems (Association of College and Research Libraries, 2000; Catts, 2005; Catts and Lau, 2008). Information literate individuals are those who have learned how to learn, and who are prepared for lifelong learning. People's relentless need for information in order to achieve educational, social, occupational and economic goals led to recognize information literacy as a core literacy of the 21st century, which underpins all other forms of literacy and makes them possible.

When undergraduates passing out from universities are seen as tomorrow's worker, all undergraduates have to be information literate and such people are valuable asset to any employer. Many universities in the Western world have taken steps to incorporate information literacy programmes into Bachelors' degree curriculum. However, none of universities in Sri Lanka

has taken information literacy into the Bachelors' degree curriculum to date. In the above context, this research was conducted to investigate the status of information literacy of undergraduates. Therefore, the objective of the study was to investigate undergraduates' abilities in information literacy.

2. Method

2.1. Measures

Information literacy can be assessed using three distinct methodologies: self-evaluation, third-party evaluation, and peer evaluation (Camuffo and Gerli 2004; Graham and Tarbell 2006; Marsh, 1984). The findings presented in this paper are on undergraduates' perceived (current) ability levels of information literacy based on attitudinal scales. Information literacy was measured using 20-item attitudinal scale developed based on the literature reviewed.

2.2. Sample

The study was conducted in the University of Moratuwa. A stratified random sample of level 1 undergraduates representing Faculties of Architecture, Engineering, and Information Technology were selected. To assess information literacy across academic years, random samples of Level 2 and Level 4 undergraduates representing Faculty of Engineering were also selected. Of a population of 2414 undergraduates studying in the University of Moratuwa by the time of this research, 918 responded to the survey, amounting to 38% response rate with a university-wide coverage. Table 1 shows the details of population and sample of the study.

Table 2: Population and sample

Batch, Level and Faculty	Population	Sample (Responses received)	% Represented
Level 1 Faculty of Architecture (Arch. L1)	291	122	42
Level 1 Faculty of Information Technology (IT L1)	98	39	40
Level 1 Faculty of Engineering (Eng. L1)	706	409	58
Level 2 Faculty of Engineering (Eng. L2)	731	159	22
Level 4 Faculty of Engineering (Eng. L4)	588	189	32
Total	**2414**	**918**	**38**

Level 3 Faculty of Engineering undergraduates were on Industrial Training and not included in the study

The details of sample characteristics are shown in Table 2.

Table 2: Characteristics of the sample

	Arch. L 1	IT L 1	Eng.		
			L1	L2	L4
Z Score in the A/L examination:					
Mean	2.5	1.6	2.2	2.1	2.2
Std. Deviation	0.9	0.3	0.4	0.4	0.36
Age:					
Mean	20.75	21.29	20.92	21.90	23.80
Std. Deviation	0.72	0.76	1.24	0.76	0.68
Gender (%):					
Male	45.8	62.9	71.7	76.4	84.0
Female	54.2	37.1	28.3	23.6	16.0
Ethnicity (%):					
Sinhala	89.0	85.3	90.1	91.8	77.6
Tamil	9.3	11.8	7.3	6.2	16.1
Muslim/Moor	0.8	2.9	2.6	2.1	5.2
Other	0.8	-	-	-	1.1
Religion (%):					
Buddhism	83.1	85.3	83.1	82.3	69.9
Hinduism	6.8	11.8	6.5	4.8	14.5
Christian	9.3	-	7.5	10.2	9.2
Islam	0.8	2.9	2.3	2.0	5.8
Other	-	-	0.5	0.7	0.6

Table 3 shows administrative provinces from which undergraduates represented in the sample entered the university.

Table 3: Provinces - undergraduates represented in the sample entered the university (%)

Province	Arch.	IT	Eng.		
	L 1	L 1	L1	L2	L4
Western	32	37	61	54	61
Central	18	9	2	8	5
Southern	13	12	16	16	15
North Western	10	9	8	7	5
Sabaragamuwa	8	12	3	5	2
North Central	5	6	3	1	2
Uva	5	9	1	3	1
Eastern	5	3	1	1	2
Northern	4	3	5	5	7
	100	100	100	100	100

2.3. Method of data analysis

Abilities in information literacy were ranked based on the mean value to identify the highest and lowest scored abilities by each respondent.

3. Results

3.1. Abilities in information literacy

Table 4 shows the highest ranked (1st three) abilities as perceived by undergraduates.

Table 4: Highest ranked (1st three) abilities as perceived by undergraduates

	Arch.	IT	Eng.		
	L 1	L 1	L1	L2	L4
Ability to use computer as a work tool.	2 ($\bar{X}$ =3.02)	3 ($\bar{X}$ =2.89)	1 ($\bar{X}$ =2.90)	1 ($\bar{X}$ =3.15)	1 ($\bar{X}$ =3.40)
Use of university library for information search.	3 ($\bar{X}$ =2.94)	-	-	-	-
Familiarity with online information resources.	-	-	-	-	2 ($\bar{X}$ =3.16)
Use of encyclopaedias, dictionaries and databases to locate concrete information	-	1 ($\bar{X}$ =2.97)	-	3 ($\bar{X}$ =3.00)	-
Knowledge on how to access specific Internet resources.	-	-	1 ($\bar{X}$ =2.90)	2 ($\bar{X}$ =3.08)	2 ($\bar{X}$ =3.16)
Effective online searching techniques.	-		3 ($\bar{X}$ =2.75)	3 ($\bar{X}$ =3.00)	2 ($\bar{X}$ =3.16)
Ability to work as a group.	1 ($\bar{X}$ =3.17)	2 ($\bar{X}$ =2.92)	2 ($\bar{X}$ =2.89)	1 ($\bar{X}$ =3.15)	3 ($\bar{X}$ =3.08)

Note: Scores are placed on a scale ranging from 1 to 4.

Rank is based on mean values.

A blank cell (-) means that particular ability is not among the 1st three.

Table 5 shows the lowest ranked (last three) abilities as perceived by undergraduates.

Table 5: Lowest ranked (last three) abilities as perceived by undergraduates

	Arch. L 1	IT L 1	Eng. L1	Eng. L2	Eng. L4
Ability to analyse and synthesize/combine information.	3 ($\bar{X}$=2.57)	-	-	-	-
Ability to summarize information and present it in succinct (brief) fashion.	1 ($\bar{X}$=2.33)	1 ($\bar{X}$=2.23)	-	-	-
Ability to summarize information from multiple sources.	-	-	3 ($\bar{X}$=2.56)	-	-
Proper documentation of others' work.	-	3 ($\bar{X}$=2.51)	-	-	-
Use of university library for information search.	-	-	-	2 ($\bar{X}$=2.43)	1 ($\bar{X}$=2.35)
Familiarity with university library website and services.	-	2 ($\bar{X}$=2.39)	1 ($\bar{X}$=2.51)	1 ($\bar{X}$=2.29)	3 ($\bar{X}$=2.42)
Knowledge on issues related to copyright and plagiarism.	2 ($\bar{X}$=2.52)	-	2 ($\bar{X}$=2.52)	3 ($\bar{X}$=2.49)	2 ($\bar{X}$=2.38)

Note: Scores are placed on a scale ranging from 1 to 4.
Rank is based on mean values.
A blank cell (-) means that particular ability is not among the last three.

3.2. Requirement of training to improve abilities in information literacy

The study also inquired whether undergraduates perceive any requirement of training to improve their abilities in information literacy. The results are shown in Table 6.

Table 6: Requirement of training to improve abilities in information literacy

	Arch. L 1	IT L 1	Eng. L1	Eng. L2	Eng. L4
No, training is not required (%)	42.0	23.0	40.0	40.0	24.0
Yes, training is required (%)	58.0	77.0	60.0	60.0	76.0

3.3. Differences in information literacy by demographic characteristics of undergraduates

Data was analysed to identify whether statistically significant differences exist in information literacy of undergraduates across demographic characteristics, namely, Z Score in the A/L examination, age, gender, ethnicity, religion, whether their mother is in a paid employment or housewife, and whether they had relatives living with them (such as grandparents). However, statistically significant differences have not been found in any of the perceived abilities of

information literacy. Thirion and Pochet (2009) had not also found any statistically significant differences by individual characteristics and family background of undergraduates.

4. Conclusion and implications

This study investigated undergraduates' abilities in information literacy based on a stratified random sample of undergraduates from the University of Moratuwa. Abilities in information literacy were measured based on self-reported perceived levels.

The results suggests that Architecture undergraduates ranked their ability to work as a group the highest, Information Technology undergraduates ranked their ability to use encyclopaedias, dictionaries and databases to locate concrete information the highest, while Engineering undergraduates ranked their knowledge on how to access specific Internet resources and ability to use computer as a work tool the highest. When the responses of engineering undergraduates from Level 1, Level 2 and Level 4 were considered, major deviations in their ability levels were not prominent. When considering the lowest ranked abilities, Architecture and Information Technology undergraduates ranked their inability to summarize information and present in succinct (brief) fashion the lowest while Engineering undergraduates revealed their lack of familiarity with university library website and services. Overall, respondents' ranks do not show major deviations in their abilities across Faculties or across the academic years of the Engineering stream.

Undergraduates from the Faculties of Engineering (over 60%) and Information Technology (over 77%) highlight the importance of providing them with training to improve their abilities. Further, the results suggest that undergraduates in their final year (Engineering Level 4) favour such training very much (76%).

Overall, the findings suggests the importance of communicating undergraduates the importance of developing abilities in information literacy. In this regard, some scholars suggest (e.g. Marcum, 2002; Orr and Cribb, 2003) that information literacy should be included as a part of course curricula within each discipline, rather than stand-alone sessions run by the library. Alternatively, some other scholars suggest (e.g. Fallows and Steven, 2000; Wang, 2006) the importance of introducing a separate "information literacy course" for undergraduates. In this regard, Wang (2006) found statistically significant differences in "academic grades" between undergraduates who took "credit courses" on information literacy and other undergraduates who did not take the credit course, in the USA. However, none of the universities in Sri Lanka has taken information literacy into the undergraduate curriculum to date. It should be, however, noted that formulating strategies to improve information literacy is beyond the scope of this study.

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