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Library Information-Seeking Behaviour among Undergraduate Students of Agricultural Extension and Education in Iran

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ABSTRACT

This paper investigates the library information-seeking behaviour among undergraduate students of agricultural extension and education of Iran. By using stratified proportional random sampling (by Morgan table), 230 persons were selected from four famous universities (Tehran, Shiraz, Mollasani and Kermanshah) of Iran through questionnaires for this study. Reliability was measured by Cronbach-Alpha (á = 0.84), which showed that the reliability of the questionnaires was acceptable. Scale-free technique, Principal Components Analysis method, Eta test, and Correlation and Regression tools were used for data analysis. The findings revealed that awareness of library scientific resources and availability of library resources items were the most important and influenced factors in students' library information-seeking behaviour. Students with higher academic level are generally expected to have higher skills through information-seeking behaviour. On the contrary, this study indicates that the students were not influenced by this. Gaps in the library facilities in different universities (especially total number of related books to field and the number of computers) have direct influence on students' library information-seeking behaviour. Besides, interactions (searching by asking other students and faculty) were the other means students' used for seeking information.

Keywords: Library, information-seeking behaviour, agriculture students, availability of information resources.

1. INTRODUCTION

Students of agricultural extension and education gather information to obtain higher level of knowledge in the field for preparing academic course assignments and project papers using a variety of information sources and services. Toward improving knowledge about agricultural extension and education in Iran, the basic academic facilities for information-seeking process is necessary. Libraries play an important role in students' information-seeking behaviour, which is considered a multifarious, dynamic, social human behaviour that needs a picture as rich as possible to truly understand the phenomenon[1].

2. LITERATURE REVIEWS

Graves and Seliq have emphasised the importance of the medical library's role, in developing life-long learning skills in medical students[2]. They pointed out that developing skills in information management and the usage of information tools and databases are in need among students. Undergraduate students often do not comprehend the necessity of learning the usage of library resources, which are available to them nor do they always realise that research skills will be a necessary part of their future practice of medical profession.

Pelzer and Leysen in their study about library use and information-seeking behaviour of veterinary medical students at Iowa State indicated that the library was used frequently for studying and making photocopies of materials[3]. The typical respondent relied on course textbooks and handouts for current information on unfamiliar topics instead of using indexes or abstracts for guidance to recent literature. Light use of information resources raises the concern that students are developing an inadequate base of retrieval skills for finding information about new procedures, diseases, and drugs. No differences were found between students with and without formal bibliographic instruction in their approaches in seeking information or in library use.

Kuhlthau conducted a study examining the application of library skill in assigned library research by

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high school seniors[4]. The objectives of the project were: to explore the students' experience of searching process in the library; to reveal evidence supporting the hypothesis that there are sequences of stages to an information search; and to propose a model of the user's stage within the search process.

According to a study conducted by Rankin, the most frequent use of library among medical students was for studying course work and photocopier[5]. These findings do not show any independent initiation of an information search in the library. Also, textbooks and handouts had the highest usage by all the students.

The findings of Liu and Redfern show that in using the library, students with the English as their primary language are usually more successful than those with English as their second language[6].

Findings of Fidzani[7] indicated that guidance in the use of library resources and services are necessary to help students face their information requirements. The study found that journals, library books, and textbooks are the most popular sources of information for course work and research, and students are in need to be taught how to use library resources and services. Fidzani pointed out that many graduate students lack basic skills in using the library and its resources effectively.

Majid and Ai[8] studied the use of information resources by computer engineering students in Singapore. They found that top information resources in order of preference were books (94 per cent), lecturers (84 per cent), the Internet (86 per cent), and friends (84 per cent). They relied heavily on printed sources.

Hartmann[9] concluded that undergraduate students experienced difficulties, in locating items from the library collection and did not understood the processes for retrieving journal articles.

Whitmire[10] indicated that disciplinary differences affected a number of information-seeking activities (e.g., use of online catalogues, indexes and library books frequency). She also found that ethnic backgrounds also influenced some aspects, such as students' use of the library catalogue and seeking help from librarians.

Drabenstott[11] examined strategies used by 14 undergraduate students in a single search session employing a information gateway—a university library's home page on the web that provided one entry point for access to the library's online resources. She concluded that few undergraduate students were able to enlist search strategies commonly taken by domain experts (i.e., subject experts like professors). Domain-expert strategies were used infrequently and ineffectively.

Lee[12] mentioned two common themes among under graduate student's information seeking: (i) undergraduate students face enormous challenges in finding proper information to satisfy their demands, and (ii) they want to use a researching review on scholars' information seeking as least as possible. According to an Online Computer Library Centre (OCLC) survey for information-seeking process in library, more than 65 per cent of the students reported that they learn about new information resources from a friend; 50 per cent learn from teachers; 36 per cent from the library's website, and 33 per cent from librarians.

Kim[14] in his study about student's use of library databases found that convenient access was an important determinant of database use. Some students preferred open Internet searches to web-based subscription databases simply because of convenience. Kim went on to note that competing with Internet searching must be a priority for libraries in the future. To compete with open Internet searches and to facilitate use of web-based subscription databases, it is crucial for libraries to increase the convenience of access and awareness of the existence of the databases.

Chai[15], in some of her findings suggested that academic disciplines and achievements had some correlation with how individual students sought information. Following factors have also been studied by various authors: gender[16], academic year[17], availability of resources[16], strategies of information seeking[20, 21], grade point average[22, 23], capability in English[6,24,25], satisfaction of library facilities[26,27], and awareness of library scientific resources[1,14].

The main purpose of this study was to investigate library information-seeking behaviour among undergraduate students–academic level of Bachelor of Science (BSc)–of agricultural extension and education in Iran.

3. METHODOLOGY

The study was conducted in 2008. The statistical population of the study comprised 587 students who were studying in BSc level in public universities of Iran. Sample size was determined by using Krejcie and Morgan table. By using stratified proportional random sampling, 230 students were selected across the famous universities of Tehran, Shiraz, Mollasani, and Razi Kermanshah. Data were collected by filling out the questionnaires that had been tested before and seconded, observations, and secondary information resources (statistical references for any universities).

The questionnaire had 61 items in 7 scales, and was validated using both internal and external validity

procedures. It was primarily divided into four main sections that consisted personal characteristics of the responders (12 questions); satisfaction of library facilities (9 questions); English language capability (6 questions); strategies of information seeking (7 questions); awareness of library scientific resources (12 questions); and resources availability (15 questions). The Cronbach alpha, computed to measure reliability of the library information-seeking index, was 0.84, which showed that index was suitable. Items in tables were selected according to existence feasibilities and real satiations in universities.

Content validity of questionnaire was obtained by using a panel of university college members, and a multi-step correction and review process. Data analysis was carried out in two sections: data description and data inferential analysis. Frequencies mean, standard deviation, CV, Eta test, Scale Free technique, Principal Components Analysis method, Regression Analyses, and Correlation were used in the descriptive section.

In this study, since the indicators' units are different, using Scales Free Technique was necessary. Because of using indicators for colleges or departments instead of individuals, dividing into mean method was applied for scale free[28]. For weighting indicators, Principal Components Analysis method was used. The factors for scaling free in questionnaire were derived from analysing secondary information resources (statistical references for any university), and 30 items related to access of information resources. Therefore, the indicators' components extracted in this study to determine level of information resources availability for each university are from the academic real situations and services. Figure 1 implied the research framework.

4. RESULTS AND DISCUSSION

4.1 Demographics

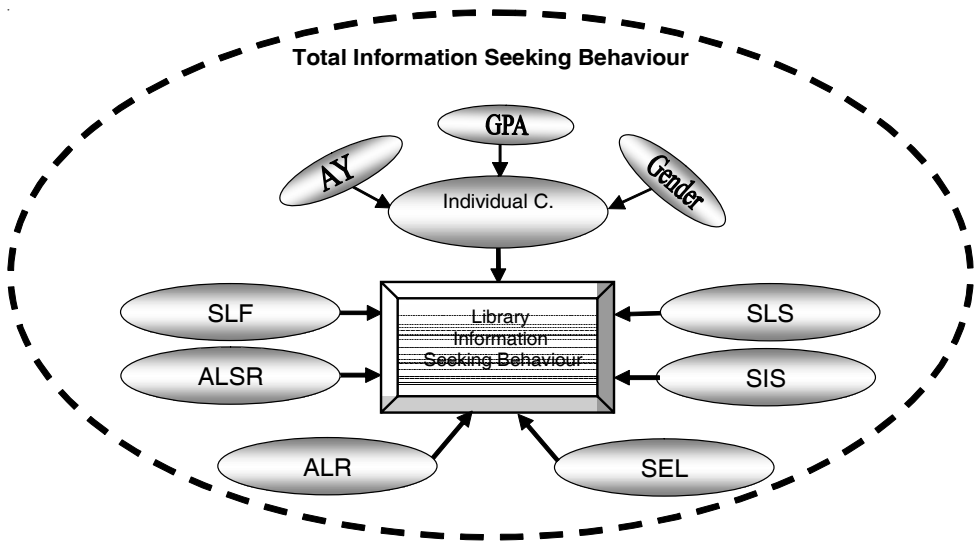
Figure 2 shows that statistical society consisted of 17 per cent agricultural extension and education students of the Tehran University, 22 per cent of the Shiraz University, 40 per cent students of the Razi Kermanshah University, and 21 per cent students of the Mollasani University. Among all the agricultural extension and education students (BSc level) 67 per cent were female and 33 per cent male.

4.2 Capability in English

To identify and compare differences among students with respect to capability in the English, F-test was used (Table 1). According to findings, significance level is different only between students of the Shiraz University and the Mollasani University.

4.3 Satisfaction of Library Facilities

Among agricultural extension and education students, items 'searching by computer' and 'updating resources' were last priorities in library facilities satisfaction, and the first item was 'library possibilities'.



AY: Academic year
GPA: Grade point average
SLF: Satisfaction of library facilities
SLS: Library seeking skills
SIS: Information seeking Strategies
ALR: Availability of information resources
ALSR: Awareness of library scientific resources

Figure 1. Research model for students' library information-seeking behaviour.

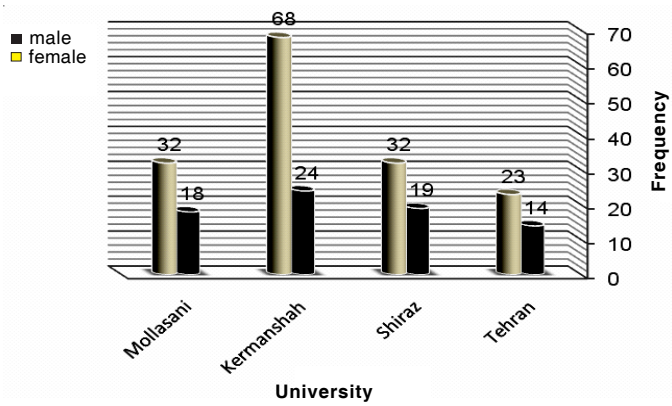


Figure 2. Frequency distribution of agricultural extension and education students.

4.4 Students' Awareness about Scientific Resources in Library

It was found that 'Farsi textbooks' and 'Farsi journals' were the main resources students used in library.

4.5 Student's Acquaintance about Library Skills

According to this study, for the most students skill in using title files and computer for searching in library was the last priority.

4.6 Information Seeking Strategy in Library

It was found that interactions (searching by asking other students and faculty) was the students' main strategy for using library (accordance with Majid and Ai, 2002 and OCLC, 2006).

4.7 Availability in Library Resources

For determining availability in library resources for students, making indicators, scale free technique and principal components analysis were necessarily utilised (Tables 2-5).

4.8 Making Indicators for Central Library Resources

4.8.1 Step 1

At first, according to Table 2, ratios were considered for the Central Library Resources at the beginning:

Indicator 1 (I1): Number of related books to the major/total number of department students.

Indicator 2 (I2): Number of librarians working in central part/total number of faculty students.

Indicator 3 (I3): Number of scientific journals/total number of department students.

Table 1. Mean difference for different universities about students' capability in English

First group	Mean	Second group	Mean	Mean difference	Standard error	Significant difference
Shiraz University	13.45	Tehran University	11.14	2.32	0.921	0.060
		Kermanshah University	11.63	1.82	0.745	0.072
		Mollasani University	10.34	3.11*	0.849	0.002

** The mean difference is significant at the 0.05 level.*

Table 2. Making indicators for central library resources

Agricultural colleges	Total number of department students	Total number of faculty students	Total number of librarians	Total number of academic field books	Number of Scientific journals	Average number of working hours for library	Average number of hours for library being used by students	Number of computers for searching	Total number of printed material (being borrowed monthly)	Total number of theses, dissertations & research plans
Tehran University	135	2200	8	73	7	8	0.4	8	12	194
Shiraz University	156	1737	6	85	7	8	0.35	4	16	81
Kermanshah University	242	1344	2	68	5	8	0.7	1	21	52
Mollasani University	141	1445	2	82	5	7	0.8	1	18	19

Indicator 4 (I4): Number of computers for searching/total number of faculty students.

Indicator 5 (I5): Average number of working hours for library per day/average number of hours for library being used by students per day.

Indicator 6 (I6): Average number of printed material, related to agricultural extension and education field, being borrowed by department students per month/total number of printed material, related to agricultural extension and education field.

Indicator 7 (I7): Number of theses, dissertations and research plans/total number of department students.

4.8.2 Step 2

In second step, each ratio was divided by total mean. Therefore:

(Mean (I_1): 550, Mean (I_2): 25, Mean (I_3): 382, Mean (I_4): 184, Mean (I_5):1576), Mean (I_6): 580, Mean (I_7):177); and II_1: I_1 /Mean (I_1), II_2: I_2 /Mean (I_2), II_3: I_3 /Mean (I_3), II_4: I_4 / Mean (I_4), II_5: I_5 /Mean (I_5), II_6: I_6 /Mean (I_6), II_7: I_7 /Mean (I_7)

4.8.3 Step 3

Weighting of indicators by Principal Components Analysis method:

W_1: 0.962, W_2: 0.944, W_3: 0.784, W_4: 0.983, W_5: 0.859, W_6: 0.826, W_7: 0.982

4.8.4 Step 4

At least, according to Table 4, the final indicators make for availability of central library resources:

Component indicators (CI) = $W_1II_1 + W_2II_2 + W_3II_3 + W_4II_4 + W_5II_5 + W_6II_6 + W_7II_7$

4.9 Making Indicators for Specialised Library Resources

The following steps (Tables 5 and 6) indicate amount of availability of specialised library resources for students. It is noticeable that in specialised libraries, in all universities, there is only one librarian and no computer for information resources searching.

4.9.1 Step 1

Following are the indicators for the specialised library resources:

Indicator 1 (I_1): Total number of related books/total number of department students.

Indicator 2 (I_2): Total number of theses, dissertations and research plans/total number of department students.

Table 3. Amount of availability of central library resources for students

Agricultural colleges	II_1 (×1000)	II_2 (×10000)	II_3 (×10000)	II_4 (×100000)	II_5 (×100)	II_6 (×100)	II_7 (×100)
Tehran University	615	36	519	360	2000	750	257
Shiraz University	609	34	449	230	2286	637	188
Kermanshah University	322	15	206	76	1142	395	158
Mollasani University	652	14	355	71	875	539	107

Table 4. Amount of availability of central library resources for students after weighting

Agricultural colleges	W_1II_1	W_2II_2	W_3II_3	W_4II_4	W_5II_5	W_6II_6	W_7II_7	Component indicators (CI)
Tehran University	1.08	1.36	1.07	1.93	1.09	1.07	1.42	9.01
Shiraz University	1.07	1.28	0.93	1.23	1.25	0.91	1.04	7.70
Kermanshah University	0.57	0.57	0.42	0.40	0.62	0.56	0.87	4.01
Mollasani University	1.14	0.53	0.73	0.38	0.48	0.77	0.59	4.62

Indicator 3 (I_3): Total number of scientific journals/total number of department students.

Indicator 4 (I_4): Average number of working hours for library per day/average number of hours for library being used by students per day.

Indicator 5 (I_5): Average number of printed materials in relation to agricultural extension and education field (monthly)/total number of printed material

4.9.2 Step 2

Availability of specialised library resources for sutdents:

Mean (I_1): 1475, Mean (I_2): 536, Mean (I_3): 16, Mean (I_4): 2145, Mean (I_5):4446; and

II_1: I_1 / Mean (I_1), II_2: I_2/Mean (I_2), II_3: I_3/Mean (I_3), II_4: I_4/ Mean (I_4), II_5: I_5/Mean (I_5)

4.9.3 Step 3

Weighting of indicators by Principal Components Analysis method:

W_1: 0.956, W_2: 0.933, W_3: 0.781, W_4: 0.008, W_5: 0.944

4.9.4 Step 4

At least, according to Table 7, the final Indicators make for availability of specialised library resources:

Component indicators (CI) = $W_1II_1 + W_2II_2 + W_3II_3 + W_4II_4 + W_5II_5$

Table 5. Making indicators for specialised library resources

Agricultural colleges	Total number of department students	Number of scientific books	Number of Scientific journals	Average number of working hours for library	Average number of hours for library being used by students	Total number of printed material (being borrowed monthly)	Total number of theses, dissertations and research plans
Tehran University	135	4500	3	8	0.74	66	186
Shiraz University	156	2300	4	8	0.40	54	71
Kermanshah University	242	1750	4	5	0.20	43	46
Mollasani University	141	420	0	3	0.10	16	17

Table 6. Availability of specialised library resources for students

Agricultural colleges	II_1 (×100)	II_2 (×1000)	II_3 (×1000)	II_4 (×100)	II_5 (×100)
Tehran University	3333	1377	22	1081	6723
Shiraz University	1473	455	26	2000	4266
Kermanshah University	723	190	17	2500	4070
Mollasani University	298	121	0	3000	2625

Table 7. Availability of specialised library resources for students after weighting

Agricultural colleges	W_1II_1	W_2II_2	W_3II_3	W_4II_4	W_5II_5	Component indicators (CI)
Tehran University	2.45	2.40	1.07	0.004	1.44	7.36
Shiraz University	0.95	0.79	1.27	0.007	0.91	3.92
Kermanshah University	0.47	0.33	0.83	0.009	0.86	2.49
Mollasani University	0.19	0.21	0	0.011	0.56	0.97

Table 8. Availability of library resources at various universities

Agricultural colleges	Central library I.	Specialised library I.	Total of indicators
Tehran University	9.01	7.36	16.37
Shiraz University	7.70	3.92	11.62
Kermanshah University	4.01	2.49	6.50
Mollasani University	4.62	0.97	5.59

Availability of library resources (Table 8), was highest in agricultural faculty of the Tehran University, and lowest in the agricultural faculty of theMollasani University.

4.10 Gender and Library Information Seeking

For determination of correlation of library information seeking and gender, Eta Test was used. Based on Eta Test (Eta= 0.12), the factor of gender is not significantly different.

4.11 Analysis of Influences Factors on Information Seeking in Library

Table 9 shows that factors like 'academic year' and 'English capability' had significant and positive correlation with students' information-seeking behaviour. Significant variables (Table 9) were found 63.7 per cent of variable of library information-seeking.

where a = is a constant, e = is a common error, Y = is a dependent variable (library information seeking) x_1, x_2, x_3 , x_4 = independent variables while:

x_1 = ALR = availability of library resources

x_2 = ALSR = awareness of library scientific resources

x_3 = GPA = grade point average

x_4 = SEL = skills of library seeking

Y = LISB = library information-seeking behaviour

$$Y = \beta_1(x_1) + \beta_2(x_2) + \beta_3(x_3) + \beta_4(x_4) + e$$

$$SSL = \beta_1(ALR) + \beta_2(ALSR) + \beta_3(GPA) + \beta_4(SEL) + e$$

$$Y = .133\ (x_1) + .361\ (x_2) + .129\ (x_3) + .328\ (x_4) + .182\ (x_5) + .219\ (x_6) + e$$

5. CONCLUSION

The results of multiple regressions show that there are several factors that have significant effect on students' library information-seeking behaviour (Fig. 3). The factors of 'grade point average', 'awareness of library scientific resources', 'skills of library seeking', and 'availability of library resources' are the main factors, and the factors of 'awareness of library scientific resources' and 'availability of library resources' are the most important factors in students' library information-seeking behaviour.

Students' strategies of information seeking in library, is to prefer verbal communication (by asking peers and faculty) instead of the main information-seeking strategy of using library. So, it seems that, student's awareness is not good enough about library searching facilities and neither about the importance of librarian's role. In other hand, it is necessary to orient the information-seeking educational courses about main information-seeking strategies and introduce the role of librarians for students.

Table 9. Correlations matrix of library information seeking and independent variables

	LISB	AY	GPA	SEL	SIS	SLS	ALSR	SLF	ALR
LISB	1	-.063	.410**	.066	.143**	.432**	.638**	.382**	.450**
AY	-.063	1	.082	.340**	-.295**	-.060	-.234**	-.213**	.129
GPA	.410**	.082	1	.375**	.440**	.221**	.362**	.449**	.006
SEL	.066	.340**	.375**	1	.043	.154*	.192*	.014	.116
SIS	.143**	-.295**	.440**	.043	1	.414**	.602**	.449**	.119
SLS	.432**	-.060	.221**	.154*	.414**	1	.417**	.130**	.066
ALSR	.638**	-.234**	.362**	.192*	.602**	.417**	1	.385**	.029
SEL	.382**	-.213**	.449**	.014	.449**	.130**	.385**	1	.062
ALR	.450**	.129	.006	.116	.119	.066	.029	.062	1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

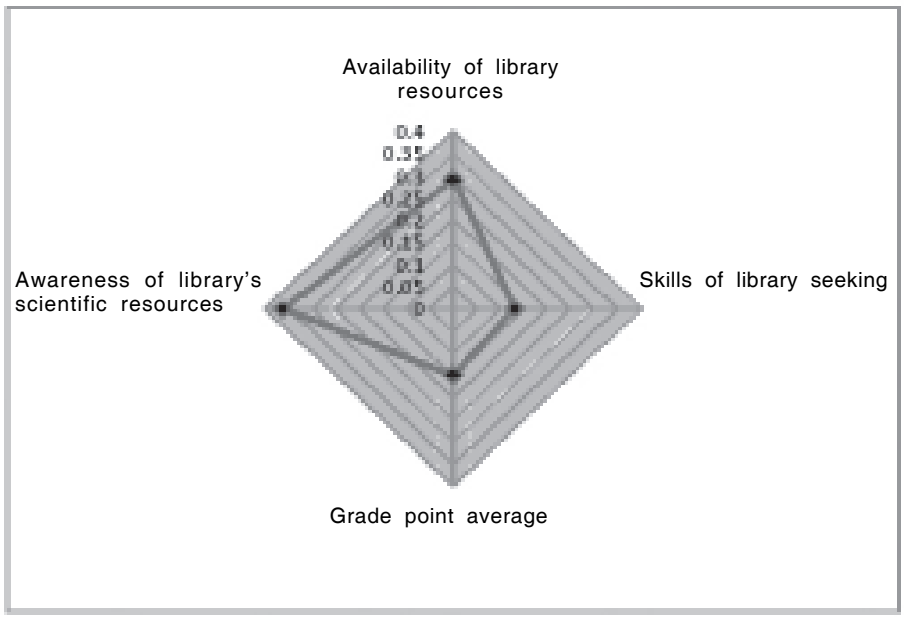


Figure 3. Frequency Beta of variables for information seeking in library.

According to study, 'Farsi textbooks' and 'Farsi journals' were the main resources for information seeking. 'Skill in the English language' influenced students' library information-seeking behaviour. Reasons may be the faculty members' orientation in teaching on Farsi library resources and few English library resources. Attention to weighting of indicators, total number of related books to field, and number of computers for searching are also the most important indicators in student's information-seeking behaviour. Therefore, the related improvement in these areas is necessary. Regarding the information resources gap in libraries, diverse universities have higher influence on students' information-seeking behaviour. Therefore, basic situations for promotion of students' information seeking in libraries, varying services, and updation of information resources in faculties and departments are necessary.

Contrary of expectations and Whitmire study in 2001, those with higher academic qualifications were also found not skilled in library information-seeking behaviour; may be because the academic courses are not oriented to promote students library information-seeking behaviour[29]. The effect of faculty member's teaching strategies is clearly important in promotion of students' information-seeking behaviour. So, usage of information should be part of all students' education[7,30,31].

According to the study, students with higher grade prefer to use library resources and have higher level of library information-seeking behaviour. It might be because of the majority of academic assignments are on printed materials. This is because faculty members rely on printed resources heavily. Also, most of undergraduate students lacked knowledge and experience in the field they were studying. So librarians and faculty members have to notice this point in order to design home works with active involvement of students[32].

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