International Journal of Information Science and Management

Reading Behavior of Graduate Students in Digital Environment at University of Isfahan through 2008-2009: A Case Study

A. Shabani, Ph.D.
University of Isfahan, Iran
Corresponding author: shabania@edu.ui.ac.ir

F. Naderi kharaji, M.S.
University of Isfahan, Iran
Email: fatemeh.naderi@edu.ui.ac.ir

M. R. Abedi, M.S.
University of Isfahan, Iran
Email: m.r.abedi@edu.ui.ac.ir

Abstract

This research attempted to study the reading behavior of graduate students in digital environment at University of Isfahan through 2008-2009. Different elements such as types of electronic resources, reading methods, amounts of note taking, amounts of printing and the advantages of using the electronic resources are being discussed. The paper employs descriptive survey research method to answer the questions. Data needed for research was gathered through a researcher-made questionnaire based on the related literature and Liu's questionnaire (2005). The statistical population used in this research consisted of the graduate students of seven departments in University of Isfahan and stratum random sampling was applied. The findings showed that students make use of different types of electronic resources. They tend to take notes from printed material and print electronic resources. They scan when they read from computer monitors. The highest advantage of reading electronic resources is acquiring update information and remote access while the least significant advantage is the ease of reading on the computer screens.

Keywords: Digital Environment, Electronic Media, Printed Media, Reading Behaviors, University of Isfahan, Graduate Students.

Introduction

The modern electronic media and publications have fundamentally changed the concept of media and given rise to a new generation of libraries: digital, virtual and electronic libraries. These changes result in predicting the end of printed materials and the appearance of a new paradigm in the realm of knowledge (Liew *et al.*, 2000).

Today we satisfy our reading needs through a vast volume of electronic texts: e-mails, web pages, online databases, electronic books, and journal articles. Digital readings are

inevitable real facts that have penetrated the people's daily lives at home, at office, and in libraries (Brown, 2001). This has vastly affected the reading patterns (Liu, 2005).

Also, the wide accessibility of digital information has increased the time spent on reading electronic documents (Liu, 2005; Ramirez, 2003). Besides, the digital environment has changed reading behavior and habits.

Statement of the problem

Changes yielded by information technology in previous decades have caused vast changes in publications, which in turn have led to information explosion. Change in reading behavior is amongst concepts of information growth. In information society, information overload and the resulting disturbance is increasing. The enhanced number of documents as well as limited time for reading them has caused several problems.

Researchers state that emergence of digital media and the nature of hypertext have altered reading behavior. Development of digital libraries and electronic resources has resulted in tendency of people to less in-depth as well as more inconsequent and non-concentrated reading (Levy, 1997).

In this information-saturated environment, a great amount of information can be acquired and the time assigned to reading the electronic resources has increased. Nevertheless, people's time for reading is limited and they cannot enhance reading time unlimitedly. Therefore, some strategies for finding the information of interest are utilized to overcome such information abundance. For instance, to find the desired information people sometimes review/scan the abstract or text, move from one part of the text to another part, or search the text to find keywords which guide them to answer the desired question (O'hara, 1996).

Considering the development of electronic resources, it is important to analyze reading in this environment for the purpose of recognizing which resources and strategies are used in this environment and which features of electronic resources are of interest to readers. It is also studied why users sometimes read from computer screen and sometimes print out electronic resources for reading.

The growth of information density of documents brought about a number of profound impacts. The growth of information density shows documents are more invisible to the human eye and more dependent on reading devices. In this digital age, for the first time records are being produced that do not exist to the human eye unlike clay tablets, paper and even microfilm. Preserving digital information without being able to access it is useless. With the developments in document media, accessibility of documents has changed (Naderi et al, 2010).

Technology has had a great impact on the reading behavior of Iranian students, and changes in the structure of universities are of significance in development programs of the

Islamic Republic of Iran. Reading in this digital era is very essential to keep up with the latest advancements and the University of Isfahan is one the most important educational centers in the central part of Iran. So, in the present study, the changes in reading media based on different elements such as types of electronic resources, reading methods, amounts of note taking, amounts of printing and the advantages of using the electronic resources are studied among the students of the University of Isfahan.

Objectives of the Study

Development of electronic resources and tendency of users towards them is the reason to study reading of the electronic resources. The present research studies what electronic resources are read, which reading strategies are used for reading them, how much the users take notes when they read electronic resources, how much of electronic resources are printed out for reading, and which features of these resources are more useful for the readers.

Review of Literature

The essence of reading has led to many research works in order to establish an understanding of the reading habits in digital environment among individuals.

Abdul Karim and Hasan (2007) found out that 74% of the respondents read newspapers and 72% of them read textbooks a few days per week. 70% read websites and 39% of the respondents read story books, articles and poetry. The results show that a considerable time is spent on reading: 80% between 3 to more than 10 hours per week, with an average of 7-9 hours per week. Internet is a source continuously used by 46% of the students.

Liu (2005) conducted a study on reading behavior in digital environment and changes in the past ten years at San José University, USA. According to his study, 67% of the respondents asserted that they spend a great deal of time for reading. They read on the computer screen in the following sequence: browsing and scanning: 80%; keyword spotting: 72%; one time reading: 56%; and reading selectively: 87%. Also, 82% of the respondents stated that the time spent on nonlinear reading has an increase while 45% reported a reduction in in-depth and concentrated reading. 54% of the respondents take notes from printed material while it is about 11% in case of electronic material; 80% of the respondents print out electronic documents for reading. The magnitude of accessible digital information has increased the time spent on reading electronic documents, and reading on screen display is flourishing. The reading behavior on screen display is more of scanning type and less time is spent on in-depth and concentrated reading.

Ismail and Avang Negah (2005), found that reasons for reading e-books include: online access, 64.2%; rapid and easy access to new titles, 45.7%; no need to visit libraries, 40.7%; quick search, 38.3%; convenience, 38.3%; being user-friendly, 21%; and 24-hour access,

16%.The reasons for not reading e- books include: preferring printed books, 45.6%; inconvenience, 28%; difficult to browse and read, 22.4% .

Ramirez (2003), found that 39.4% think to be dependent on internet for doing research since it is fast and easy. Also, 77% prefer reading paper documents and 18% prefer reading from screen display. Concerning the time allocated to reading texts on screen display, 63% read less than 1 hour; 14% read about 2-3 hours; 3.70% read between 3-5 hours, and 7.10% read more than 5 hours. 47% of the respondents print out the electronic documents.

Dilevko and Gottlieb (2002) found that 57% of users in their study chose the printed format. To them, use of printed resources provided easy annotation and note-taking. These resources allow general review of the document, unlike screen display that forces readers to read one page at a time. Reading online resources on the screen is hard, but using online resources is time-saving and is accessible at all times and places.

Research Questions

1. Which types of electronic resources are read by graduate students?
2. Which methods do graduate students employ for reading electronic resources?
3. How much annotation do the graduate students use while reading electronic resources?
4. What is the amount of printing the electronic documents for research purposes?
5. What are the advantages of electronic resources in comparison with printed resources according to graduate students?

Research Methods

Descriptive survey research method is used in this research. In performing descriptive studies, the purpose is to investigate and provide a concrete, realistic, and ordered description of characteristics of a situation or subject. In other words, researchers in such studies try to report what exists with no subjective interference or induction, and obtain concrete results out of the situation (Naderi and Seifnaraghi, 1998).

The statistical population consisted of the graduate students enrolled in seven departments (listed in Table 1) at University of Isfahan during the educational period of 2008-2009. Since the graduate students have more experience in reading electronic documents, they are selected in this study.

Table 1

The Number of M.Sc. & M.A. and PhD Students at University of Isfahan during 2008-2009

Row	Department	M.Sc. and M.A		PhD		Total
		Female	Male	Female	Male	
1	Literature and Human sciences	419	372	45	152	988
2	Physical Education	68	82	-	-	150
3	Foreign Languages	230	143	23	50	446
4	Sciences	508	229	87	122	946
5	Economics and Administrative Sciences	196	330	14	60	600
6	Education and Psychology	253	109	44	49	455
7	Technical and Engineering	99	170	9	29	307
Total		1773	1435	222	462	3892

In this research stratum random sampling is used. To determine the sample size, after preparing the tools of the study, an initial study was conducted on a group of 30 students and the sample size was estimated based on variance of society.

Herein, a researcher-made questionnaire is used for information gathering. This questionnaire is designed based on the points derived from the related literature and the Liu's questionnaire (2005). It consists of six sections. The first section deals with sociological aspects of the respondents. In the next five sections, types of electronic resources for scientific research, reading methods, the amount of annotating, the amount of printing out the electronic resources for reading, and the advantages of electronic resources are discussed. For answering the questions, five-point Likert scale is used. In order to determine the face validity of the questions, an initial questionnaire was distributed among the instructors of Librarianship and Informatics at University of Isfahan and Isfahan University of Medical Sciences, where the questionnaire was approved, and their innovative recommendations were accounted for in the final design. After determining the sample size, 320 copies were distributed in June 2009. 290 questionnaires were returned. Reliability of the questionnaire is computed in accordance with Cronbach's alpha %0.82. The gathered data has been analyzed by SPSS16 software. Initially, by using frequency, percentage and mean, findings of the research were described and then, by applying Chi-square test, the significance of reading behavior of the students was determined.

Results

In this section, we analyze the data.

A) Types of electronic resources

Table 2

The Percentage of Different Types of Reading for Electronic Resources

Level (percent)	Journals		Books		Dissertation		Reports	
	Frequency	percent	Frequency	percent	Frequency	percent	Frequency	percent
0-20	109	38.11	118	41.25	123	43	118	41.25
21-40	62	21.67	62	21.67	75	26.22	95	33.21
41-60	44	15.38	45	15.73	48	16.78	42	14.68
61-80	49	17.13	37	12.93	25	8.74	14	4.89
81-100	16	5.59	14	4.89	4	1.39	7	2.44
Sub total	280	97.88	276	96.47	275	96.13	276	96.47
No answer	6	2.09	10	3.49	11	3.84	10	3.49
Total	286	99.97	286	99.96	286	99.97	286	99.96

In order to answer the first research question, the data regarding different types of reading for electronic resources is shown in Table 2. According to Table 2, regarding reading journals, the highest level (0-20%) had frequency of 109 persons (38.11%) and the lowest level (81-100%) had frequency of 16 persons (5.59%). Concerning reading books, the highest level (0-20%) had frequency of 118 persons (41.25%) and the lowest level (81-100%) had frequency of 14 persons (4.89%). In case of reading dissertations, the highest (0-20%) and lowest (81-100%) levels had frequencies of 123 persons (43.0%) and 4 persons (1.39%), respectively. Also, the highest (0-20%) and lowest (81-100%) levels for reading reports had frequencies of 118 persons (41.25%) and 7 persons (2.44%), respectively.

Table 3

The Chi-square Values for Different Types of Reading for Electronic Resources

Types of electronic resources	Chi-Square Test	df	Sig
journals	82.82	4	0.001
books	110.92	4	0.001
dissertation	155.89	4	0.001
reports	176.13	4	0.001

In order to evaluate the significance of the answers by respondents to reading different electronic resources, Chi-square test was applied and the findings are presented in Table 3. These findings indicate that there is significance in the selection of different electronic resources.

B) Reading Methods

Table 4

The Level of Use of Different Reading Methods in Reading Electronic Resources

Level	Scanning		Critical Reading		In-depth		Serial reading		Non-serial reading		Keyword spotting		Single reading	
	Frequency	percent	Frequency	percent	Frequency	percent	Frequency	percent	Frequency	percent	Frequency	percent	Frequency	percent
Very low	13	4.54	40	13.98	30	10.48	28	9.79	14	4.89	12	4.19	7	2.44
Low	21	7.34	97	33.91	72	25.17	74	25.87	39	13.63	38	13.28	43	15.03
Average	91	31.81	112	39.16	103	36.01	127	44.4	81	28.32	94	32.86	95	33.21
High	100	34.96	33	11.53	64	22.37	45	15.73	100	34.96	101	35.31	99	34.61
Very high	60	20.97	1	0,34	15	5.24	9	3.14	48	16.87	39	13.63	39	13.63
Sub total	285	99.62	283	98.92	284	9.27	283	98.93	282	98.58	284	99.27	283	98.92
No answer	1	0.34	3	1.04	2	0.69	3	1.04	4	1.39	2	0.69	3	1.04
Total	286	99.96	286	99.96	286	99.96	286	9.97	286	99.97	286	99.96	286	99.96

Answering the third research question of this study, regarding the methods of reading, the obtained data (Table 4) revealed the amount of using different reading methods. According to Table 4, the highest and lowest levels for scanning were the levels “high” and “very low”, which had frequencies of 100 persons (34.96%) and 13 persons (4.54%), respectively. Also, the highest and lowest levels for using critical reading related to the levels “average” and “very high”, which had frequencies of 112 persons (39.16%) and 1 person (0.34%), respectively. The levels “average” and “very high” were the highest and lowest levels for using in-depth reading, which had frequencies of 103 persons (36.01%) and 15 persons (5.24%), respectively. Furthermore, the highest and lowest levels for serial reading were the levels “average” and “very high”, which had frequencies of 127 persons (44.4%) and 9 persons (3.14%), respectively. The highest and lowest levels for non-serial reading corresponded to the levels “high” and “very low”, which had frequencies of 100 persons (34.96%) and 14 persons (4.89%), respectively. Concerning keyword spotting, the levels “high” and “very low” were the highest and lowest levels, which had frequencies of 101 persons (35.31%) and 12 persons (4.19%), respectively. Besides, the highest and lowest levels for single reading related to the levels “high” and “very low”, which had frequencies of 99 persons (34.61%) and 7 persons (2.44%), respectively.

Table 5

The Chi-square Values Regarding Reading Styles Used for Electronic Resources

Reading style	Chi-Square Test	df	Sig
Scanning	109.75	4	0.001
Critical reading	152.38	4	0.001
In-depth reading	85.96	4	0.001
Serial reading	149.77	4	0.001
Non-serial reading	82.92	4	0.001
Keyword spotting	105.89	4	0.001
Single reading	110.02	4	0.001

In order to evaluate the significance of the answers expressed by respondents, Chi-square test was applied whose findings are provided in Table 5, indicating that there is significance in different uses of reading styles.

C) Amount of Annotation

Table 6

The Percentage of Annotation in Electronic and Printed Resources

Level	Electronic resources		Printed resources	
	Frequency	percent	Frequency	percent
Very low	40	13.98	12	4.19
Low	98	34.26	65	22.72
Average	84	29.37	102	35.66
High	48	16.78	83	29.02
Very high	14	4.89	23	8.04
Sub total	284	99.28	285	99.63
No answer	2	0.69	1	0.34
Total	286	99.97	286	99.97

According to Table 6, the highest and lowest amounts of annotation when reading the electronic resources correspond to the levels “low” and “very high”, which had frequencies of 98 persons (34.26%) and 14 persons (4.89%), respectively. Concerning printed resources, the levels “average” and “very low” with frequencies of 102 persons (35.66%) and 12 persons (4.19%) were the highest and lowest levels, respectively.

Table 7

The Chi-square Values Regarding the amount of Annotation from Electronic and Printed Resources

Level of Annotation	Chi-Square Test	df	Sig
Electronic Resources	152.07	4	0.001
Printed Resources	104.31	4	0.001

The results of Chi-square test are expressed in Table 7, indicating that there is significance in the amount of annotation from electronic and printed resources.

D) Amount of Printing

Table 8

The Amount of Printing the Electronic Resources

Level (percentage)	printing electronic resources	
	Frequency	percent
0-20	31	10.83
21-40	66	23.07
41-60	68	23.77
61-80	81	28.32
81-100	39	13.63
Sub total	285	99.62
No answer	1	0.34
Total	286	99.96

Answering the fourth research question of this study, the amount of printing the electronic documents is evaluated. Table 8 shows that the highest (61-80%) and lowest (0-20%) amounts of printing out the electronic documents had frequencies of 81 persons (28.32%) and 31 persons (10.83%), respectively.

Table 9

The Chi-square of Printing the Electronic Resources

The amount of printing the electronic resources	Chi-Square Test	df	Sig
printing	31.19	4	0.001

The results of Chi-square test are provided in Table 9, indicating that there is significance in the amount of printing out the electronic resources.

E) Advantages of Electronic Resources

Table 10

The Percentage of the Advantages of Electronic Resources

The advantages of electronic resources	The lowest priority 1		The priority 2		The priority 3		The priority 4		The highest priority 5		Sub total		No answer		total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
24-hour access	19	6/64	38	13/28	51	17/83	66	23/07	111	38/81	285	99/63	1	0/34	286	99/97
Quick access to information	13	4/54	22	7/69	42	14/68	73	25/52	132	46/15	282	98/58	4	1/39	286	99/97
Remote access	14	4/89	24	7/39	35	12/23	58	20/27	152	53/14	283	97/92	3	1/04	286	99/96
Many users using one document	19	6/64	28	9/79	53	18/53	65	22/72	118	41/25	283	98/93	3	1/04	286	99/97
Up-to-date information	11	3/84	23	8/04	25	8/74	66	23/07	159	55/59	284	99/28	2	0/69	286	99/97
Cut & paste of quotations	30	10/48	32	11/18	70	24/47	64	22/37	85	29/72	281	98/22	5	1/74	286	99/96
Link to additional information	19	6/64	40	13/98	71	24/82	88	30/76	63	22/02	281	98/22	5	1/74	286	99/96
Search capabilities	10	3/49	30	10/48	34	11/88	78	27/27	130	45/45	282	98/57	4	1/39	286	99/96

The advantages of electronic resources	The lowest priority 1		The priority 2		The priority 3		The priority 4		The highest priority 5		Sub total		No answer		total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Saving time	12	4/19	28	9/79	45	15/73	68	23/77	130	45/45	283	98/93	3	1/04	286	99/97
ease of reading from computer screen	49	17/13	66	23/07	78	27/27	50	17/48	40	13/98	283	98/93	3	1/04	286	99/97
Ability to get an overview of document structure	22	7/69	46	16/08	92	32/16	81	28/32	39	13/63	280	97/88	6	2/09	286	99/97
Ease of predicting length of document and switching back and forth between sections/pages	26	9/09	44	15/38	73	25/52	69	24/12	70	24/47	282	98/58	4	1/39	286	99/97

A thorough and careful study of Table 10 provides us with outcome as far as categorization of the lowest and highest advantages is concerned. So, according to Table 10 and regarding reading the electronic resources, the highest (5) and lowest (1) priorities for the advantage of 24-hour access had frequencies of 111 persons (38.81%) and 19 persons (6.64%), respectively. Also, the highest (5) and lowest (1) priorities for the advantage of quick access to information had frequencies of 132 persons (46.15%) and 13 persons (4.54%), respectively. In case of the advantage of remote access, the highest (5) and lowest (1) priorities had frequencies of 152 persons (53.14%) and 14 persons (4.89%), respectively. For the advantage that many users can simultaneously use a single document, the highest (5) and lowest (1) priorities had frequencies of 118 persons (41.25%) and 19 persons (6.64%), respectively. Regarding the advantage of up-to-date information, the highest (5) and lowest (1) priorities had frequencies of 159 persons (55.59%) and 11 persons (3.84%), respectively. The highest (5) and lowest (1) priorities for the advantage of

cut and paste of quotations had frequencies of 85 persons (29.72%) and 30 persons (10.48%), respectively. For the advantage of link to additional information, the highest (4) and lowest (1) priorities had frequencies of 88 persons (30.76%) and 19 persons (6.64%), respectively. Also, the highest (5) and lowest (1) priorities for the advantage of search capabilities had frequencies of 130 persons (45.45%) and 10 persons (3.49%), respectively. Concerning the advantage of being time-saving, the highest (5) and lowest (1) priorities had frequencies of 130 persons (45.45%) and 12 persons (4.19%), respectively. Besides, the highest (3) and lowest (5) priorities for the advantage of ease of reading from computer screen had frequencies of 78 persons (27.27%) and 40 persons (13.98%), respectively. For the advantage of ability to get an overview of document structure, the highest (3) and lowest (1) priorities had frequencies of 92 persons (32.16%) and 22 persons (7.69%), respectively. Finally, for the advantage of ease of predicting the length of document and switching back and forth between sections/pages, the highest (3) and lowest (1) priorities had frequencies of 73 persons (25.52%) and 26 persons (9.09%), respectively.

Table 11

The Chi-square Test of the Advantages Provided by Reading Electronic Resources

The advantages of electronic resources	Chi-Square Test	df	Sig
24-hour access	84.87	4	0.001
Quick access to information	164.27	4	0.001
Remote access	219.91	4	0.001
Many users using one document	107.51	4	0.001
Up-to-date information	260.22	4	0.001
Cut & paste of quotations	41.86	4	0.001
Link to additional information	52.00	4	0.001
Search capabilities	163.74	4	0.001
Saving time	169.45	4	0.001
ease of reading from computer screen	61.31	4	0.001
Ability to get an overview of document structure	61.89	4	0.001
Ease of predicting length of document and switching back and forth between sections /pages	30.09	4	0.001

In order to evaluate the significance of the answers expressed by the respondents regarding the advantages of reading electronic resources, Chi-square test was applied whose findings are provided in Table 11, indicating that there is significance in the

advantages provided by reading electronic resources.

Conclusion

The presented statistical results indicate a few features regarding the reading in electronic environment. These features are briefly presented as follows:

University students make use of different types of electronic resources. On computer screen, they usually read as scanning, keyword spotting, and non-serial/nonlinear while they less read as in-depth, critical, and serial/linear. In information age, people spend much time on reading because of two reasons: 1. information explosion and 2. information technology.

Searching digital documents is easy and in addition it provides the access to information since each document has some links to electronic resources. To overcome this saturation in information environment, users usually are inclined to scanning and non-serial reading of documents on computer screen. Students satisfy their own information needs from a collection of printed and electronic resources and print out documents mostly for in-depth reading and taking notes. In printed documents, taking note is easy and does not distract reading. During reading the printed documents, the reader can underline the points of importance, number the important issues, and write down some sentences in the margin. Nevertheless, in electronic documents these activities distract reading and require the interaction with mouse and keyboard.

Students use electronic resources due to possibility of remote access to information, not having to personally visit the library, quick access to information, and saving time. Additionally, several users can simultaneously use a single document. The problem that users of printed resources are encountered with is that their document of interest may have been borrowed by another user, while this is not the case with the electronic resources and users have 24-hour access to these resources. However, the most significant disadvantage of reading the electronic resources from users' viewpoint is reading from computer screen as it makes the user's eyes tired. Also, scrolling the document for reading upper and lower parts of the document increases the tiredness of the user. In spite of differences between printed and electronic documents, it seems that digital reading (reading electronic resources) is growing among the users, though it has not completely replaced reading the printed resources.

References

Abdul Karim, N. & Hasan, A. (2007). Reading habits and attitude in the digital age: Analysis of gender and academic program differences in Malaysia. *The Electronic Library*, 285-298. Retrieved on April 26, 2008 from http://dlist.sir.arizona.edu /798/01/ SR30_4_Goodman.doc

Brown, G. J. (2001). Beyond print: reading digitally. *Library Hi Tech*, *19*, 390-399. Retrieved on April 26, 2008 from www.emeraldinsight.com/10.1108/ 07378830110412456

Dilevko, J. & Gottlieb, L. (2002). Print sources in an electronic age: A vital part of the research process for undergraduate students. *Journal of Academic Librarianship*, *28* (6), 381–392. Retrieved on April 26, 2008 from linkinghub.elsevier.com/retrieve/ pii/S0099133302003415

Ismail, R. & Awang Negah, Z. (2005). The pattern of e-book use amongst undergraduate in Malaysia: A case know is to use. *Malaysian Journal of Library & Information Science*, *10* (2), 1-23. Retrieved on April 26, 2008 from majlis.fsktm.um.edu.my /document.aspx?FileName=327.pdf

Levy, D. M. (1997). I read the news today, oh boy, reading and attention in digital libraries. *Proceedings of the 2nd ACM International Conference on Digital Libraries*, Philadelphia, PA, 202-11.

Liew, C. L., Foo, S., & Chennupati, K. R. (2000). A study of graduate student end-users: Use and perception of electronic journals. *Online Information Review*, *24* (4), 302–315. Retrieved on April 20, 2008 from www.emeraldinsight.com/Insight/html/ Output/Published/.../2640240404.pdf

Liu, Z. (2005). Reading behavior in the digital environment: Changes in reading behavior over the past 10 years. *Journal of Documentation*, *61* (6), 700-12. Retrieved on April 6, 2008 from www.emeraldinsight.com/**10**.1108/00220410510632040

Naderi, E. & Seif Naragi, M. (1998). *Research methods and how to evaluate it in humanities.* Tehran: badr.

Naderi, F. et al. (2010). *Reading in the digital age.* Tehran: Chapar Publication.

O'Hara, K. (1996). Towards a typology of reading goals. Technical Report EPC-1996-107. Retrieved on April 6, 2008 from http://www. xrce. xerox. com/publis/cam-trs/pdf/1996 /epc-1996-108. pdf

Ramirez, E. (2003). The impact of the internet on the reading practices of a university community: The case of UNAM. Paper presented at the World Library and Information Congress: 69th IFLA General Conference and Council, Berlin, August 1-9. Retrieved on April 16, 2008 from ifla.queenslibrary.org/IV/ifla69/papers/019e-Ramirez.pdf.