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Impact of the Internet surfing on reading practices and choices

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Abstract

Reading in the 21st century networked society is no longer confined to the print reading. The scope of the reading has extended to the Internet sources that changed the traditional reading culture of the readers. The present study was conducted to identify the impact of the Internet surfing on reading practices and choices of the net generation college students. The survey method was applied to conduct the study and a questionnaire was used as a data collection tool. A sample of 676 students was selected from different strata based on gender, region and faculty in the degree colleges of the Kashmir region, Jammu and Kashmir state, India. In the sample size only 302 confirmed themselves as the e-readers and their responses were analyzed. Results reveal that the reading behavior of the online readers is in transition as the Internet surfing has increased non-sequential reading, interactive reading, superficial reading, and extensive reading and at the same rates is responsible for decreasing concentrated and in-depth reading. Plus, the Internet surfing has increased reading of the news & views, general knowledge, selected fields, sexual content, spiritual/religious text and has decreased reading of literature. To validate the results, the findings were correlated with earlier studies and hypotheses were formed and tested using the Chi-square test. However, the students have not experienced any electronic reading device like kindle (of Amazon) or iPod (of Apple) during browsing the electronic sources and it could be the future area of research.

Keywords

Reading; Online reading; Reading practices; Reading choices; Internet surfing; College students

Introduction

Reading is one of the oldest habits of human civilization. It has been the passion of the greatest personalities of all times. One of the first documentary sources for reading was manuscript, however, accessible only to the elite class of society. Later, the arrival of the Gutenberg printing press ended such discrimination by making the printed word available to all. The Gutenberg printing press brought drastic changes to the fundamentally oral society of the day. It was certainly a great jump in the humanity's onward march to the reading society. The emergence of the Internet has created an extraordinary change in the reading culture. It has made its existence, fully or partially, in the reading behavior of the people. Presently, reading is no longer confined to the print reading. The scope of reading sources has changed drastically in the Internet revolution to include web sites, web pages, e-books, e-journals, e-papers, e-mail, discussion boards, chat rooms, instant messaging,

blogs, wikis, and other multimedia documents. Now the potential reader can access and browse the online information from the whole web while using his/her terminal at home.

The hypertext and hypermedia technologies allow the e-readers to go from one page to another by selecting links in various directions popularly known as surfing. The term *Surfing of Internet* was first used by Jean Armour Polly in 1992 and defined it as "browsing the Internet while going from one page to another ..." (Polly, 1992). The Internet surfing enables to navigate a world full of interconnected information, discover new sites, read up-to-date information, and download things of interest. Surfing the Internet has become a daily routine of the new generation. The present generation especially the college students are well versed with the new technologies and their application in present networked society. [Roberts and Foehr](#) (2004) observe that the Internet has fixed deep roots in the lives of the net generation students than all other technological innovations.

[Williamson](#) (2008) reports that out of 18.0 million college students 17.1 million (95.0%) go online at least once in a month during 2007 and out of 18.2 million, 17.4 million (95.7%) use Internet once in a month during 2008 in United States of America (USA). [Bowman](#) (2002) reports that students turn to the Internet first, when faced with a question or an assignment for class. [Ramirez](#) (2003) is of the opinion that the young generation who have more experience with computers and grow up with this technology will reveal different attitude towards reading in digital environment. This union of the Internet and students compels researchers to take a new look on their reading habits. Therefore, the present study is conducted to investigate the impact of the Internet surfing on the reading practices and choices of the net generation students.

Related literature

The researchers all over the world have discussed the impact of the Internet on reading at theoretical level via opinions and arguments but very few studies are based on the research and experiments. [Liu](#) (2005) argues that the nature and purpose of reading seems to deviate from the traditional reading methods, which are brief, linear and less structured. He further observes that people are less engaged in the extensive reading and lack the ability to read deeply in the hypertext environment. [Birkerts](#) (1994) observes that the order of the print is linear and the print material is static whereas the Internet surfing is non-linear and interactive and reader is free to read in any direction. He also believes that the younger generation growing up in the digital environment lacks the ability to read deeply and to sustain a prolonged engagement in reading. He further observes that the digital environment tends to encourage people to explore many topics extensively, but at a more superficial level.

[Elizabeth](#) (2003) observes that the Internet content has blinking graphics, vivid color, and lots of eye-catching phrases that can guide or distract from the reading. [Liu](#) (2005) advocates that the screen based reading behavior is characterized by more time on browsing and scanning, keyword spotting, one-time reading and non linear reading; while less time is spent on in-depth reading and concentrated reading. [Ramirez](#) (2003) reveals that only 3.7 percent of the respondents do not find it difficult to understand what they read on screen, and 68 percent finds it easy to understand printed text, whereas 24.9 percent understands the contents of both formats: printed and digital. [Chartier](#) (2004) believes that reading in front of the computer screen is generally a discontinuous reading process and is done without the identity or coherence of the entire text from which the fragment is extracted.

[Dykeman](#) (2008) reports that there is no doubt that the way we read the web pages have a major impact on what we read, how long we read, and how attentively we read when on-

line. However, digital reading is capturing an increasingly large slice of total reading time. [Liu](#) (2005) advocates that the age factor contributes to the reading behavior on the Internet as the younger people can tolerate more time reading the screen-based materials whereas [Broddason](#) (2006) argues that even the younger computer users do not enjoy reading from the screen. [Behler](#) (2009) also argues that reading on the computer screen for long periods of time is not most people's cup of tea and leads to hundreds of pages long printouts. [Liu](#) (2005) depicts that over 80 percent of the participants always or frequently print out the electronic documents for reading but none of the participants report that they never print out the electronic documents for reading. [Cushman](#) (1986) finds that visual fatigue is significantly higher when reading texts on a screen than on paper. He also believes that e-book technology has a long way to go before it can equal the readability and richness of p-books.

[Brown](#) (2001) also observes that poor screen resolution has made sustained reading tiresome and difficult, but now the current technological improvements and reader software enhancements as well as the promising developments of very bright, lightweight and power efficient screens bring us one step closer to paper-like reading experience. [Burk](#) (2001) reports that corporate giants Microsoft and Adobe Systems have developed sophisticated e-book reader software that enhances the electronic reading experience. Hardware manufacturers such as Gemstar and Franklin continue to produce new reading devices. Yet despite of numerous advantages offered by various e-book readers and despite the widespread popularity of personal digital assistants (PDAs) and pocket PCs capable of reading electronic books, the e-book market has thus far failed to materialize. In spite of all new technological developments in screens, text formats, and reading devices like LCD screen, PDF and Adobe Reader have been designed to make e-reading easy; however, screens are yet not optimal for the continuous, in-depth, and concentrated reading.

Researchers believe that the Internet has not only affected the reading practices but reading choices as well. The Internet has become the World Bank of information containing information on any field of knowledge. It contains a wide range of information sources from the online versions of print equivalents to born digital sources, image galleries to multimedia reference works, bibliographic indexes to full text databases, plain text to digitized facsimile, primary to tertiary documents, local to global and commercial to open access sources. [Lee, Guttenberg and McCrary](#) (2002) reveal that 93 percent of all the newly produced information is being created on a digital format. The digital archives like Amazon, Internet Archive, Google Books, Gutenberg project, Directory of Open Access Journals (DOAJ), Directory of Open Access Repositories (OpenDOAR), Directory of open Access Books (DOAB), NetLibrary, Questia, ebrary, and many others provide access to the billions of web pages. The availability of enormous information on varied subjects at one place is supposed to highly affect the reading choices of the Internet users. [Loan](#) (2011) reports that the Internet has increased access to information, use of foreign sources, contacts with worldwide readers and time spent on reading, and has decreased dependence on print sources, contacts with print sources, reading in local languages and reading of books.

[Kaye and Johnson](#) (2004) affirm that the main aim of users accessing the Internet is to read breaking news and search for up-to-the minute information. [Bergstrom](#) (2006) reveals that users have greatly increased the news reading habits due to the Internet surfing. The [National Endowment for the Arts, USA](#) (2005) estimates that the number of adults who read no literature increased by more than 17 million between 1992 and 2002. It is also found that 47 percent of American adults read poems, plays or narrative fiction in 2002, a drop of seven percentage points from a decade earlier. Impact of the Internet on reading practices and tastes is widely discussed in both academic as well as non-academic settings

but no systematic research has been conducted so far. The present study is a step forward in this direction.

Research Design

Purpose of the study

The specific objective of the present study is to identify the impact of Internet surfing on reading practices and choices of the net generation college students.

Hypotheses

Hypothesis I

H_0 = Internet surfing does not change the traditional reading practices.

H_1 = Internet surfing has changed the reading practices.

Hypothesis II

H_0 = Internet surfing does not change the reading choices.

H_1 = Internet Surfing has changed the reading choices.

Scope of the study

The scope of the present study is limited to the students of the degree colleges of Kashmir, covering the age group of 18-25 years. The population is a unique occupying a middle ground between childhood and adulthood and between work and leisure.

Methodology

Sample Size

The statistical sampling formula was applied to obtain the sample size of the population.

$$n = \frac{Z^2 Npq}{Ne^2 + Z^2 pq}$$

Where,

Z = Probability given under 96.5% reliability

N = Population or universe

E = Sampling error

pq = Proportion of the total population

The population of the undergraduate students in the academic colleges of the Kashmir Valley was 54,191. The value of the proportion of the total population (pq) was obtained from rural and urban ratio. Further, to ensure an optimal sample size, the 96.5% confidence level was pre-assigned and a small sampling error (0.04) was fixed.

$$n = \frac{Z^2 Npq}{Ne^2 + Z^2 pq} = \frac{(2.1)^2(54191)(0.54)(0.46)}{(54191)(0.04)^2 + (2.1)^2(0.54)(0.46)}$$

$$n = 676.11 = 676$$

Using the population allocation method, 676 college students were selected from the degree colleges of the Kashmir Valley from different strata based on gender, region and faculty.

Data Collection

The survey method was used to conduct the study and questionnaire was used as a data collection tool. Before drafting the questionnaire, the relevant literature was reviewed and analyzed which provided some directions in drafting the questionnaire. After the questionnaire was drafted, it was pre-tested with 30 students. The questionnaire was then simplified (some of the terms like interactive reading were defined/elaborated) according to the responses of the pre-test to make it understandable. Later, the data was collected from the college students during classes. The questionnaire was administered personally to ensure the excellent response rate as well as to avoid any misunderstanding while providing responses.

Data Analysis

Out of 676 students only 302 were e-readers and hence finally the data collected from the e-readers was properly analyzed using different statistical and quantitative techniques and presented in simple tabular forms. Besides correlating results with earlier studies, the *Chi-square* test was applied for the testing and verification of hypotheses.

Results

Impact on Reading Practices

The data (Table 1) reveals that Internet surfing has altered the reading practices of the students. Majority of the students admit that the Internet surfing increases interactive reading (77.15%), superficial reading (70.20%) and decreases sequential reading (62.25%), concentrated reading (60.60%) and in-depth reading (50.99%). The 47.35 percent students also admit that the Internet surfing increases extensive reading whereas 40.40 percent students believe that it decreases extensive reading (Table 1).

To test the hypothesis I, the chi-square (X^2) goodness data test is applied. The tabulated value of chi-square (X^2) at 5% level of significance ($\alpha=0.05$) and degree level of freedom $(r-1)(c-1) = (6-1)(3-1) = 10$ is 18.307. Since, the calculated value of Chi-square ($X^2=544.38$) is much higher than the tabulated value at 5% level of significance. Therefore, the null hypothesis (H_0) is strongly rejected and alternative hypothesis (H_1) is accepted. Thus, the inference can be drawn from the testing and verification of hypothesis that surfing strongly impacts on the reading practices. On analyzing the calculated value of Chi-square (X^2) individually, the inference can be drawn that the highest impact is on interactive reading followed by the superficial reading, sequential reading and concentrated reading respectively and least on extensive reading followed by in-depth reading. These results come as no surprise because several studies have already shown the same trend ([Birkerts, 1994](#); [Ramirez, 2003](#); [Liu, 2005](#)).

Table 1. Impact on reading practices

Impact on Reading Practices	Increases	Decreases	No Change	Calculated Chi-square

Interactive Reading	233/302 (77.15)	10/302 (3.31)	59/302 (19.54)	194.68
Sequential Reading	32/302 (10.60)	188/302 (62.25)	82/302 (27.15)	117.84
Superficial Reading	212/302 (70.20)	34/302 (11.26)	56/302 (18.54)	124.92
Concentrated Reading	55/302 (18.21)	183/302 (60.60)	64/302 (21.19)	76.86
In-depth Reading	97/302 (32.12)	154/302 (50.99)	51/302 (16.89)	18.21
Extensive Reading	143/302 (47.35)	122/302 (40.40)	37/302 (12.25)	11.87

Note: Figures in parenthesis indicate Percentage

Impact on Reading Choices

The data (Table 2) shows that the Internet surfing has affected the reading choices of the students. Majority of the students agree that the Internet surfing increases reading of news & views (85.76%), pornography & sexual content reading (74.50%), reading of selected fields (64.90%), general knowledge reading (61.59%), and decreases reading of literature (48.01%). The 48.34 percent students also believe that Internet surfing increases reading of spiritual/religious text whereas 38.74 percent claim that it decreases reading of spiritual/religious information (Table 2).

Table 2. Impact on reading choices

Impact on Reading Choices	Increases	Decreases	No Change	Calculated Chi-square
General Knowledge	186/302 (61.59)	69/302 (22.85)	47/302 (15.56)	0.04
Select Fields	196/302 (64.90)	58/302 (19.21)	48/302 (15.89)	3.22
News & Views	259/302 (85.76)	16/302 (5.30)	27/302 (8.94)	81.69
Literature (Prose/Poetry etc.)	93/302 (30.79)	145/302 (48.01)	64/302 (21.19)	128.28
Spiritual/Religious Text	146/302 (48.34)	117/302 (38.74)	39/302 (12.91)	39.01
Pornography & Sexual content	225/302 (74.50)	23/302 (7.62)	54/302 (17.88)	42.63

Note: Figures in parenthesis indicate Percentage

To test the hypothesis II, again the chi-square (χ^2) goodness data test is applied. The tabulated value of chi-square (χ^2) at 5% level of significance ($\alpha=0.05$) and degree level of freedom $(r-1)(c-1) = (6-1)(3-1) = 10$ is 18.307. Since, the calculated value of Chi-square ($\chi^2=294.87$) is much higher than the tabulated value at 5% level of significance. Therefore, the null hypothesis (H_0) is strongly rejected and alternative hypothesis (H_1) is accepted. Thus, the inference can be drawn from the testing and verification of hypothesis that surfing strongly impacts on the reading choices. On analyzing the calculated value of Chi-square (χ^2) individually, the inference can be drawn that the highest impact is on literature followed by news & views, pornography & sexual content and spiritual/religious

text and least on General knowledge followed by select fields. The results are supported by earlier studies like [Nielson](#) (2003); [Kaye and Johnson](#) (2004); [National Endowment for the Arts](#) (2005) and [Bergstrom](#) (2006).

Discussion

In an increasingly networked environment, the new generation readers gradually develop the new reading behavior and increasingly change their traditional reading practices. The students believe that the Internet surfing increases interactive reading, superficial reading and extensive reading and at the same rates decreases sequential reading, concentrated reading and in-depth reading. The alarming factor is the decrease in the concentrated and in-depth reading. It indicates that the online readers have to use print sources for the in-depth and concentrated reading. These practices of reading are very essential for actual consumption of information and knowledge to qualify educational as well as competitive examinations.

The possible reasons for decline in the concentrated reading during the Internet surfing are hyperlinks embedded in the web resources, blinking images on the Web, opening of unwanted web sites and scrolling & turning of pages. These problems need to be solved for reading with full concentration during surfing. The possible solutions are to take printout of the web documents for reading or save them on computer and read offline. Opening of unwanted web sites should be dealt technologically. The firewalls should be installed to block them. The students should also avoid clicking on unwanted web sites, blinking pictures, attractive screen savers, irrelevant headings, etc. to be more focused while surfing. This will definitely help them to browse the Internet with full concentration. Moreover, the new technological reading devices like kindle of Amazon can make e-reading easy for the continuous, in-depth, and concentrated reading. The other possible factor responsible for decrease in the in-depth reading is that the students are possibly surfing on the free portion of the web where the subjects are not discussed deeply but extensively. Moreover, they may not be aware about the deep web and open access web resources. The need is to make the Internet users aware about the deep web collection and its search tools where they can find the qualitative documents for in-depth reading. The other possible solution can be to subscribe the qualitative web resources for the college students as well through consortia and other means.

The students admit that the Internet surfing increases reading of news & views, general knowledge, selected fields and spiritual/religious text. This is positive sign that students are reading more in online environment. However, at the same time majority of the students believe that the Internet surfing increases pornography & sexual content reading/viewing as well. This negative use should be dealt diplomatically. The awareness raising programmes can play a better role in this regard. Moreover, the web sites providing access to pornographic material and information harmful to national integrity, etc. should be blocked using the technological solutions like firewalls. The other concern is decrease in reading of literature. The possible reasons are lack of awareness of literary collection, lack of adequate literary collection and lack of access to literary collection. The need is to aware students about literary collection on the Web like Gutenberg Book Project which gives free access to literary collection of famous writers like William Shakespeare. The copyright owners of the literary works should also make their electronic editions available on the Web as it will enrich the literary collection on the Internet. The other solution could be to subscribe the literary collection for increasing literature reading habits of students.

Conclusions

The study reveals that that the Internet surfing has a great impact on the traditional reading practices. The reading practices are in transition:

From	To
Sequential reading	Non-sequential reading
Passive reading	Interactive reading
Concentrated reading	Superficial reading
In-depth reading	Extensive reading

Indeed, the Internet offers a great wealth of information for readers on any branch of knowledge under the Sun. The reader is free to read any kind of information on any topic of interest as the Internet provides access to hundreds of hits in a fraction of seconds. Therefore, the online readers especially students need to be cautious and focused while the Internet surfing so that the Internet can be used as an enhancement reading tool. However, despite providing meaningful insights on the impact of the Internet surfing on the reading practices and choices, the study suffers from some caveats. One major limitation of the study is its sample size and sample frame which consists of the college students. This makes it difficult to generalize the results across the different sections of the society. Secondly, the students have not experienced any electronic reading device like kindle (of Amazon) or iPod (of Apple) during browsing and that could be the future area of research.

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