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The impact of the Internet on the reading practices of a university community: The case of UNAM"

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Abstract

This lecture presents the general results of a survey with college students of the Schools of Philosophy and Literature and Sciences of National University of México (UNAM to pinpoint the changes that the use of Internet has had on the reading practices of subjects with a high educational level from the usual reading habits of printed book culture in order to make a reflection upon the new role of libraries. The questions were prepared in such a way that the subjects could not foresee the results regarding Internet trends, and were based on four issues: experience, uses, new practices and perception

Introduction

The Internet phenomenon, comparable to the invention of print in the 16th century, took hold during the late 20th century. It was, in fact, electronic mail that made it possible to successfully incorporate the Internet into our world. The idea of reducing the time and space barrier within the communication process, formerly the almost exclusive domain of the telephone, made E-mail a fascinating prospect. Then, a world of textual and audiovisual information, accessible through a computer screen in the reader's control, became available

and could be adapted for a variety of uses: education, research, information, entertainment, business and, of course, the exchange of information.

While libraries made printed books the liberation tool of 18th-century western society, and reading became widespread among the general public in the20th century, the question now is what role will libraries and books play in 21st-century society, in which Internet and digital technology predominate?

I believe it is essential to explore the effects of the Internet on our communities, since it has begun to take over the space, time and even minds of individuals. The Internet seems to represent a free territory of sorts, where an array of wishes can come true. Though only a metaphor now, the idea exists that with a virtual library, for example, users will be able to access and have absolute power over all existing information. This, then, leads to the possibility of eliminating printed books and, consequently, traditional libraries, as well as other elements such as photography, archives, videocassettes and so forth.

Anne-Marie Chartier and Jean Hébrard have addressed one of the problems digital literature might pose for libraryship, in terms of scholastic reading., because the information currently found on the Internet is utilitarian and specialized to an extreme[1]. Add to that the speed at which it is read, and writing and reading could turn into the mere act of text production rather than the creation of literature.

There is no doubt that new information and communication technology (ICT) offers huge opportunities, but it also creates paramount problems that must be studied so as not to lose sight of our role in history. Certainly these times require a reading model, but which one should it be? This topic that the Reading Section has opened up to analysis and discussion is most timely.

Background

The incorporation of information and communication technology into the world of the written word has produced a brand new reader-text relationship. As is well known, not only do the features of electronic technology modify the ways knowledge and information are physically conveyed, they are also transforming textual structures with new organization tools. Text may now be accompanied by fixed or moving images, graphs, icons and even sounds. All of these elements may be integrated and interact within a single document, which the reader will then transform to suit his/her interests. The outcome is a means of communication that is totally different from traditional printed text.

As for electronic writing, it has begun to establish its own rules. On the screen, reading has stopped being linear and has become “polyhedral” due to the diversity of forms,

[1] Chartier , Anne-Marie y Jean Hébrard. . *La lectura de un siglo a otro.* Barcelona: Gedisa, 2002. 205 p.

as De la Heras[2] put it, or "geometrical and associative," according to Bolter[3], or "meta-reading" in the words of Bazin[4]. Digitally, while readings are linear (as in printed text), they may also be sequential, in other words appearing in text segments, images and interfaces. Reading becomes a way of navigating or "driving", using the mouse as a kind of steering mechanism to direct and coordinate progress, and a mental process aimed at establishing relationships and directing routes through the myriad of options that may be taken in the cybernetic network.

So we can say that just when word processors and the Internet transformed the way we produce, transfer and transmit written discourse, the order established by the printed page also changed, as proven by the hypertext structure. Now that writing, editing, transferring and reading may be carried out digitally in a single process, each one of these operations acquires a new form of knowledge representation. All this makes us suppose that reading practices will also be influenced. I understand that such practices reflect cultural characteristics (historical period, ideology, socioeconomic status, family and educational background, social environment, technology, etc.), in other words, the set of individual and collective experiences and knowledge that an individual or group possesses. Since the practices interact among themselves, they are not entirely static. Some remain as they are, while new ones emerge and others evolve. The alphabet, the codex format and printing are a few examples of this. They are among the factors that have led to practices of written communication, so that the page becomes a depiction. Moreover, the qualities of the physical object containing the text determine the possibilities for its circulation, leading to particular reading practices, which, observed in their entirety, enable distinguishing time periods, peoples, groups, genders and ages.

The other major subject is the Internet, which has even been called a revolution within the communication social system and tends to spread quickly to different audiences, as well as diversifying its uses to include activities that were formerly carried out through other means and artifacts. Among them are education, entertainment, information and business. The Internet brings together characteristics that distinguish it from others, such as speed and interactivity in information processing and communications, in addition to freer access to a larger volume and variety of information. Especially in the university and scientific realm, such features are highly valued. Most definitely, a part of the Internet symbolizes the liberation of information circulation, transfer, access and use. In excess, however, some of these virtues can turn into drawbacks. Thus, unrestrained increase in information with no quality control promises the phenomenon of misinformation, which could potentially get in the way of fast and pertinent information access.

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[2] De las Heras, Antonio R. *Navegar por la información*. Marid: Fundesco, 1991.

[3] Bolter, David. *Writting space: the computer, hypertext and the history of writting*. New Jersey: Lawrence Erlbaum, 1991. p. 45

[4] Bazin, Patrick. Toward metareading. En *The future of the book*/ ed. Geofrrey Nunberg. Berkeley: Univerity of California, 1996. p. 153-168

As can be observed in the data presented below[5], there has been a 560.3 % increase in the number of people connected in Latin America within the last 6 years.

Year	1998	1999	2000	2001	2002	2003
Users (thousands)	5.282,2	8.665,3	13.313,3	18.296,1	23.547,7	29.596,2

The percentage of people connected to the Internet in Latin America is:

	1999	2003
Brazil	5,8 (3.3%)	20,1 (11.1%)
Mexico	1,0 (1.0%)	4,8 (4.4%)
Argentina	0,7 (1.8%)	4,0 (10.3%)
Colombia	0,6 (1.4%)	2,5 (5.8%)
Chile	0,3 (1.9%)	1,4 (9.1%)
Venezuela	0,3 (1.4%)	1,4 (5.5%)
Peru	0,2 (0.7%)	1,0 (3.4%)
Other countries	0,4 (0.4%)	2,5 (2.2%)
TOTAL:	9,3 (1.8%)	37,6 (6.8%)

Based on these figures, we may then assume that within the university sector Internet use will be higher and diversify to such a degree that it becomes a means of daily use for study purposes, both for accessing information and communication. We would therefore think about the formation of Internet-mediated interactive study groups among classmates and professors.

In most countries in today's world, however, reading is facing a crisis due to the fact that people read less, poorly and inappropriate texts. One of the causes that have been suggested is that scholastic reading has made reading an obligatory, utilitarian and specialized or technical practice, so that continuing with scholastic practices, full of information yet void of knowledge and pleasure, runs the risk of emphasizing yet more that kind of reading practice with the Internet in which the lost pleasure is found in interactivity and the act of surfing without direction or sense.

Modern technologies have been incorporated into the activities of nearly all institutions; and computers and Web connections tend to multiply on the domestic front, too. Clearly the demand for technological mastery by those graduating from higher education has turned into a basic requirement. University students who enter institutions of higher learning, particularly in developing countries, must make up for deep social differences caused by unequal opportunities. For many of these groups it is a historical situation. Universities, especially public ones, represent an opportunity to modify that history given that students from different social strata and cultural conditions enter them. We are talking about a proportion of over 50% of university youth and the possibility of gaining access to diverse means–cultural opportunities from which they would otherwise have been excluded. Just as

[5] Asociación de Usuarios de Internet (Internet Users Association) (www.aui.es)

university libraries open up a bibliographic and information world to them, they may now avail an electronic world to which they did not have access during their basic education.

So then, in the last ten years of sustained information technology use, attitude and aptitude changes are to be expected among those for whom printing has been their cultural reference point and to which they have now added the Internet. It could be thought that some changes have already started to manifest themselves in practice through interaction with the characteristics of digital text, the screen as support and the Internet. As to the enigma posed earlier, in this presentation I attempt to offer some answers to the following questions:

1. What changes has technology, concretely the Internet, caused to reading practices and the university student community's ways of becoming informed? and
2. What impact do the effects of the Internet on the changing practices of public university readers, specifically students, have on the library?

To this end, in this talk I present results on the effect of the Internet on the reading practices of university students. These results are part of a larger study, "**The effects of information technology on reading practices and access to information in the academic and student community: The case of the UNAM"**, and were carried out with students and academics in the areas of humanities and science and the 15 libraries that offer their specialized services. All of them are located on the main (Ciudad Universitaria) campus of the National University of Mexico (UNAM), which is where we have the largest number of students and most of the research in those areas.

The UNAM is considered the largest university in Mexico and Latin America, as reflected in the following figures:

UNAM STUDENT COMMUNITY[6]	
STUDENTS	**TOTAL**
High School	96 798
Bachelor's level	133 933
Post-graduate level	17 910
Total	**248,641**

It attracts a broad range of students from different social strata, which makes a better representation of the student community of public universities possible. Furthermore, 50% of the research carried out in the country is done in this institution. Likewise, it should be

[6] Source: General Personnel Office, UNAM

noted that it has the most comprehensive computer information infrastructure and library and information services.

Characteristics of the Study

The specific purpose of this talk is to present the results of the part of the survey that corresponds to the question related to Internet use, in order to identify the impact of the Internet on the reading practices of students in public universities, in this case the UNAM.

The idea behind the research which this talk grew out of is based on Roger Chartier's thesis that, and I quote, "The electronic text revolution is both a revolution of the structures of the support material for what is written and of ways of reading. As in earlier times, written objects led to particular reading practices; the 10th century witnessed the transformation of text structure from verse to prose, when text slowly began to take over the blank spaces and the practice developed of intensive reading of rhetoric supported by memory; until the appearance of the printed book. Then they were no longer just technical conquests within the text but also a new form of book circulation started to impose itself among the intellectuals of the time. Today the innovative hypertext makes us wonder what kind of reading form it will bring and what other ones will be substituted ". [7]

The purposes of the research were:

1. To identify the impact of information and communication technologies (ICT) on reading practices
2. To find out the changes being produced in ways of becoming informed
3. To identify how they began to use ICT
4. To identify the function of the library in ICT propagation, learning and use.
5. To find out about first reading experiences and current reading practices

Relationships among several factors are also established, among them: gender, age, activity and area of expertise.

Methodology

The universe of professional-level students that the sample was taken from is made up of freshmen and students in their last semester in either the School of Philosophy and Literature or that of Sciences. The semester selection is due to the interest in contrasting generational differences.

It was necessary to take samples from each School, since they are different universes. The following formula was used to obtain the student sample:

$$n = \frac{z^2 Npq}{NE^2 + z^2 pq}$$

[7] Chartier, Roger. *Diálogo. Entrevista con Jean Lebrun*. Barcelona: Gedisa, 2000. p. 16

z^2 = The probability given under 95.5% reliability.
N = The population or universe.
E = Sampling error.
pq = Proportion of the total population.

The **School of Philosophy and Literature** offers ten fields of study: Library Sciences, Latin American Studies, Philosophy, History, Geography, Classical Literature, Hispanic Literature, Modern Literature, Literature, Dramatic and Theatrical Lit. and Education, with a population[8] of 3,077.

36 surveys were applied in each field of study, divided into 18 for each of the two semesters.

$$n = \frac{z^2 Npq}{NE^2 + z^2 pq} = \frac{4 * 3{,}077(0.48)(0.52)}{3{,}077(0.05)^2 + 4(0.48)(0.52)} = 353$$

z = 2 because the probability given is 95.5%, and we know that in a normal curve, it is +/- 2 times the typical deviation of 95% of all the possible samples.

N = 3,077 E = 0.05 pq = 0.48

The **School of Sciences** offers five fields of study: Actuarial Science, Biology, Computer Sciencie and Physics, with a population[9] of 1,732..

65 surveys were applied per field, 33 for each of the two semesters

$$n = \frac{z^2 Npq}{NE^2 + z^2 pq} = \frac{4 * 1{,}732(0.48)(0.52)}{1{,}732(0.05)^2 + 4(0.48)(0.52)} = 325$$

z = 2 because the probability given is 95.5%, and we know that in a normal curve, it is +/- 2 times the typical deviation of 95% of all the possible samples.

N = 1,732 E = 0.05 pq = 0.48

The total number of students surveyed was 678, distributed as follows: 338 freshmen and 336 last semester students. In terms of gender proportion, 45 % were female and 55% male.

While breaking with the extension requirement, the instrument used for data collection is comprised of 63 questions that were later codified. Of the total, 40 were closed

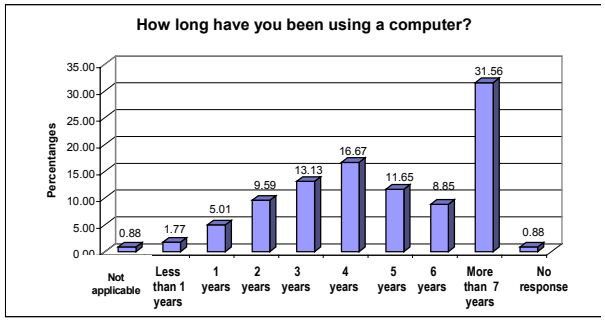
[8] Source: Licenciatura 1999-2000. En *Agenda Estadística 2000*. Mexico: UNAM, Dirección General de Estadística and Desarrollo Institcional, 2001. p. 50
[9] Source. Ibídem

and 10 open questions. As mentioned previously, this survey covers a variety of aspects, so that the questions related specifically to Internet use were selected for this talk.

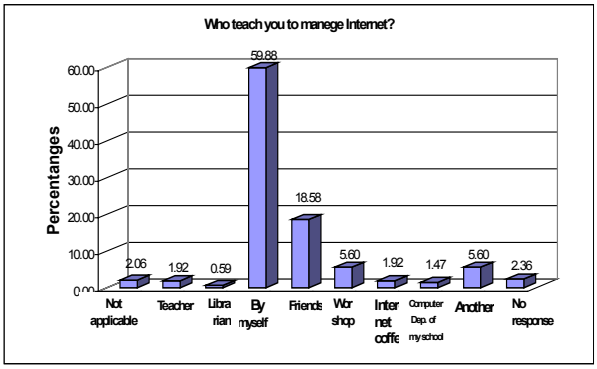
Finding

Below are the results for a selection of questions related to reading and Internet, asked in the survey.

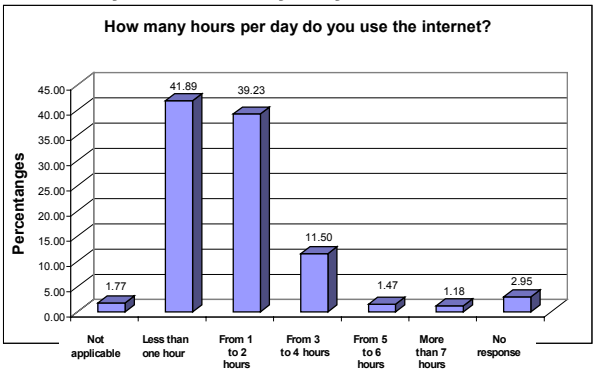
How long have you been using a computer?



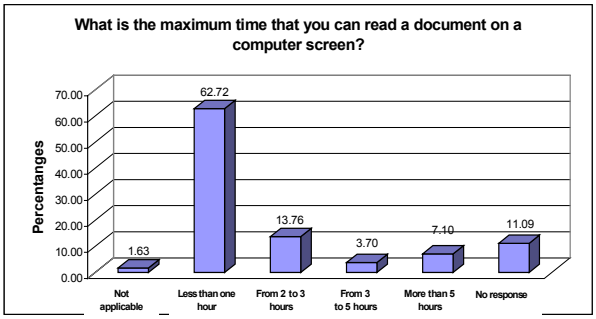
How did you learn maneging Internet? by



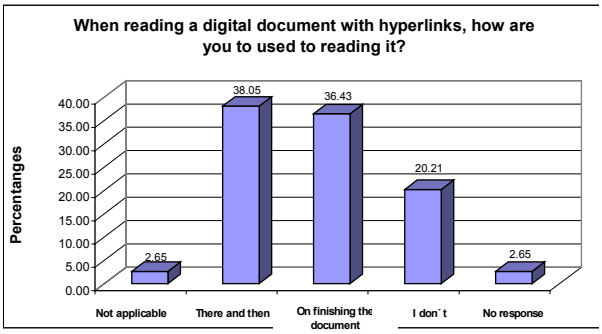
How many hours per day do you use the internet?



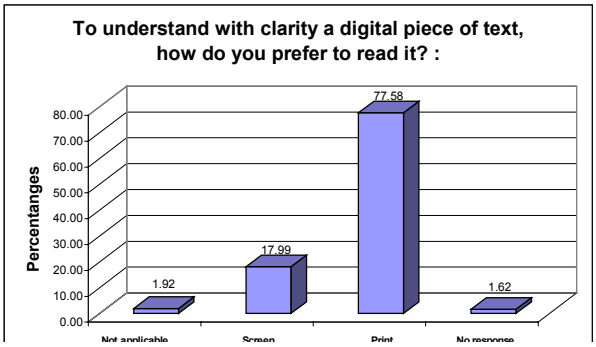
What is the maximum time that you can read a document on a computer screen?



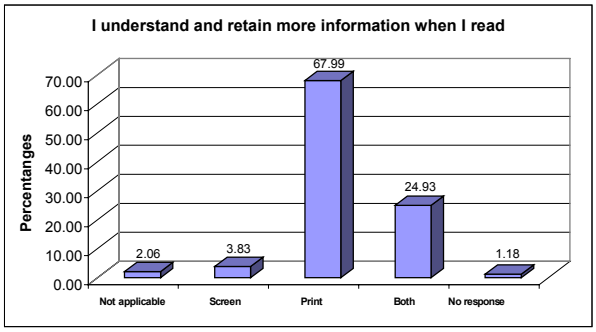
When reading a digital document with hyperlinks, how are you to used to reading it? :



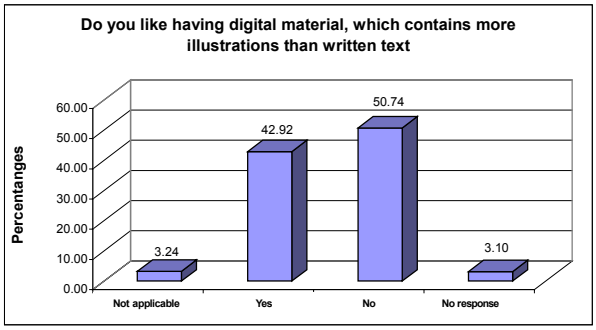
To understand with clarity a digital piece of text, how do you prefer to read it? :



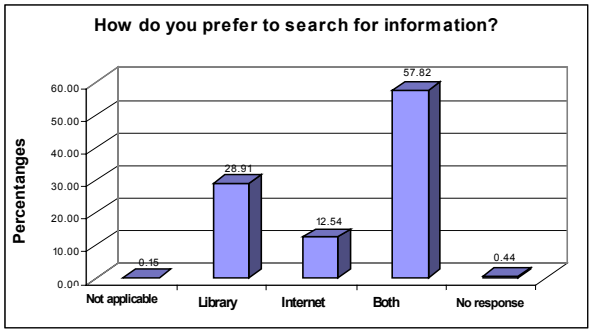
I understand and retain more information when I read:



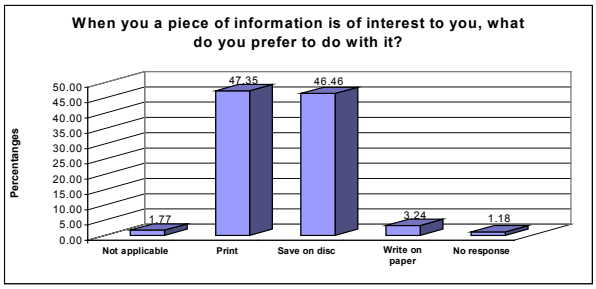
Do you like having digital material, which contains more illustrations than written text.



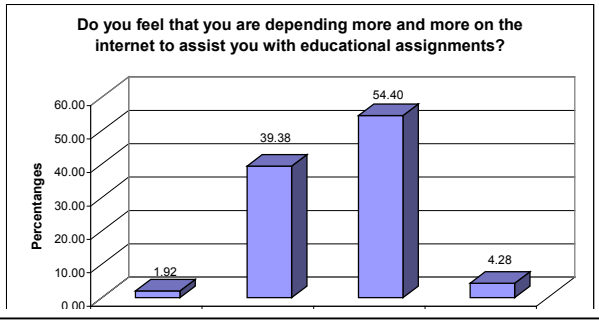
How do you prefer to search for information



When a piece of information is of interest to you, what do you prefer to do with it?



Do you feel that you are depending more and more on the internet to assist you with educational assignments?



Result Analysis and Discussion

The results are analyzed as Internet-related trends regarding four issues: experience, uses, new practices and perception. Out of the 678 students that answered the survey questionnaire, 54 % were men and 46 % were women. Regarding the time they have used computers, 68 % said between 4 and 6 years, and 29.5 % less than 4 years. During that time, 47 % learned how to use Internet by themselves, 15.6 % were taught by a friend, 14.2 % took a special course, 0.9 % were taught by library personnel and 1.5% by the personnel of the computer department of their respective schools, in spite of the fact that 38 % uses the Internet service of the library of their schools. 70 % said that they have the ability to access Internet to look for information; 87 % said that they did not need any training to do this; however, for 63 % is not easy to use Internet.

We also found an almost full assimilation of computer skills, as 82 % (most of them) use computers to write school papers, although only as typewriters, as 90 % are not proficient in hypertext. Regarding other uses such as Internet surfing and getting specialized information, 39.4 % feels that they depend more on Internet for activities related to their studies because it is easy and fast. This leads us to believe that Internet begins to be a basic part of reading practices.

This trend will continue as computers and Internet are used more by the children population. We see that 78 % of the interviewed people have a computer at home, either for family use or for the exclusive use of the student.

It is interesting that in other questions related to information acces I observe that there is certain skepticism about the quality of the information found through Internet, as only 4.4 % are convinced of its reliability and 29.2 % think that such information is updated. However, 74.5 % like that there are no time constraints to use Internet, but 74 % do not always find the information they are looking up. Only 3.7 % said it is not difficult for them to understand what they read on the screen, and 68 % said it is easier to understand the printed text. 24.9 % said that they understand the contents of both formats: printed and digital. The data coincide as 77 % prefer to read printed documents and 18 % prefer screen text. The above is confirmed with the time they spend reading on screen text: 42 % can read less than one hour and 38.1 % around 2 hours. Now, 42 % prefer that the digital document has more illustrations than text. This may be due to the association with a TV screen where information is mainly represented in images.

From the information provided by the survey, we found that the preference for reading printed text continues to be strong; however, we found that digital means reading is growing gradually within the options that students need for their studies, information and entertainment, as revealed by data in which students prefer information works in digital format, surfing begins to be a part of entertainment, and 37% of the surveyed people depend more on Internet to carry out their school activities.

Another interesting fact is that 38.1 % of the subjects find interactive reading attractive when opening the links along a text after they read it, 36.4 % read the links when they come across them, and 20.2 % do not read them at all. 47.3 % of the subjects print the information they need and 31.7 % save the information in a diskette. The ratio is similar, so we can infer that the trend of screen reading may begin to predominate. However, we did not find a significant demand for digital documents, as only 7.1 % would like the libraries to offer this option.

Conclusions

In countries like Mexico, the public universities are the spaces in which reading practices among the student population tend to be homogeneous. However, this is only to some extent as history, culture, skills, and the socio-economic environment of the students make them different. Regardless of this fact, the educational institutions have an important influence, as such practices are:

- Established by the community in the discourse and the activities regarding studying, information and entertainment.
- Needed to carry out the class activities as required.
- Determined by the specialized bibliographical and information sources used.
- Defined by the generation characteristics based on stereotypes with which the students identify themselves.

The analysis of the results of this general survey enable us to infer that Internet use is spreading quickly through products and services related to several activities and uses because it offers more freedom and autonomy to access information college students need. We can also infer that to the extent new generations acquire a higher proficiency in information technology skills at a younger age, we will see changes in the attitudes and practices regarding preference and mastery of specialized digital reading for their school topics and papers. Even a new kind of citizens[10] related to cyberspace will become more defined by the culture acquired more through Internet than by their personal environment and upbringing learned from other knowledge sources away from their own personal experiences.

The groups that now enter into college have acquired reading practices that can still be changed by their university experience, and as they become the new generations of professionals, professors, researchers, and parents, they will pass on their reading practices to their following generations. Therefore librarians must work to rescue the reading practices that open different options to purposeful and super-specialized reading. Moreover, libraries must become a literary option different to the banal, ephemeral and content-empty products that only provide information and data.

We must find a way to compensate for the following trends:

[10] Trejo Delarbre, Raúl. *La nuevalaformbra mágica (The new magic rug)*, Mexico, Diana, 1996.

- Internet is becoming a world independent from institutions.
- The reduction of the reading world to the digital links and collections of personalized electronic libraries.
- The preference of Internet surfing over reading.
- Hypertext reading of only portions of text, images and sounds.
- Internet reading will be will be more specialized, purposeful, instantaneous and informative, but will not form the reader.

Of course it is difficult to foresee the impact of Internet in countries that are still in the process of acquiring technological and information equipment to have the amount and the quality of resources owned by the most powerful countries. However, both types of countries are undergoing a transition because no actual literature born of digital culture has been created. We continue to use the printed text as source of digital information, but not for a long time, as the presence of hypertext represented by the Websites, and the fascination they produce are signs of structured literary products under the digital empire. So, the impact of Internet on the reading practices will be seen as the digital culture is fully assimilated, i.e., when it has set a clear distance from the printed means.

Summarizing, we find that the experience in the use of Internet of the majority of students shows that:

- The majority started using Internet in high school and they think they do not need instruction programs for the use of this means.

- There is a solid use of computer to write papers, but they do not have the skills to prepare a hypertext. Internet use begins to be a part of their everyday life as they devote approximately 1 to 2 hours a day to Internet surfing.

- Among the new reading practices related to Internet, we find that surfing, although it is in its early stages, it already has a place in the everyday practices, as well as the interaction with the links that the text offers.

- The perception of Internet. Not a majority of students, but a significant percentage of them, considered that they increasingly depend on Internet for their school-related activities. This makes us suppose that the trend will grow, because there is still lack of confidence in the information found in this means. But almost 50% thinks that, in the future, they will depend less on the printed means (including photocopies) of the libraries and the librarians.

I hope that, with this information contribute to know, at least, some part about the Internte effect on our readers and we, librarians in developing countries must be aware of and define our role to rescue leisure reading practices, as we well know such role is under attack. This is due to, up to a certain extent, the fact that the pleasure of reading, as Daniel

Pennac says, is not included in the school plans and curricula[11], but it is also due to the mass distribution of printed products, and now the competition that digital products represent for quality literature. Thus, the library institution of the 21st century can participate as an alternative not only to offer information sources, but also to promote multiple reading, i.e., to encourage the integration of several complementing media that the reader can handle simultaneously and make the experience of reading a combination of both pleasure and knowledge. I think is not a new challenge for us but now days, is becoming more complex.

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