Comunicar, n. 58, v. XXVII, 2019 | Media Education Research Journal | ISSN: 1134-3478; e-ISSN: 1988-3293
www.comunicarjournal.com

Google or Gutenberg Generation: Chilean university students' reading habits and reading purposes

Generación Google o Generación Gutenberg: Hábitos y propósitos de lectura en estudiantes universitarios chilenos

Dr. Giovanni Parodi is Full Professor at Pontifical Catholic University of Valparaíso (Chile) (giovanni.parodi@pucv.cl) (https://orcid.org/0000-0003-2403-7038)
Tomás Moreno-de León is Researcher at Pontifical Catholic University of Valparaíso (Chile) (tomas.moreno.d@mail.pucv.cl) (https://orcid.org/0000-0003-4931-971X)
Cristóbal Julio is Researcher and Ph.D. candidate in Linguistics at Pontifical Catholic University of Valparaíso (Chile) (cristobal.julio@pucv.cl) (https://orcid.org/0000-0002-4723-0271)
Dr. Gina Burdiles is Adjunct Professor at Catholic University of the Most Holy Conception (Chile) (gburdiles@ucsc.cl) (https://orcid.org/0000-0001-5164-8382)

ABSTRACT

It has always been in the public interest to know the reading habits of readers of various ages and levels of schooling, as well as their opinions with regard to the consumption of reading materials. Lately, researchers have given increased attention to digital texts. Although progress on these topics has been made as reported in published research, there is yet incomplete information regarding readers' habits and opinions at university and professional levels. This study describes the self-reported habits of university students belonging to two disciplinary domains (Human Sciences and Economic and Business Sciences) regarding reading on paper or on digital media for three purposes: academic, entertainment, and information seeking. The results reveal that the readers' preferences vary according to the three purposes. These readers reported using different media but had a clear preference for paper; they also reported distinguishing between cognitive processes (memory, comprehension, and learning), with the discipline to which they belonged having no radical effect on their preferences. All of this leads us to conclude that currently there exists a generation in transition, a 'Gutenberg-Google' generation, which still recognizes the relevance of paper, in particular for academic purposes.

RESUMEN

Conocer los hábitos de lectura de sujetos de diversas edades y niveles de escolarización, así como su opinión respecto del consumo de materiales de lectura, ha estado siempre en el interés público. En los últimos tiempos, mayor énfasis se ha puesto en los textos digitales. Si bien se ha avanzado en la investigación en estas áreas, aun es parcial la información a nivel universitario y profesional. En este estudio se describen los hábitos declarados por estudiantes universitarios de dos áreas disciplinares (ciencias humanas y ciencias económicas y administrativas) respecto de lectura en formato papel y en digital en virtud de tres propósitos: académico, entretenimiento y búsqueda de información. Para ello, se diseñó y aplicó una encuesta a una muestra de 894 estudiantes en dos universidades chilenas y en cinco carreras. Los resultados revelan que los lectores muestran variación en sus preferencias de lectura según los tres propósitos. En otras palabras, estos lectores declaran emplear soportes diferentes, pero con una clara tendencia a preferir mayoritariamente el sustrato papel, y distinguir procesos cognitivos diversos (memoria, comprensión y aprendizaje), sin que el área disciplinar de procedencia incida de modo radical en sus preferencias. Todo ello, en general, nos lleva a concluir que en la actualidad existe una generación en transición «Gutenberg-Google», la cual aún reconoce y otorga alta relevancia al soporte papel, en particular frente a propósitos académicos.

KEYWORDS | PALABRAS CLAVE

Reading, reading habits, digital media, reading purposes, university students, Google, Gutenberg, multimodality.
Lectura, hábitos de lectura, medios digitales, propósitos de lectura, estudiantes universitarios, Google, Gutenberg, multimodalidad.

Received: 2018-05-31 | Reviewed: 2018-06-21 | Accepted: 2018-08-01 | Preprint: 2018-11-15 | Published: 2019-01-01
DOI https://doi.org/10.3916/C58-2019-08 | Pages: 85-94

1. Introduction

Reading often attracts the attention of experts and laypeople. In particular, two concerns commonly arise: Are we reading enough? And, what are we reading? In other words, the focus of attention is on how much people read and what they read. More recently, researchers have tackled questions relating to the emergence of new technologies and their effect on reading on paper and other media and digital devices. Therefore, identifying the reading habits reported by readers of different ages and levels of education and their opinions on the consumption of printed and digital materials, formats, and media, is highly valuable to both governmental authorities and researchers. Whether it be with the aim of influencing public policy or with scientific or applied objectives, it is a crucial priority to have access to detailed information on how groups from different disciplinary fields and levels of schooling carry out their everyday reading practices (Woody, Daniel, & Baker, 2010; Carr, 2011; Baron, 2015; Wang & Bai, 2016).

Underlying these concerns, there is a set of assumptions, hypotheses and predictions (many of which lack sufficient scientific evidence) revealing reservations about statements such as a) people do not read enough, b) written culture has become impoverished, c) nowadays people read less than they used to, d) books on paper will soon disappear, e) digital reading involves new ways of thinking, and f) young people mostly read on electronic devices.

In addition, another preoccupation has emerged more recently: can reading texts in a digital medium have negative effects? In other words, what are the cognitive implications of reading in different media, printed or digital? Is one more efficient than the other? The fear is that new media would have a negative impact on reasoning, i.e., that new technological devices lead to a decrease in reflexive reading and deep and lasting learning (Bennett, Maton, & Kervin, 2008; Rockinson-Szapkiw, Courduff, Carter, & Bennett, 2013; Mangen, Walgermo, & Bronnick, 2013; Beland & Murphy, 2016).

In our opinion, the information available on these issues remains fragmented and lacks a perspective that adequately deals with reading purposes as a central focus of the processes implied in the comprehension of written texts and different reading devices. Although there is still no integral systematic theory involving reading objectives, numerous researchers recognise that people read for many different purposes and that they adapt their reading processes to those objectives (Graesser, Singer, & Trabasso, 1994; Graesser, Li, & Feng, 2015; Parodi, 2011; Britt, Rouet, & Durik, 2018).

This study is part of a larger research project that aims to identify reading habits, written materials and reading routes using eye-tracking technology in different disciplinary domains (FONDECYT Project 1170623). The reading habits survey employed here was designed and administered to university students as part of the first stages of this research grant. The survey focuses on the reading habits of students as they read for different purposes; at the same time, it seeks to collect detailed information on discourse genres and their multisemiotic features. The objective of the current study is to describe the reading habits disclosed by university students in two disciplinary areas (Human Sciences and Economic and Business Sciences) regarding paper and digital media with three reading purposes: academic, entertainment and information seeking.

This study presents the results of the administration of the Purpose-Guided Reading Habits Survey (PGRHS) for three of the six dimensions included in the survey: 1) Preferred medium and concentration for reading; 2) Comprehension, memory and learning; 3) Multiple semiotic systems. Consequently, the focus of the study is to describe the central findings related to the incidence of three specific reading purposes. The article is organised as follows: the first section reviews some key issues that frame the design of the survey. The methodology section provides details of the procedure through which the instrument was built, the sample of university students and the administrative procedures. This is followed by a review of the general results of the study and a discussion of the findings. The article concludes with projections.

1.1. Reading on paper and digital media: Readers' habits and academic performance

In an article published in 2007, Marianne Peronard reflected on the differences between reading on paper and computer screen and suggested the need for digital reading to take into account "the needs and interests of each person, for each moment, and for each purpose" (Peronard, 2007: 179). Previously, Muter and Maurutto (1991) had listed 29 formal features that previous studies identified as possible factors of the differences between reading on paper and on screen. Because of the varied data collection methodologies, Dillon (1992) stated that it was not possible to draw definitive conclusions about the particularities that contributed to possible differences. The study by Peronard (2007) confirmed the assertion made by Piolat, Roussey, and Thuning (1997) that comprehending a

text was more efficient for a group of university students when the text was read on paper than in a digital medium. Reading on the latter device also revealed poorer spatial memory and more superficial text processing. These findings coincide with most recent studies (Sparrow, Liu, & Wegner, 2011; Mangen & al., 2013; Mangen & van-der-Weel, 2016; Hou, Rashid, & Lee, 2017) and are part of the current debate about new generations of readers and their supposed preference of digital media over paper (Selwyn, 2009; Carr, 2011; Baron, 2015).

From this framework, we are interested in approaching another source of information, which is the focus of the current study: opinion surveys. In general, the importance given to reading habits surveys is related to their impact on other relevant dimensions of the reading process. Recent research has revealed that there is a relationship between reading habits and academic performance. Usually, students who proclaim themselves dedicated readers tend to score better on school tests (Molina, 2006; Galicia & Villuendas, 2011; Picasso-Pozo, Villanelo-Ninapaytan, & Bedoya-Arboleda, 2015). Thus, the underlying assumption that guides and inspires much of the research in this domain is that reading habits facilitate and foster the development of reading comprehension competence and positively influence students' academic performance. Although our objectives are not the same as Peronard's (2007), hers and related findings that show a connection between reading habits and academic performance provide relevant background to the present study.

According to the findings of the current study and other similar studies, being born after a somehow Messianic date (such as 1993) is not a sine qua non-condition for being a predominantly digital reader. This underlines the need to distinguish between technology use for entertainment purposes and information seeking, and for academic purposes for the construction of deep and lasting learning.

1.2. Natives, immigrants and the Google Generation: Terminological successes and failures

Together with the widening proliferation of information technology, different characterisations of human groups have arisen, particularly in the area of education. Gallardo, Marqués, Bullen, and Strijbos (2015) identified at least 48 different terms for users of digital technology in the literature from 1991 to 2014. Within this possible terminological confusion, a relatively accepted categorisation, though one that is still not free from controversy, is the distinction between digital natives and digital immigrants, based on the date of birth of subjects from different generations and associating this with a particular relationship to the digital world.

The terms digital native and digital immigrant arose at the end of the 1990s (Prensky, 2001a). Digital natives would be young people born in the 90s who are the first generation of the technological revolution and who grew up surrounded by artefacts from the digital era. Although lacking empirical basis, Prensky (2001b) suggests that this environment of permanent interaction with technological tools modifies the structure of the brain and the thinking processes of users. Digital immigrants, on the other hand, would be those who did not grow up with this technology and had to learn about new cultures and ways of communication in order to join the modern digital world.

Another somewhat controversial categorisation focuses on technological practices applied by certain users, proposing the existence of the so-called Google Generation. It identifies people born after 1993 who live in a world of permanent connectivity, use the internet as their only source of information and use Google as their main search engine (Rowlands, Nicholas, Williams, Huntington, Fieldhouse, Gunter, Withey, Jamali, Dobrowolski, & Tenopir, 2008; Gunter, Rowlands, & Nicholas, 2009; Nicholas, Rowlands, Clark, & Williams, 2010).

Much of what was stated before 2008 on digital natives and the educational implications of their characteristics lacks empirical evidence (Bullen, Morgan, & Qayyum, 2011). Although the terms digital native and digital immigrant are used regularly, there is considerable debate regarding their use and the related findings reported. One such debate questions the appropriateness of creating generational dichotomies of this kind. Some studies indicate that differences attributed to age are minimal (Salajan, Schönwetter, & Cleghorn, 2010). Even Prensky (2009) came to believe that the distinction was irrelevant and proposed the concept of digital wisdom. Some empirical studies have shown that there are no fundamental differences between digital natives and digital immigrants (Selwyn, 2009;

Corrin, Lockyer, & Bennett, 2010), and if any, they would be basically due to experience, access and opportunity to use technology (Brown & Czerniewicz, 2010; Czerniewicz & Brown, 2010).

As it can be seen, generalisations based on apparent generational differences are not useful in discussions related to teaching and learning (Gallardo & al., 2015) and they often constitute incomplete descriptions or myths, as was concluded by Rowlands and others (2008) as well as Nicholas and others (2011) in their studies of the characteristics of users from the so-called Google Generation. Overall, there are other contextual variables, apart from age, such as socioeconomic status and cultural and ethnic precedence, that can explain the differences in the way people use technology (Jones, Ramanau, Cross, & Healing, 2010).

2. Materials and methods

2.1. The survey

The PGRHS is comprised of 24 questions divided into six sections. Most of the questions are closed and have multiple-choice answers (19 of the 24). Each of the six sections focuses on a dimension of reading that we believe relevant in the modern world, with the aim of identifying how that dimension can affect the reading habits of university students. The table below shows the six sections, the respective dimensions, the three transversal reading purposes and their distribution over the questions.

The objective of the survey is to analyse reading habits relative to different media and devices and to identify associated discourse genres and their multisemiotic features, all within the framework of three reading purposes: a) reading of academic texts, b) reading for entertainment, and c) reading for information seeking. In general terms, we were interested in identifying whether readers vary their reading habits depending on the media and devices being used, given different specific purposes. The survey was built by the research team FONDECYT, Project 1170623. Three concurrent and complementary sources of information were used to construct the final survey: 1) Consultation with a group of three specialists regarding medium, content, and types of questions; 2) Pilot administration on a sample of students in the same degree programs, but at other universities than those included in the study; 3) Interviews with students from universities other than the target sample. This process led to changes in medium and changes in wording or terminology where this was unclear; all of these modifications were incorporated into the final design.

Table 1. Composition of the Purpose-Guided Reading Habits Survey (PGRHS)

Section	Dimension	Reading purposes (transversal)	Number of questions
Part 1: Preferred medium and concentration	Medium generally used when reading: paper or digital	3 purposes: Academic reading; Reading for entertainment; Reading for information seeking	6
Part 2: Devices	Device used for reading: paper, telephone, computer, tablet, etc.		2
Part 3: Discourse genre	Types of text read in each medium		3
Part 4: Comprehension, memory, and learning	Psycholinguistic reading processing: best results in comprehension, memorisation, and learning, depending on the medium		3
Part 5: Multiple semiotic systems	Text features: words, graphs, tables, diagrams, etc.		4
Part 6: Cost and environment	Financial cost associated with each reading medium and impact on the environment.		6

2.2. Stratified random sampling

In order to obtain a diverse sample of students and avoid possible variations in discipline, students were chosen from two groups of university degree programs: Human Sciences (HS), which include Philosophy, Spanish and History; and Economic and Business Sciences (E&BS), which include Commercial Engineering and Economics.

The survey was administered at two regional Chilean universities, one in Valparaíso and the other in

Concepción. Both are private but receive public funding, as is common in Chile. We used random and stratified sampling and had a total of 894 subjects. The sample was designed to include an equal proportion of males and females. Table 2 shows the distribution per university program.

Table 2. Composition of the sample of university students (N=894)

Human Sciences (N=358)			Economic and Business Sciences (N=536)	
Philosophy	History	Spanish	Commercial Engineering	Economics
44	152	162	366	170

For a population of 1,788 university students, proportional stratified random sampling was used, suggesting that the proportion of students in HS compared to E&BS is 1:1.5. The minimum sample size was estimated on the basis of the Student t-test for independent samples, giving a total of 894 subjects from the following parameters: a) a level of significance p=.05, b) effect size d=.2, and c) statistical power (1-B) =.9. This number of participants was stratified in accordance with the following variables: a) study area, b) institution, c) degree program, and d) gender. The calculation resulted in the subdivision shown in Table 2. A sample of this nature allows greater representation and, therefore, better extrapolation of the subsequent findings.

2.3. Administration and coding procedures

Surveys were administered at random to the 894 students from the undergraduate degree programs (the mean age was 20 years, SD=2.7). Randomness was ensured by the use of a computer program that selected numbers at random from a list of each course. The self-administered surveys were conducted on paper with the support of a team of six research assistants who were given the appropriate training beforehand. It was decided to use a strategy that allowed for better control of the characteristics defined for the sample (degree, gender), ensuring that the responses from the interviewees were obtained more quickly than they would by using alternative methods, for example, online surveys.

Previous to the administration of the survey, a written consent form was given to the students, indicating that their participation was voluntary and that any data given would be anonymous and confidential. Administration of the survey took, on average, 15 to 20 minutes. The responses were then coded on a spreadsheet. All statistical analysis (t-test) was carried out using the same software (Excel/SPSS).

3. Results

As stated in the introduction, the results presented in this article constitute a first report from the administration of the reading survey PGRHS. More precisely, the focus here is on the results of three dimensions: a) preferred medium for reading and concentration, b) comprehension, memory and learning, and c) multiple semiotic systems. Figure 1 shows the results for preference and concentration for academic reading.

As it can be observed, the figures are highly homogenous. In all cases, they give a result of over 84% in favour of the paper medium. The students state that they prefer reading on paper for academic purposes in general and because they are able to concentrate better. The statistical analyses reveal that all comparisons between paper and digital media are statistically significant in favour of paper (https://goo.gl/-F2bQhr).

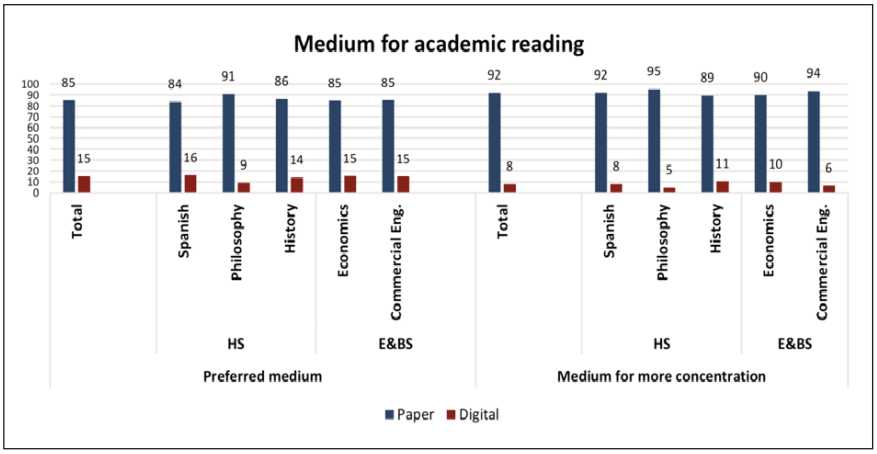

Figure 1. Academic reading: Preference and concentration.

These first figures, in view of a reading purpose as relevant as the academic one, are very revea-

ling regarding the preferences of this group of university students. These results are consistent with other findings of our own research team (Parodi & Julio, 2017) and other studies in Spanish and in English (Baron, 2015; Salvador-Oliván & Agustín-La Cruz, 2015; Beland & Murphy, 2016; Wang & Bai, 2016). However, as stated above, there are few surveys that take into account reading purposes and degree programs as variables in their design. Therefore, this result can be interpreted in two dimensions: students identify the reading purpose, and they prefer the paper. This is regardless of the degree program involved.

Figure 1 also shows that, for the purpose of academic reading, the students declare that paper is better for concentration. Similarly, in a study conducted in Turkey with a sample of 792 university students from eight different departments, Kazanci (2015) reported that in general, the students show a high preference of 78% for paper over digital. The same study also reveals that after six years, the same university students did not vary their preference for paper (77%). Moreover, Farinosi, Lim, and Roll (2016) identified, in a sample of students from Germany, Italy, and the UK, a preference for paper when processing large genres for academic purposes. These results did not reveal socio-economic differences among the nationalities of the participants, whose ages varied from 21.9 years to 26.9 years. Similar results were obtained by Baron (2015) for a group of subjects from the USA, Germany, and Japan, who stated that when reading long texts for academic purposes they opted for paper (92% in the US, 95% in Germany and 77% in Japan).

Our results align with those from other parts of the world mentioned above. It is clear that there is a high degree of preference for paper among university students across countries and cultures.

The following section, maintaining the focus on academic reading, reports the results on comprehension, memorisation, and learning.

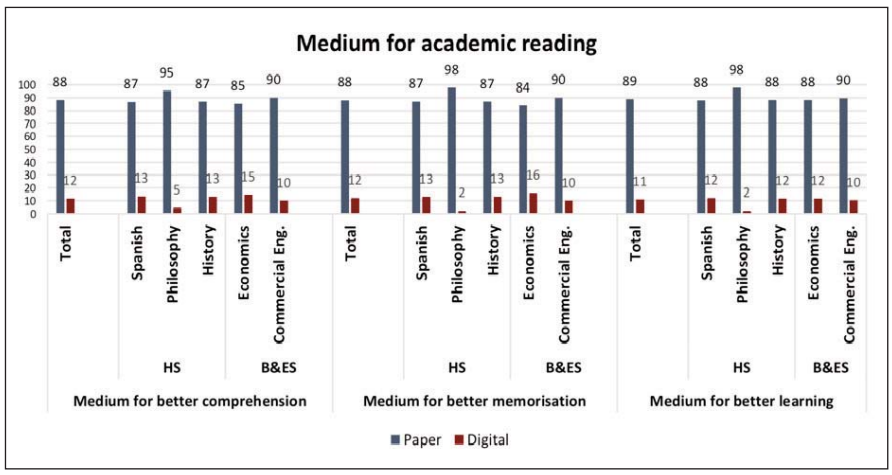

Figure 2. Academic Reading: Comprehension, memorisation, and learning.

The data in Figure 2 again show a highly homogenous panorama, revealing in all cases a result of over 84% in favour of reading on paper. The students in the sample (again irrespective of their degree program) state that when reading for academic reasons, paper medium gives better results for comprehension, memorisation, and learning. As with Figure 1, the statistical analyses of the figures show that all comparisons between paper and digital are statistically significant in favour of paper (https://goo.gl/Xme7sJ).

Despite the hypothesis of possible preferences for reading on digital medium in the so-called Google Generation (Rowlands & al., 2008; Nicholas & al., 2010), the results reported here for the purpose of academic reading show that these Chilean university students prefer paper for comprehension, memorisation, and learning. These findings are in line with those of university students of other nationalities (Woody & al., 2010; Mangen & al., 2013; Baron, 2015; Wang & Bai, 2016).

Strictly speaking, a total of 98% of the students in the sample can be classified as belonging to the Google Generation, as they were born after 1993. Only 2% were aged between 27 and 47 at the time of the survey. Nevertheless, the younger readers state that in their academic reading, for better comprehension, memorisation, and learning, they prefer paper. They even state that they employ the digital medium mainly for searching and selecting texts, but that once a text has been found and the purpose changes from searching to academic reading, they proceed to print the text. The results at this point are relatively homogenous, with no significant differences among degree programs. Furthermore, a higher percentage of the students states that if the cost were not a factor and there was no environmental impact, they would prefer to print digital texts for more dedicated reading and comprehension.

Similar results were found in genres read for the purpose of entertainment, such as comic books. Though not reported here in detail, it can be noted that upon comparing the results for men and women, no statistically significant differences were found.

Based on these results, the students in this survey can more accurately be considered part of the Gutenberg Generation, or considered comparable to so-called digital immigrants, in spite of belonging to an age range that would have defined them otherwise. Particularly for academic reading tasks, they consistently prefer reading on paper.

Figure 3 below shows the results on primacy (what is read first), relevance (what is more important) and time (what captures more time) regarding the verbal system and other semiotic systems, such as images, tables, and graphs.

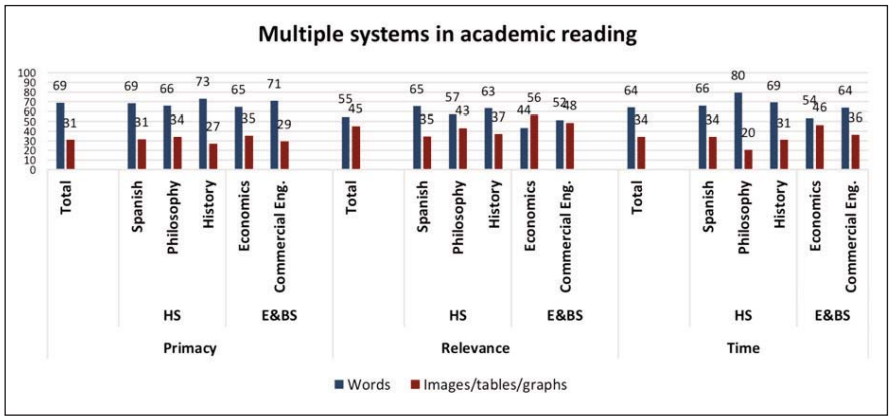

Figure 3. Academic reading with multiple semiotic systems: Primacy, relevance and time.

When the students were asked, in the context of academic reading, what they read first in a text made up of words, images, tables or graphs, the majority answered that their attention is focused on the verbal system, i.e., the words (69%). As shown in Figure 3, the same answer is given for all degree programs in a relatively homogeneous way. In general, this result shows that, although the students place importance on reading images, tables, and graphs, they are influenced by the Logocentric Principle, i.e., that words dominate or have pre-eminence over other semiotic systems (Parodi & Julio, 2017).

The following figure summaries the statistical data for the second reading purpose: reading for entertainment.

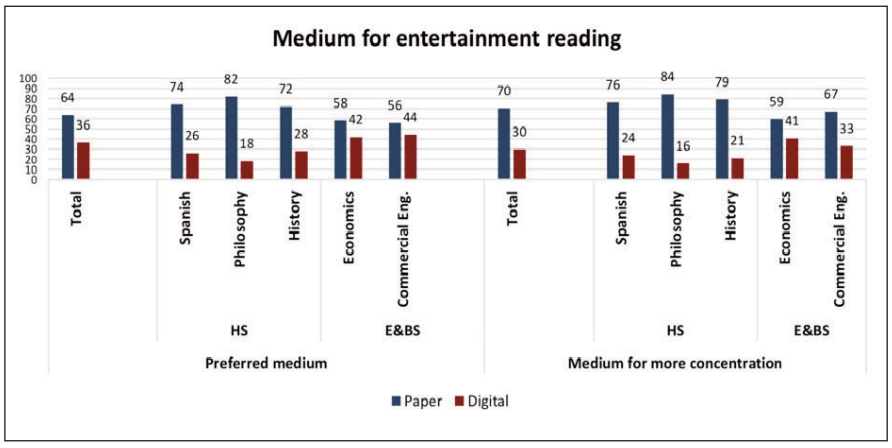

Figure 4. Reading for entertainment: Preference and concentration.

Figure 4 displays an interesting difference between the students from the three programs in HS and the two from E&BS. All the students from HS state that when reading for entertainment, their preferences tend towards reading on paper, with the majority stating that reading on paper helps improve concentration. In this line, Baron's findings (2015) indicate that university students of different nationalities also prefer paper when reading for pleasure (85% in the US, 88% in Germany and 74% in Japan). Similar to previous findings, statistical analyses for this reading purpose reveal that all comparisons favoured paper medium (https://goo.gl/BEBgqY).

Finally, Figure 5 shows the results for the third reading purpose: information seeking.

Interestingly, when the reading purpose is information seeking, the preferences of most of the students in the sample, irrespective of the degree program, clearly indicate that they favour the digital medium (global mean 87%).

This result is the opposite of what was observed in the previous cases and is the only occasion on which most of the readers show a general preference for the digital medium. Almost all statistical analyses show that comparisons between paper and digital are statistically significant in favour of digital (https://goo.gl/-Z2cEp3).

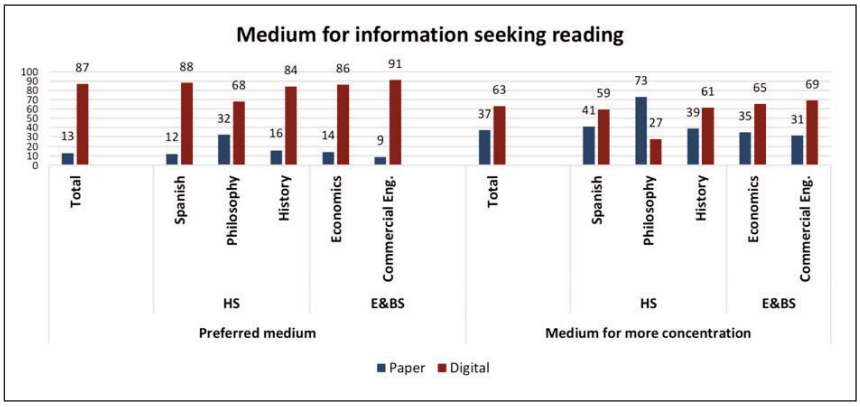

Figure 5. Reading for information seeking: Preference and concentration.

In particular, the case of Philosophy is noteworthy. 68% of the Philosophy students state that when searching for information, they preferred a digital medium. However, the same students declare that for the same reading purpose but for more concentration, they prefer the paper medium (73%). The case of these Philosophy students is unique among the five programs of the present study, even when compared to the other Human Sciences programs (Spanish and History). The data in Figure 5 clearly suggest the awareness students have of their own reading purposes and the effect these reading purposes have on the medium they subsequently choose.

4. Conclusions

The evidence presented in this study shows first that the university students in the stratified sample of five programs clearly distinguish the three reading purposes and connect them to specific media, tasks and the multi-semiotic composition of written texts. The findings are also revealing since surveys of reading habits do not regularly include reading purposes. These purposes can be seen as a variable that positively affects the reading habits declared by the sample of Chilean subjects.

Second, the general findings also reveal that paper is the preferred medium for the university students in the sample, as opposed to the digital one, given study purposes and academic rigour. In addition to this, we found no statistically significant differences for academic reading purposes by discipline, defined here as whether students belonged to the Human Sciences or the Economic and Business Sciences programs.

According to the findings of the current study and other similar studies, being born after a somehow Messianic date (such as 1993) is not a sine qua non-condition for being a predominantly digital reader. This underlines the need to distinguish between technology use for entertainment purposes and information seeking, and for academic purposes for the construction of deep and lasting learning. Consequently, it is correct to claim the existence of a 'Gutenberg-Google Generation' in transition that still recognises the relevance of paper medium. At the same time, attention must be paid to empirical studies that state that digital reading on different electronic devices leads to superficial and shallow processing and low retention, unlike reading on paper which yields deeper comprehension and improved learning (Sparrow & al., 2011; Baron, 2015; Kazanci, 2015; Mangen & van der Weel, 2016; Hou, Rashid, & Lee, 2017).

Overall, it is worth emphasising that the findings reported here are based on declared habits and on the opinions of the interviewees. This means that the focus of our study is on declarative knowledge, i.e., what the subjects state they do, not exactly on what they do or exercise when they read (procedural knowledge). In other research, we have focused on discourse processing and studied different variables in moment to moment and online reading (Parodi & Julio, 2017; Parodi, Julio, & Recio, 2018).

Funding Agency

Research Project FONDECYT 1170623 (2017-2020) "Are there different routes for reading multi-semiotic texts in professionals of different disciplinary backgrounds: Philosophy and economics? Descriptive and experimental study using eye tracker".

References

Baron, N. (2015). *Words onscreen. The fate of reading in a digital world*. Oxford: Oxford University Press.

Beland, L., & Murphy, R. (2016). Ill Communication: Technology, distraction & student performance. *Labour Economics, 41, 61-76. https://doi.org/10.1016/j.labeco.2016.04.004*

Bennett, S., Maton, K., & Kervin, L. (2008). The 'digital natives' debate: A critical review of the evidence. *British Journal of Educational Technology, 39*(5), 775-786. https://doi.org/10.1111/j.1467-8535.2007.00793.x

Britt, M., Rouet, J., & Durik, A. (2018). *Literacy beyond text comprehension. A theory of purposeful reading*. Nueva York: Routledge.

Brown, C., & Czerniewicz, L. (2010). Debunking the 'digital natives': Beyond digital apartheid, towards digital democracy. *Journal of Computer Assisted Learning, 26*(5), 357-369. https://doi.org/10.1111/j.1365-2729.2010.00369.x

Bullen, M., Morgan, T., & Qayyum, A. (2011). Digital learners in higher education: Generation is not the issue. *Canadian Journal of Learning and Technology, 37*(1), 1-24. https://doi.org/10.21432/T2NC7B

Carr, N. (2011). The shallows. What the Internet is doing to our brains. Nueva York: Norton & Company.

Corrin, L., Lockyer, L., & Bennett, S. (2010). Technological diversity: An investigation of students' technology use in everyday life and academic study. Learning, Media and Technology, 35(4), 387-401. https://doi.org/10.1080/17439884.2010.531024

Czerniewicz, L., & Brown, C. (2010). Born into the digital age in the south of Africa: The reconfiguration of the 'digital citizen'. In L. Dirckinck Holmfeld, V. Hodgson, C. Jones, M. de-Laat, D. McConnell, & T. Ryberg, (Eds.), Proceedings of the 7th International Conference on Networked Learning 2010 (pp. 859-865). Aalborg: Aalborg University. https://bit.ly/2Ocj0J9

Dillon, A. (1992). Reading from paper versus screens: A critical review of the empirical literature. Ergonomics, 35(10), 1297-1326. https://doi.org/10.1080/00140139208967394

Farinosi, M., Lim, C., & Roll, J. (2016). Book or screen, pen or keyboard? A cross-cultural sociological analysis of writing and reading habits basing on Germany, Italy and the UK. Telematics and Informatics, 33(2), 410-421. https://doi.org/10.1016/j.tele.2015.09.006

Galicia, J., & Villuendas, E. (2011). Relación entre hábitos lectores, el uso de biblioteca y el rendimiento académico en una muestra de estudiantes de psicología. Revista de la Educación Superior, enero-marzo, XL(1), 55-73. https://goo.gl/fX6oTK

Gallardo, E., Marqués, L., Bullen, M., & Strijbos, J. W. (2015). Let's talk about digital learners in the digital era. International Review of Research in Open and Distance Learning, 16(3), 156-187. https://doi.org/10.19173/irrodl.v16i3.2196

Graesser, C., Singer, M., & Trabasso, T. (1994). Constructing inferences during narrative text comprehension. Psychological Review, 101(3), 371-395. https://doi.org/10.1037/0033-295X.101.3.371

Graesser, A., Li, H., & Feng, S. (2015). Constructing inferences in naturalistic reading contexts. In E. O'Brien, A. Cook & R. Lorch, (Eds.), Inferences during reading (pp. 290-320). Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9781107279186.014

Gunter, B., Rowlands, I., & Nicholas, D. (2009). The Google Generation: Are ICT innovations changing information-seeking behaviour? Cambridge: Chandos Publishing. https://doi.org/10.1533/9781780631639

Hou, J., Rashid, J., & Lee, K. (2017). Cognitive map or medium materiality? Reading on paper and screen. Computers in Human Behavior, 67, 84-94. https://doi.org/10.1016/j.chb.2016.10.014

Jones, C., Ramanau, R., Cross, S., & Healing, G. (2010). Net generation or digital natives: Is there a distinct new generation entering university? Computers & Education, 54(3), 722-732. https://doi.org/10.1016/j.compedu.2009.09.022

Kazanci, Z. (2015). University students' preferences of reading from a printed paper or a digital screen – A longitudinal study. International Journal of Culture and History, 1, 50-53. https://doi.org/10.18178/ijch.2015.1.1.009

Mangen, A., & van-der-Weel, A. (2016). The evolution of reading in the age of digitisation: an integrative framework for reading research. Literacy, 50, 116-124. https://doi.org/10.1111/lit.12086

Mangen, A., Walgermo, B., & Bronnick, K. (2013). Reading linear texts on paper versus computer screen: Effects on reading comprehension. International Journal of Educational Research, 58, 61-68. https://doi.org/10.1016/j.ijer.2012.12.002

Molina, K. (2006). Lectura y educación: los hábitos lectores y su repercusión académica en le Educación Secundaria Obligatoria. Ocnos, 2, 103-121. https://doi.org/10.18239/ocnos_2006.02.07

Muter, P., & Maurutto, P. (1991). Reading and skimming from computer screens and books: The paperless office revisited? Behavior and Information Technology, 10(4), 257-266. https://doi.org/10.1080/01449299108924288

Nicholas, D., Rowlands, I., Clark, D., & Williams, P. (2011). Google Generation II: Web behaviour experiments with the BBC. Aslib Proceedings, 63(1), 28-45. https://doi.org/10.1108/00012531111103768

Parodi, G. (2011). La Teoría de la Comunicabilidad: Apuntes para una concepción integral de la comprensión de textos escritos. Signos, 44(76), 145-167. https://doi.org/10.4067/S0718-09342011000200004

Parodi, G., & Julio, C. (2017). More than words: Contending semiotic systems and the role of disciplinary knowledge in specialized text comprehension. Revista Ibérica, 33, 11-36. https://goo.gl/f52nhF

Parodi, G., Julio, C., & Recio, I. (2018). When words and graphs move the eyes: The processing of multimodal causal relations. Journal of Eye Movements Research, 11(1), 1-18. https://doi.org/10.16910/jemr.11.1.5

Peronard, M. (2007). Lectura en papel y en pantalla de computador. *Signos*, 40(63), 179-195. https://doi.org/10.4067/S0718-09342007000100009

Picasso-Pozo, M., Villanelo-Ninapaytan, M., & Bedoya-Arboleda, L. (2015). Hábitos de lectura y estudio y su relación con el rendimiento académico en estudiantes de odontología de una universidad peruana. Kiru, 12(1) 19-27. https://bit.ly/2OOjmqw

Piolat, A. Roussey, J.Y., & Thuning, O. (1997). Effects of screen presentation on text reading and revising. International Journal of Human-Computer Studies, 47(4), 565-589. https://doi.org/10.1006/ijhc.1997.0145

Prensky, M. (2001a). Digital natives, digital immigrants, Part 1. On the Horizon, 9(5), 1-6. https://doi.org/10.1108/10748120110424816

Prensky, M. (2001b). Digital natives, digital immigrants, Part II: Do they really think differently? On the Horizon, 9(6), 1-9. https://doi.org/10.1108/10748120110424843

Prensky, M. (2009). H. Sapiens digital: From digital immigrants and digital natives to digital wisdom digital wisdom. Innovate, 5(3). https://goo.gl/HQf85v

Rockinson-Szapkiw, A., Courduff, J., Carter, K., & Bennett, D. (2013). Electronic versus traditional print textbooks: A comparison study on the influence of university students' learning. Computers & Education, 63, 259-266. https://doi.org/10.1016/j.compedu.2012.11.022

Rowlands, I., Nicholas, D., Williams, P., Huntington, P., Fieldhouse, M., Gunter, B., Withey, R., Jamali, H., Dobrowolski, T., & Tenopir, C. (2008). The Google generation: The information behaviour of the researcher of the future. *Aslib Proceedings*, *60*(4), 290-310. https://doi.org/10.1108/00012530810887953

Salajan, F., Schönwetter, D., & Cleghorn, B. (2010). Student and faculty inter-generational digital divide: Fact or fiction? *Computers & Education*, *55*(3), 1393-1403. https://doi.org/10.1016/j.compedu.2010.06.017

Salvador-Oliván, J., & Agustín-Lacruz, M. (2015). Hábitos de lectura y consumo de información en estudiante de la Facultad de Filosofía y Letras de la Universidad de Zaragoza. *Anales de Documentación*, *18*(1), 1-15. https://doi.org/10.6018/analesdoc.18.1.201971

Sparrow, B., Liu, J., & Wegner, D. (2011). Google effects on memory: Cognitive consequences of having information at our fingertips. *Science*, *333*, 776-778. https://doi.org/10.1126/science.1207745

Selwyn, N. (2009). The digital native – myth and reality. *Aslib Proceedings*, *61*(4), 364-379. https://doi.org/10.1108/00012530910973776

Wang, S., & Bai, X. (2016). University students awareness, Usage and attitude towards e-books: Experience from China. *The Journal of Academic Librarianship*, *42*(3), 247-258. https://doi.org/10.1016/j.acalib.2016.01.001

Woody, W., Daniel, D., & Baker, C. (2010). E-book or textbooks: Students prefer textbooks. *Computers & Education*, *55*, 945-948. https://doi.org/10.1016/j.compedu.2010.04.005