

COMPARISON OF INTERNET USAGE HABITS IN TWO GENERATIONS OF HIGHER EDUCATION STUDENTS

A Case Study

Rosalina Babo, Carla Teixeira Lopes, Ana Cláudia Rodrigues, Mário Pinto
Ricardo Queirós and Paulo Coelho de Oliveira
IPP, Rua Dr. Roberto Frias, 712, 4200-465 Porto, Portugal

Keywords: Technologies Usage, e-Learning, Higher Education.

Abstract: To understand the importance of technologies like the Internet and Learning Management Systems to Higher Education students' learning activities, this study characterizes the Internet access behaviour of Polytechnic of Porto (IPP)' students. Student's habits were obtained through a questionnaire that was answered by 10% of all IPP students. Our analysis is focused not only on the global Internet usage profile under the Polytechnic of Porto, but also on the differences between the students born before and after 1980. International trends are confirmed in this Portuguese Higher Education institution.

1 INTRODUCTION

Don Tapscott (Tapscott, 1999) introduced, in the late 90's, the term net generation to characterize a whole new population born after 1980, that grew in an environment where technological artefacts and digital culture were a part of their everyday life.

This population "speaks" technology language, moves naturally in a virtual world, communicates and collaborates through electronic platforms intuitively and uses social networks as a way to establish professional and personal relationships (Prensky, 2001). On the other hand, the working and learning processes tend to develop some particular environments, like multitasking, visual learning, hypertext and compact information (Kenedy, 2009; Simões, 2009).

Considering this scenario, this paper attempts to characterize the Internet access behaviour of Higher Education students, by conducting a survey in Polytechnic of Porto (IPP¹). The second section of this paper focuses on the new Web paradigm and the third section describes the research methodology adopted in this study. The fourth section presents the survey results and the data analysis. The fifth section draws some conclusions and points some directions to future researches.

¹ In Portuguese: IPP – Instituto Politécnico do Porto

2 e-LEARNING

The Education was one of the areas where Internet boosted, changing the paradigm of the face-to-face learning to distance learning. The confluence of education with technology allows the appearance of the concept of electronic learning (eLearning). This concept can be defined as the delivery of educational content via any electronic media including the Internet, satellite broadcast, audio/video tape, interactive TV, CD-Rom and others (Tastle, 2005). In its first generation, eLearning systems have been developed for a particular field of learning and had a monolithic architecture (Harasim, 2006). Gradually, these systems have evolved (Williams, 2005) and become domain independent, with reusable tools compliant with several standards (Friesen, 2005) that could be effectively used in any virtually eLearning course. One such case is the Learning Management System (LMS) that aims to simplify the management of learning within an organization (Harman, 2007). In this type of system, students can plan their learning and collaborate with colleagues, while teachers may associate educational content and monitor, analyze and report progress to their students. Typically, these features are available through several tools included in the system (by default or by subsequent inclusion), such as forums, chats, resources, glossaries, tests, and workshops.

These tools will recreate classroom learning and allow different types of interaction, from synchronous to asynchronous, between the student and teacher.

3 RESEARCH METHODOLOGY

This section describes the methodology adopted in this study.

3.1 Study

To characterize Internet usage patterns in Higher Education students, we conducted a descriptive case study with students from IPP.

The Internet usage patterns were analyzed in 3 components: type of Internet usage (e.g.: location, frequency, type of use, motivation), communication tools (e.g.: social networks, chat, e-mail: which frequency, activities, benefits) and insights on the role of the Internet in education (e.g.: LMS, chat, e-mail: frequency, ease of use, perceived importance).

3.2 Data Collection

Data collection was done through an online questionnaire distributed to students of five IPP schools²: ESEIG, ESTSP, ESTGF, ISCAP, and ISEP. In the first week of June of 2009 a pilot test was carried out with 15 students from various programmes and academic years of ESEIG. This test validated the questionnaire's objectivity, understanding and also the web form's accessibility.

We began the dissemination of the questionnaire in the second week of June. The announcement was done by news on the school website, news on the school learning management system, e-mail messages sent to students and teachers (so they would ask their students to answer the questionnaire) and requests to teachers, who used computers in classrooms to free class time so students could complete the questionnaire. The questionnaire was open from June 5th until the end of July.

3.3 Population and Sample

Similar to what is done in other studies (Walker, 2007), we adopted the case study methodology. Students from five IPP schools compose the

universe of this study. The study included students from technological specialization programmes and from undergraduate and graduate programmes. In 1416 answers, 1396 were considered valid (11%).

ISEP, the biggest school in IPP, got 30% of the answers while ISCAP got 21%, ESTSP 10%, ESEIG 17% and ESTGF 6%.

Most of the students are undergraduate (94.6%). Only 5.2% are graduate students. The remaining 0.2% are students from technological specialization programmes. Concerning gender, 51% of students are female and 49% male.

As expected, there are more students born in and after 1980 (Youngest students - YS) than those born until 1980 (Oldest students - OldS). However, there is a significant percentage of older students (26%) since IPP also hosts working students, which are older than ordinary students.

The proportion of working students in the population is 25%. From these, 32% answered the survey.

4 DATA ANALYSIS

The data analysis focused on the type of Internet usage, communication tools and insights on the role of Internet in education. Besides a descriptive analysis of the sample, the association of the students' generation (born until 1980/born in 1980 and after) with several variables was also tested using the Chi-square test.

4.1 Type of Internet usage

The majority of the students access Internet at home (91%) and at school (80%). Only 24% says to possess mobile Internet access. Most students access Internet several times a day (65%), 32% connect daily and the remaining 3% connect monthly, weekly and even more rarely. In average, 52% of students are connected to the Internet between 1 and 3 hours. It is also observable that the student's generation is associated to the session's duration (p-value=0,000). Youngest students stay connected for longer period of time. An explanation for this factor could be the professional duties of the oldest students, which prevent them from a more lasting usage.

In average, 48% of the time spent in the Internet is for personal leisure (the standard deviation is 23, the mode is 50%). The most used Internet's tools are email (97%), search engines (95%) and instant messaging (59%).

² www.eseig.ipp.pt; www.estsp.ipp.pt; www.estgf.ipp.pt; www.iscap.ipp.pt; www.isep.ipp.pt

Students' generation is related with their instant messaging ($p=0,000$), social networks ($p=0,000$), forums ($p=0,009$) and games ($p=0,000$) habits.

With the two independent samples t-test, it was also verified that YS use more Internet applications ($p\text{-value}=0,000$) than OldS.

School is associated with the two main reasons for Internet usage: research concerning class works / study (94%) and access documents in Moodle or another LMS (79%). The other motivations differ in the two generations of students. YS use it to contact with friends, download music and movies, share information (documents, music, movies, etc.), visit friend's webpage in social networks, play games, and participate in forums. OldS use the Internet mainly to visit the LMS to obtain documents, exchange emails, read the news in newspapers, magazines and portals, be informed about themes unrelated with their studies, and to shop. Unlike the YS, they have the economic means that enable that attitude (Kwak, 2002).

It is noticeable that YS are more enrolled in activities of Web 2.0 like socialization and sharing (O'Reilly, 2007). On the other hand, OldS engage in activities of the Web 1.0 using the Internet as a mean to obtain information. This finding is consistent with several studies conducted in this area (O'Reilly, 2007; Kenedy, 2009)

4.2 Internet's Communication Tools

It is observed a huge usage of social networks among IPP's students, mainly among the YS, 77% of those have a profile in a social network. The importance of social networking is minor among the other group (46% do not have a profile).

Almost all students (91%) have a profile in Hi5, followed by Facebook (23%). About 33% of the students use social networks to connect with new friends.

Although 91% of IPP students have a Hi5 account, the YS have, in the whole, more accounts in social networks than the OldS. Among YS it is observed a more frequent use of social networks.

In social networks, students see photos ($p=0,000$), find what their contacts are doing ($p=0,000$), do comments ($p=0,000$), talk with other people ($p=0,003$), share information ($p=0,000$): photos, films, music, get information about companies ($p=0,000$) and actualize their CV ($p=0,000$). Activities with p-values are statistically related with students' generation.

In order to connect synchronously, 98% of the students use MSN, while Skype and Google Talk

have little shares (15% and 11%, respectively). 34% of the students use instant messaging several times a day and 28% use it at least daily. Again, YS are more frequent users.

Email usage is more adopted than instant messaging. 52% of students use email several times a day and 39% at least once a day. Unlike the observed with the results of Internet's session time, social networks and instant messaging usage, OldS do a larger use of email (71% use it several times a day against 48% of the YS). Professional reasons might explain this.

4.3 The Role of Internet in Education

Concerning LMS's usage, Moodle is used by 98% of the students. 14% of the students visit Moodle more than once a day, almost half the students (46%) visit it daily and 29% only visit it on a weekly basis.

There are barely any differences between the two generations regarding LMS's usage, which shows that this system is valued equally by the two generations.

OldS visit with greater frequency the eLearning platform ("several times a day"). When it comes to usability, 45% of the students consider Moodle "relatively easy to use" and 32% consider it "very easy to use".

More than a third of the students consider Moodle to have a "very important" role in education/learning, and 41% consider it "relatively important". 42% of the OldS say LMS has an important role in education (against 34% of the YS). We think this may be explained by the usefulness of Moodle to working students that have less availability to attend classes.

According to students, IPP's professors also use additional Internet tools. Email usage was emphasized (91%), followed by search engines (38%) and forums (24%). It is noticed that some professors also use games, social networks, blogs and wikis. The way professors interact with students is changing as Internet tools like instant messaging, forums and wikis become popular.

Emailing and instant messaging with colleagues and professors is considered "very important" or "relatively important" in the education/learning process. However, the exchange of emails is still considered more important (46%) than instant messaging (30%).

5 FINAL REMARKS

There are not many studies about the Portuguese Internet usage rates and habits and even less studies comparing Internet habits among two student's age groups. The described results are not a complete surprise but are original in the population they characterize, Portuguese higher education students.

They reveal that Internet access is made preferentially in school or at home. The majority of students access the Internet one or more times per day and the average time of each session is between 1 to 3 hours. It can also be observed that YS tend to use the Internet more frequently and in longer sessions than OldS. They are also more enrolled in activities of Web 2.0 like socialization and sharing (use internet for contacting friends, download music and movies, share information, visit friend's webpage in social networks, play games, and participate in forums). On the other hand OldS engage more in activities of the Web 1.0, using the Internet as a mean of getting information (for visiting the eLearning platform to look for new documents, exchange emails, read the news in newspapers, magazines and portals).

The data collected reveals that most students have, at least, one profile on a social network, and one third of respondents usually meet new people through these platforms.

The vast majority of students use e-mail and synchronous conversation at least once a day (91% and 62% respectively). However, we note that YS rely more often to chat synchronously, while OldS use e-mail more frequently. This is a sign, perhaps, of a shifting paradigm in interpersonal communication, where synchronous communication - faster and more immediate - tends to gain relevance to asynchronous communication, especially among younger generations.

Most students access to the eLearning system, Moodle in IPP, at least once a day. It appears that the majority of students do not find difficulties in using Moodle and think that this platform is an important tool in their learning process. It appears that for OldS this platform has a greater importance, probably because they work and have less physical presence in the university.

Finally, teachers use essentially the e-mail to communicate with students. The Web 2.0 tools such as wikis, forums or blogs still have little importance in supporting the teaching and learning process.

In the future, and also based on data collected in this study, we seek to analyze the habits of Internet use according to the gender and scientific field. It

would be also interesting to study the habits of Internet use of Higher Education teaching and non-teaching staff and compare the faculty habits with the habits students state they have.

REFERENCES

- Friesen, N. (2005). Interoperability and Learning Objects: An Overview of E-Learning Standardization.. *Interdisciplinary Journal of Knowledge and Learning Objects*.
- Harman, K. & Koohang, A. (2007). Learning Objects: Standards, Metadata, Repositories, and LCMS. Informing Science Institute.
- Harasim, L. (2006). History of E-learning: Shift Happened Export. In , *The International Handbook of Virtual Learning Environments* (Volume , p. pp. 59 - 94). Springer Netherlands.
- Harman, K. & Koohang, A. (2007). Learning Objects: Standards, Metadata, Repositories, and LCMS. Informing Science Institute.
- Kenedy, G. et al. (2009). Education the Net generation, a Handbook of Findings for Practice and Policy. Australian Learning and Teaching Council..
- Kwak, H., Fox, R. & Zinkhan, G (2002). What products can be successfully promoted and sold via the internet? *Journal of Advertising Research*, Jan.-Feb., .
- O'Reilly, T. (2007). What is Web 2.0 - Design Patterns and Business Models for the Next Generation of Software.. *International Journal of Digital Economics* , 65, pp. 17-37 retrieved in August, 13th 2009 in <http://oreilly.com/web2/archive/what-is-web-20.html>.
- Prensky, M. (2001). *Digital Natives, Digital Immigrants*. MCB University Press,.
- Simões, L. & Gouveia, L. (2009). Geração Net, Web 2.0 e Ensino Superior. *Cadernos de Estudos Mediáticos*, 21-32.
- Tapscott, D. (1999). *Growing up digital: the rise of the next generation*. McGraw-Hill.
- Tastle, J., White, A. & Shackleton, P. (2005). E-Learning in Higher Education: the challenge, effort, and return of investment. *International Journal on ELearning*, 4, 241-251.
- Walker, J. & Jorn, L. (2007). *Net Generation Students at the University of Minnesota*.
- Williams, J. & Goldberg, M. (2005). The evolution of e-learning. in *Proceedings of ASCILITE 2005 Conference*, Brisbane, Australia.