Student interaction in electronic environment

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STUDENTS INTERACTION IN ELECTRONIC ENVIRONMENT

ABSTRACT

Faced with the new challenges of social software and Web 2.0 tools, a question of implementing these in educational environment is raised. In order to better understand the information behaviour of students research was conducted on two academic institutions, state funded Faculty of Humanities and Social Sciences, University of Zagreb, and privately funded Accredited College of Business and Management Baltazar Adam Krčelić. Research was based on student information behaviour specifically on their patterns in using new web services (i.e. web 2.0 tools) and discovering new information needed in educational process. In order to recognize the need of implementing Web 2.0 services in existing e-learning systems, the patterns of their usage needed to be examined.

KEYWORDS

Web 2.0, student information behaviour, social media.

1. INTRODUCTION

In today's world information and communication technologies are the main drivers of modern digital society. Thery are influencing all the aspects of human life, and among others, educational environment as well. Educational institutions are expected to transform themselves in accordance to the challenges confronting the contemporary society. Development of the social interaction and participation enforced the new educational paradigm of creating student-centred learning environments based on interaction between learners and teachers, making the teacher-centered environment obsolete. Creation of learning environments that support productive learning should be the goal of these transformations. In such environment the key to success is seen not so much in how the information is presented, as in how well the learners can manipulate the different tools available in the multimedia learning environment on their own. Extensive use of a computer as a tool for solving problems can help learners to concentrate on understanding and solving problems rather than the finished product or the acquisition of declarative knowledge and can awaken their curiosity and creativity. (Ifenthaler, 2010)

The popularity and growing span of web 2.0 has been recognized by educators as they started to implement its tools in an educational environment. Now the focus is on user generated content and harnessing collective intelligence i.e. on added value of the user. Boettcher (2007 cited in Maron and Rennie, 2008) states that the wise usage of web 2.0 technologies in education could address call for students to develop 21st century skills. Blogging, wikis, e-portfolios and social networks present excellent tools for allowing learners to clarify concepts, establish meaningful links and relationships, and test their mental models. They provide a public forum in which the cumulative process of concept formation, refinement, application and revision is fully visible to student peers and teachers. By providing a comprehensive record of how concepts take form through multiple clusters of knowledge, such media can promote more complex and lasting retention of course ideas among students.

Apart form discussing the technology advancement we also need to clarify the emergence of different type of users co-existing in educational environment. Body of literature offers various terms. Still most widely and commonly used is one coined by Prensky (2001) – digital natives. Term seems to encompass the broad spectre of competences and probably best describes technology savvy generation as opposite to the generation born before such excessive ICT development and usage. This new generation has grown up around instantly accessible information and within a networked culture, in crossfire of multimedia stimuli, which resulted in the development of cognitive thinking patterns, expectations and methods of deriving

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meaning that differ from previous generations. With this new generation, the world of education has got their new user - highly motivated individuals willing to participate with each other and the content found on the web. Still, as mentioned before they are not the only ones inhabiting the higher education ecosystem. Tapscott (2009) gives extensive classification of generations regarding their usage of ICT as follows:

1. The Baby Boom Generation (1946 -1964)
2. Generation X (1965 – 1976)
3. The Net Generation (1977 – 1997)
4. Generation Next (1998 to present, also called Generation Z).

Analyzing average age of students enrolled in today's higher education and comparing how literature defines them we can conclude that they belong to digital natives or Net generation i.e. those who have grown up with technology.

Hypothetically, we can describe the digital natives as individuals that absorb information quickly, adapt to changes more easily and have capacity to assimilate learning faster and simultaneously from multiple sources. At the same time, according to various studies that examine the Internet impact on pupils critical and meta-cognitive abilities, they have difficulties analyzing information and understand it. Digital natives use technology differently than the generation before them. While growing up they have actively used Internet, instant messengers, mobile phones, iPods, mp3, online games, social networking, blogs etc. Tapscott (2009) defines distinctive attitudinal and behavioural characteristics that differentiate this generation from their baby-boom parents and other generations. The eight norms are: 1) freedom; 2) customization; 3) scrutiny; 4) integrity; 5) collaboration; 6) entertainment; 7) speed; and 8) innovation. These eight norms are rooted in the different experience of today's youth.

Andone (2006) has established the characteristics of "digital students" in a Europe-wide study:

- A high use of technology (computers, Internet, mobile phone) and technology is firmly embedded in students lives
- Technology is part of their education and also of their social life, both as individuals and at group level
- Using technology for communication
- An increased need for synchronous communication, but with asynchronous communication still very much anchored in their lives a strong emphasis on search methods
- Development of strategic thinking
- Mobile phone is perceived as a familiar and informal tool (SMS is increasing as preferred communication tool)
- Strong need for instant response
- Need to control their online and e-learning environment
- Direct participation and control over certain aspects of the educational process
- A preference for hands-on problem-solving
- Students prefer the richness of face-to-face interaction and they will prefer to communicate online or via mobile phone just with people whom they already know.

Taking into consideration these facts our main research focus in this article was to make one step forward and find out how to successfully implement new Web 2.0 services in existing e-learning systems with focus on analyzing and comparing usage of traditional knowledge discovery patterns together with new emerging services such as social networking, picture and video sharing or instant messaging.

2. THE SURVEY

In order to investigate current students access to technology, their use of social software, and whether they use it for educational purposes or not, a local survey was conducted.

2. 1 Methodology

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The research was conducted in December of 2010 where a total of 397 students from the Faculty of Humanities and Social Sciences (FHSS) at the University of Zagreb and Accredited College of Business and Management "Baltazar Adam Krčelić" (ACBM) responded to the online survey. The main focus was to establish the patterns of usage regarding new services and technologies, and to determine possible differences in usage. Educational institutions of different scope were used in order to identify whether there are any differences between students enrolled in institutions on different levels i.e. university and college.

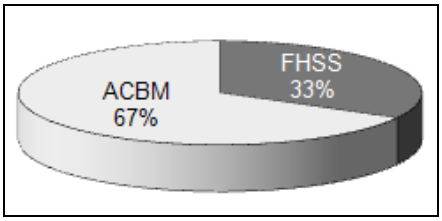
The Faculty of Humanities and Social Sciences at the University of Zagreb educates students on undergraduate, graduate and postgraduate students in the field of social sciences and humanities. It is constituted out of 23 Departments offering more than 100 study programs. From 2005/2006 Faculty offers new programs (total 75 programs) in accordance with the Bologna process (42 BA and 33 MA programs). There are two models of study programs: single major (all courses belong to one program) and double majors (student studies in two equally important programs for equal degrees in both of them) (http://www.ffzg.hr/international/). Since 2004 FHSS students are introduced to the e-learning system Omega which requires their almost everyday usage of ICT in their educational life. In other words, educational techniques and practices they get acquainted with during their study will ultimately affect their own future educational practice.

Accredited College for Business and Management «Baltazar Adam Krčelić» (http://www.vspu.hr/) is a privately owned college and in Register of Institutions of Higher Education at the Ministry of Science and Technology since 2001. Professional studies of business and management have basic goal to prepare students for certain types of business in various kinds of organizations as well as for management on an operative level. Modular programme system is based on professional studies of business and management (students are directed into three different majors, all based on 180 ECTS credits with professional title professional baccalaureus/baccalaurea BA): Business Economy and Finance, Cultural Management and Business Secretary and also the specialist graduate professional studies (120 ECTS): Project Management (in cooperation with Ruđer Bošković Institute) and Communication Management.

2.2 Results and discussion

There were 131 respondents (33%) from the Faculty of Humanities and Social Sciences (FHSS), and 296 students (67%) that attend the business school “Adam Baltazar Krčelić (ACBM) (Figure 1.). The FHSS sample also showed that the department represented with the highest number of respondents was Department of Information Sciences with 103 students (79%)

Figure 1. Distribution of respondents



The results are presented in three main parts corresponding to the areas surveyed: student access to and use of technology, student use of social software, and the use of social software in their education. Graphical representations are given where appropriate.

2.2.1 Access to and use of technology

In order to complete most of their college assignments, such as homework or writing papers, students often need two main components: an Internet connection and a computer. To see whether students have the appropriate tools, the first part of the survey examined their situation regarding Internet access and technology. The results showed that vast majority of students have Internet access from their homes, with

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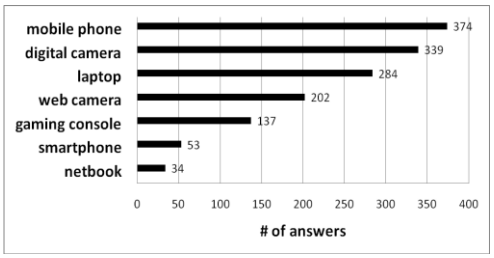
97% of the respondents giving a positive answer. When asked about the devices or gadgets they own personally (Figure 2.), the most frequently owned devices were mobile phone (96%), digital camera (85%), laptop (71%) and a web camera (51%).

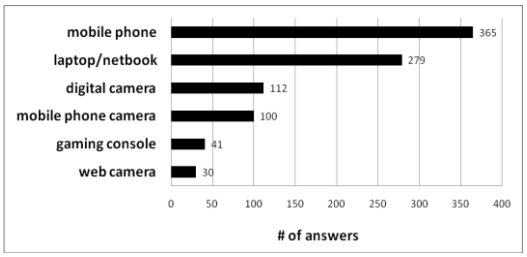
Figure 2. Which of the following devices/gadgets do you own (N=397)?



These results showed that the students are actually very well equipped for completing their college assignments. The difference between FHSS students and ACBM students were visible in the area of smartphones, where only 5% of FHSS students own one, compared to 17% of ACBM students.

The next question surveyed how often students actually use the devices they own. The results (Figure 3.) showed that they most commonly use their mobile phone (93%) and laptop (86%).

Figure 3. How often do you use devices/gadgets that you own – answers *daily* and *often* combined (N=397)



2.2.2 Use of social software

Second part of the survey tried to examine how student use new emerging services commonly known as social software and what are their patterns of usage.

When looking at the services that the students use on a daily basis (Figure 4.) we can see that the most commonly used services are e-mail (79%), social networks (78%), browsing video and pictures (66%), IM/chat (64%) and the use of wikis (46%).

Figure 4. Commonly used online services – answers *daily* and *often* combined

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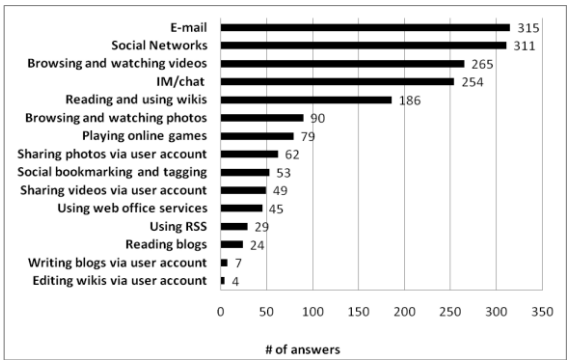
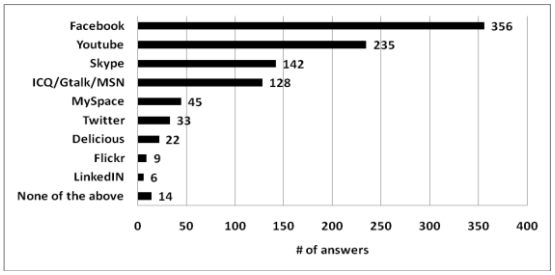


Compared to the previous study from the authors (Banek Zorica, Ivanjko, 2010.) there is a notable increase in the use of social networks, which have practically levelled with the use of e-mail. There were also some noticeable differences between the students. The FHSS students tend to use e-mail more (92%) than the ACBM students (73%). Also, they are more geared towards using wikis (73%) compared to the VSPU students (34%).

To examine the specific use of popular social software, the question on the usage of popular services worldwide was included in the survey.

The popularity of Facebook worldwide was confirmed, showing that 90% of the students have a Facebook account (Figure 5.). Other popular services include Youtube (60%), Skype (35%) and IM services (32%).

Figure 5. On which of the following social networks/services do you own an account? (N=397)



Detailed answer analysis also discovered that FHSS students use the social bookmarking service Delicious more often (14% compared to 4%) and that they are much keener in using IM services (49% compared to 24%).

To gain some further insight into the use of social networks, the students were asked to answer in which activities they engage within their social network. The results (Figure 5.) showed that the most common activities are chatting (52%) and browsing photos from other users (39%). A significant part of the students also engages in tagging (22%), playing games (21%), watching videos (19%) and sharing their own photos (17%).

Figure 6. Activites inside social network (N=397)

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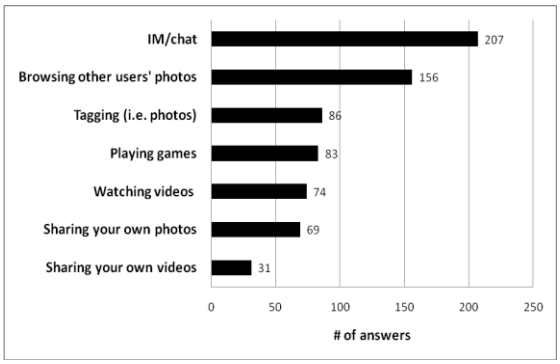


Students were also asked whether they think their teachers should have an official account on their social network, and results showed that students have divided opinion with around 50% of the students stated their opinions both for and against teaching staff being part of their social network.

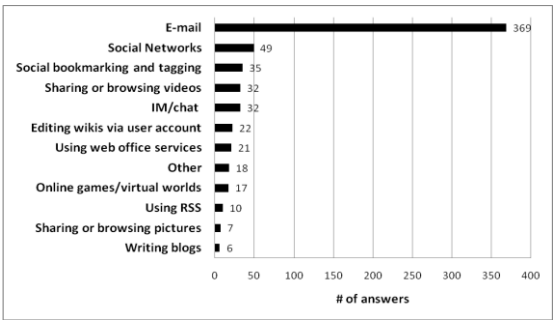
When asked, in case their teacher was a member of their social network, would they adjust privacy settings in a way that would deny him the access their private data (i.e. photos, commentaries), their opinion was divided again at around 50% choosing each answer. However, detailed analysis showed that the 70% of FHSS students are much more likely to deny access of teaching staff to their private network. This raises a question whether it is valid to have educational process extended and entering the social networks environment like Facebook and alike. Although, research and theory also divided opinions this still needs to be researched more in detail in order to find educational modes responding to both teacher and students needs.

2.2.3 Use of social software in education

The final part of the survey tried to examine student attitudes and experiences in using social software in education. Since both FHSS and ACBM have an integrated e-learning system which are used in classes, the first question of how many students are using the e-learning system provided by their institution showed that almost all students (98%) are using institutional educational platform. The result is logical, since the educational process in both institutions relies on the use of their e-learning system and forces the students to enrol.

When asked which of the commonly used online services they have used in their classes, whether to communicate with their teachers or as a part of the learning process, only e-mail proved to be heavily used (92%), while other online services had a usage rate well below 20% (Figure 7.). There were some significant differences between two group of students. The use of social bookmarking an tagging was much more used at the FHSS (24% compared to 2%), and the same pattern was discovered when analysing the use of wikis (14% compared to 2%) and the use of video sharing (14% compared to 4%)

Figure 7. Use of online services in class (N=397)



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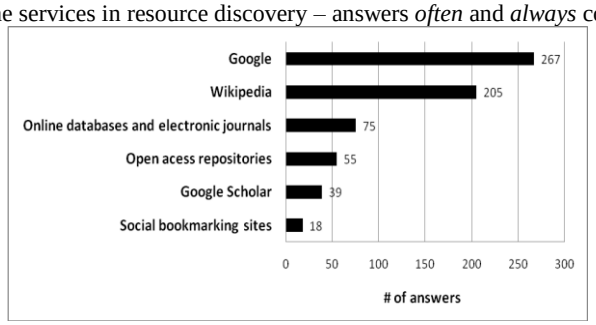
The final question tried to investigate the information patterns of resource discovery between the students to see how much students use online services in their research or to find sources for their papers. The results (Figure 8.) show that most commonly services used are Google (67%) and Wikipedia (51%).

Figure 8. Use of online services in resource discovery – answers *often* and *always* combined (N=397**)**



Again, there were some differences between the samples. If we combine answers often and always the FHSS students showed greater use of online databases and e-journals (40% compared to 8%) and a greater use of open access repositories (33% compared to 5%). They also showed more frequent usage of Google (85% compared to 59%) and Wikipedia (60% compared to 43%).

3. CONCLUSION

This article has presented the results of an empirical study of students' access to technology, their use of social software, and whether they use it in educational purposes. It tried to determine whether the global concept of "digital natives", as described by Prenksy, is applicable under local conditions. The study showed that, although students have the tools and access to vast array of social software and emerging services, only one significant usage pattern was found.

Results showed that social networks dominate the field, with Facebook being the dominant service. Other services, such as wikis, RSS, blogging or social bookmarking services are used little or not at all. The only cases, in which the students use other social software than social networks, are when they are forced to use them as a part of their classes or assignments. In the area of resource discovery, it was shown that Google and Wikipedia are the cornerstones of resolving every information need, with the occasional use of scientific databases, e-journals and open repositories by FHSS students.

The students of FHSS generally use online services more often, but that that pattern can be explained by taking into consideration the number of students from the Department of Information Sciences in the FHSS sample. Since the classes at the Department use those services as a part of the learning process, those practices reflected on the responses

Regardless of the diverse usage in the two samples, this article has shown that students who should be "digital natives" (at least by their age group), do not all act or use the technology and emerging services in the way that Prensky describes it. Further studies should investigate social networks, since they are heavily used by the students, and their possible uses in the in educational purposes.

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