

Digital Libraries Impact on Students' Learning Behaviour. Case Study: Medical Students

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Abstract. Advanced web-based technologies and the advent of cloud computing have transformed the academic library into the core provider of digital information and learning resources. The "Lucian Blaga" University of Sibiu has one of the most advanced digital libraries of Romania. In order to enhance the quality of the library services we have designed an exploratory study aimed to assess the impact of the digital library on student learning behaviour. Students, from almost all faculties (medicine and pharmacy, engineering, sciences, history and philology, law etc), have been involved in the study. They have been asked to answer to a questionnaire about how they are using the digital library, what other sources of information they are using, if they are satisfied with the library services, if and how they have obtained the required bibliography. The information obtained from questionnaires was compared with data on students' interaction with the digital library and with their learning outcomes. In our paper we are presenting the results of the study applied to students in medical sciences, pharmacy and nursing.

Keywords: digital library, information sources, student learning behaviour; exploratory research; librarian role.

1. **Background.** The library of the "Lucian Blaga" University of Sibiu is a relative young library, combining classical facilities with modern technology (fig.1). The digital library is also a multimedia documentation centre and it is involved in several research and development projects, at national and international level.



Fig 1 . Reading rooms, Internet room, advanced scanner

The university library has an active role in enhancing the academic achievements of professors and students. A recent study has shown that the majority of the library users are students (over 50%). Most accesses to the virtual and offline resources of the library are taking place during the academic year (fig.2). In 58% of the cases, the digital information represents more than 60% of the final results of the documentation process (fig. 3).

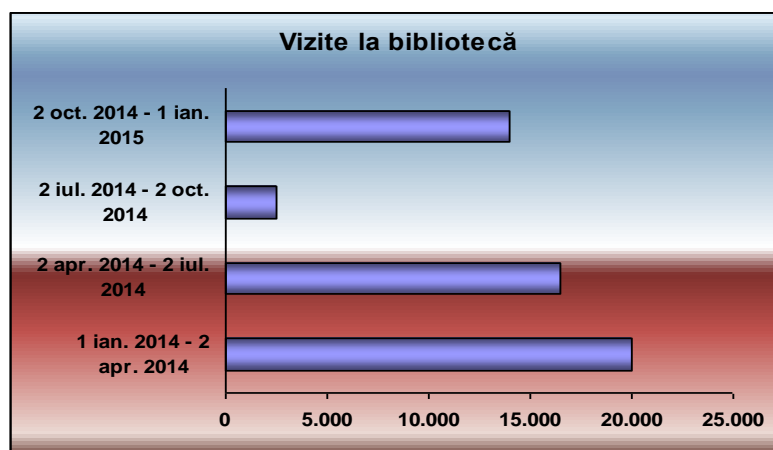
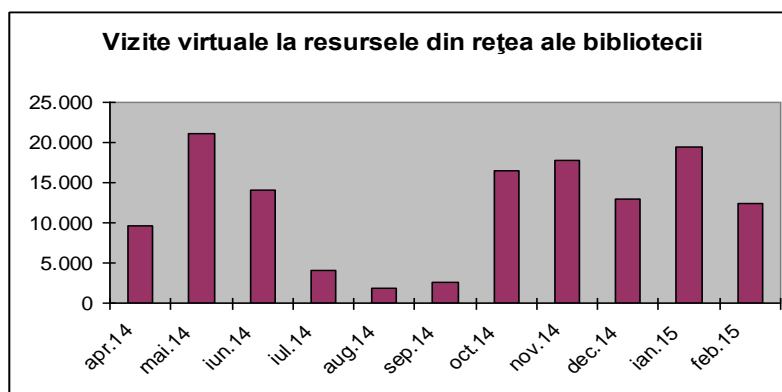


Fig. 2 a.-virtual visits b. – offline visits

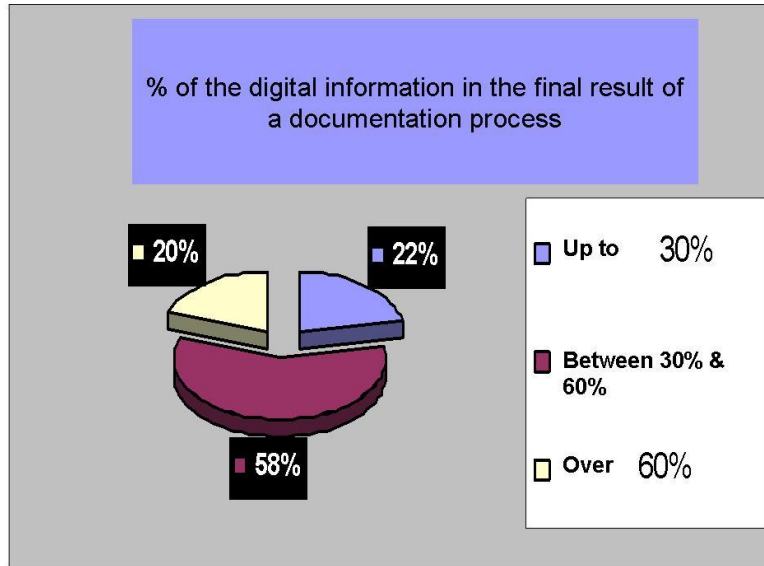


Fig. 3

In order to enhance the quality of the library services we have designed an exploratory study aimed to assess the impact of the digital library on student learning behaviour. In this paper we are presenting the results of this study applied to students in medical sciences, pharmacy and nursing. We started in our research from the results of a former study aimed to investigate the behavioural profile of our students. It is well known that education is in a deep crisis. Students are less motivated, with a low interest/curiosity to find out what is new in the study domain; they are prone to the copy/paste effect. This is happening in a context that should be benefit to the intellectual development of the student: innovating learning environments, digital libraries, collaborative environments, virtual worlds.

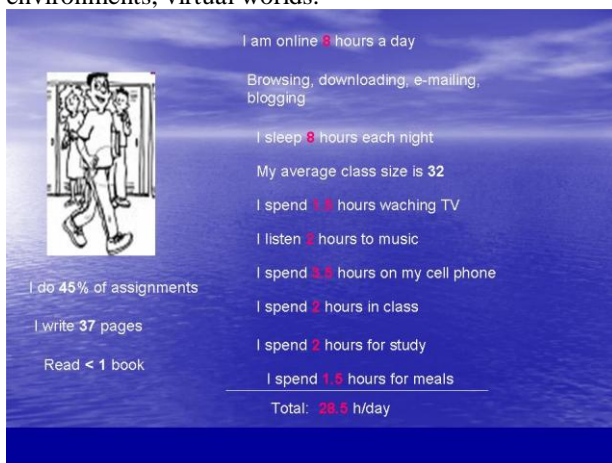


Fig. 4

There is also the reverse of the medal: an increasing information flow, excessive use of social networks and digital communication media, all driving to time fragmentation (fig.4), lost of the ability to connect to real people and a decrease in creativity. The study on the behavioural profile of our students showed that 23.43 % have verbal intelligence and contrary of our expectations, only 15.6% logical/mathematical intelligence. 21.87% have kinaesthetic intelligence as a predominant characteristic and most students have visual intelligence (Neuro Linguistic Programming intelligences). Analysing the results of two learning styles assessments (Honey&Mumford and Adizes), we have observed that most students have a pragmatic, practical learning style and only less than 19% have a theoretical, logical style. Learning and working in a digital world can raise many conflicts: a distorting understanding of *sharing* and intellectual property rights due to web philosophy and misleading, false information due to the unchecked quality of what is uploaded on the net (the “It is good for it is on the web” and “It is true for it is on the web” syndromes).

Taking all these into account, the ULBS Library is trying to develop user-centred services, to clarify and disseminate terminology and to redefine / rediscover the role of the librarian [1].

There are many definitions of a digital library [3]. What is common to all definitions is the use of new technologies, of digital collections, and the online access to services and resources.

The main goal of a university library is to support research and education and it is relevant to ask our selves if and how the introduction of digital libraries is improving these activities. One of the questions we have asked ourselves was how the digital library is affecting the learning style of the student.

In our paper we are presenting the first results of a survey (exploratory study) aimed to answer to the question: “Did the digital library has an impact on the students` learning style?” question address to the medical academic community of the “Lucian Blaga” University of Sibiu.

2. Materials and methods

In order to obtain an orientate answer to the question: “Did the digital library have an impact on the students` learning style?” we have built a set of three questionnaires for three groups of subjects representing three generations:

- Group 1: Physicians that have been students before the Internet era – 15 subjects;
- Group 2: Physicians that have been students during the Internet era – 20subjects, and
- Group 3: Students at the faculty of medicine and pharmacy (students in the digital era) – 64 subjects. The subjects in this group were randomly selected from the students of the faculty.

All questionnaires had a section for demographic data. The main part of the questionnaires consisted of items about how much time was allocated to the documentation process, how often a subject was/is going to the university

library, if today they are users of the classical and digital library, the use of Internet and access to professional journals and the role of the librarian..

3. Main Results

Group 1: Physicians that have been students before the Internet era:

- 100% of the subjects were visiting 1-2 times per week the library of the faculty or that of the university;
- 45% of the subjects considered that the librarian was a real aid in finding the right documentation .
- Today :
- 50% are consulting the Digital library
- 90 % are not consulting Classical libraries
- 100% are using Internet 1-2 hours per day ; more if needed
- 100% are no more consulting the librarian

Group 2: Physicians that have been students during the Internet era:

- 100% are searching information on the net t a rate of 1-2 hours per week;
- 90% are not consulting the librarian;
- 65% have a subscription to 1 medical online site; 15 % to 2, and 2% to more than 2 medical sites;
- 45% have a subscription to a maximum of 3 offline journals;
- 9% are visiting classical libraries, but not for professional aspects.

Group 3: Students at the faculty of medicine and pharmacy:

- 100% are accessing the digital library 1-2 times per week;
- over 96% are staying on the net 2-3 hours per day;
- 80% are not consulting the librarian;
- 15% are consulting more than the recommended bibliography;
- 10% have a subscriptions to a medical journal, and 40% to a medical site.

4. Conclusions

This first study shows us that there are not dramatic changes in the students learning behaviour in what it concerns documentation habits. It also shows that the role of the librarian changed and has to be reconsidered. Thirty years ago, the librarian was a true consultant, giving advices and recommending to students the best journals and books to read. Today students are going on the net and ask Google. This attitude is prone to misleads as not all information found on the web is correct. We also have expected that having access to the digital library, a greater percentage of students will consult more than the recommended bibliography. This situation will bring new challenges to the librarian that will have to play a major role in encouraging reading and the spirit of enquiry, focusing on digital resources and expanding the use of virtual channels to deliver these resources.

This study has limitations, so our intent is to extend it to students enrolled in other specialities.

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