

## **DIGITAL UNIVERSITY LIBRARIES – STUDENT PERCEPTIONS<sup>2</sup>**

**Abstract.** *The university libraries “Svetozar Marković” in Belgrade and “Nikola Tesla” in Niš were among the first to be actively involved in the process of digitization of libraries in Serbia. They are working on new projects supported by the European Union in order to modernize and develop new ways to transfer scientific and professional information. Consequently, they are a valuable source of information for writing professional and scientific papers, as well as obligations provided by curricula, especially at higher levels of study.*

*The main goal of this paper is to examine the attitudes of doctoral students at the University of Belgrade and the University of Niš on the usefulness of digital resources of the university libraries “Svetozar Marković” and “Nikola Tesla”. Accordingly, research tasks include issues related to informing students about the potential of the digital libraries, and the use of electronic resources that they offer. For the purpose of the research, an instrument that was used was a questionnaire, which was created purposely and delivered electronically to the respondents. Research data were processed through qualitative and quantitative methods and presented graphically.*

*The results of the research show that students are partially informed about the potential of the digital university library, that improvements in information about audio and video files are possible; also, that students recognize the benefits of using electronic resources and their usefulness in the study process.*

**Key words:** *Digital university libraries, students, electronic resources, usefulness, doctoral studies*

### **1. Introduction**

Over the past few decades, the impact of new technologies on the field of higher education has been noticeable (Gleason, 2018). It is known that libraries have one of the most important roles in the learning process, namely to provide access to various resources, such as e-books, magazines, movies, digital databases, software and other professional learning tools that can benefit everyone in higher education

---

<sup>1</sup> dragana.pavlovic@filfak.ni.ac.rs

<sup>2</sup> Received January / Accepted March 2022

(Oakleaf, 2010). Although the implementation of modern technological tools in libraries began much earlier, their influence is becoming increasingly evident with the formation of digital libraries. Rapid changes and the development of information and communication technologies contribute to the fact that university libraries have an ever-widening range of services, as well as different ways of delivering materials. As a result, digital libraries in the academic context are becoming an invaluable resource for students, researchers and lecturers.

The emergence of mobile devices and the possibility of their application in the academic context has opened new questions related to innovation and modernization of education of future academics (Rossing et al., 2012). This is especially true for laptops and mobile phones, which open up space for access to digital materials anywhere and anytime with their new features. From the perspective of students and scientific researchers, the use of mobile devices has significantly changed the picture of studying, which is no longer based on long stays in university libraries, but on the permanent use of digital channels in order to access scientific information. Consequently, digital libraries today play a key role in studying, but also in creating, developing and promoting scientific capital and scientific communication.

Having in mind the significant role of digital libraries in the process of studying and scientific research, this paper aims to examine the perceptions of doctoral students about the usefulness of the university library digital resources.

### **1.1. Digitization of libraries**

The process of digitization of libraries is based on the development of modern technologies and has a leading role in preserving, protecting and promoting the cultural and scientific values of every society (Lynch, 2007). Significant support for the digitization process is provided by the vision of the European Digital Library, which is presented in a document titled Commission Recommendation on the digitization and online accessibility of cultural material and digital preservation. This document initiates the establishment of digitization centers in the countries of the European Union in order to make the European cultural heritage more accessible via the web (The Commission of the European communities, 2006). In Serbia and in the surrounding area, the digitization of library materials has been developing in accordance with the established standards that followed European trends (Vukotić, 2012; Tendjer, 2014).

Today, it is generally accepted that digitization in libraries has a key role to play in preserving, presenting and promoting scientific, cultural and historical sources (Nielsen, Hjørland, 2014). Digitization facilitates scientific and research work because it opens the possibility for users (scientific researchers, students and other interested subjects) to access digitized scientific content from remote locations (Lippincott, 2015). In addition, the digitization of libraries has a number of other advantages related to the availability of databases, protection of sources and storage in a new digitized form (IFLA, 2014). In this context, digitization is now considered an indispensable method in the protection of cultural and scientific

heritage. However, according to Babović and Mašić (2016), digitization is not just a process of mere data transfer from one medium to another, but implies digital processing of manuscripts that includes hiring not only experts in computer science and librarianship, but also scientists and researchers of social sciences. Digital cultural treasures (texts, databases, images, sound, graphics, web pages) can exist in any language, in any part of the world and in any area of human knowledge and expression (Babović, Mašić, 2016).

Experiences from other countries show that libraries are undergoing a number of developmental changes required by the information environment (Costa, Gomes, Silva, 2017; Rane, 2015; Andresoo, 2009). In providing adequate services that have determined the digital age, libraries face many challenges to enable the transfer of information in a way that suits modern users (Evens, Hauttekeete, 2011; Conway, 2010). New technologies, especially those that enable mobile data communication, provide quick and easy access to data held in digital libraries (ChanLin, Hung, 2016; Murray, 2010; Lippincott, 2010). Accordingly, digital libraries are becoming increasingly important both in the field of education and in other social subsystems.

According to Smith (2001), a digital library is an organized and focused collection of digital objects, including text, images, video and audio materials, with developed search and access methods for selecting, creating, organizing, maintaining and sharing collections. Accordingly, it can be stated that digital libraries, unlike the classic ones, have a variety of content that they can offer to their users. Digital university libraries are of special importance for students, lecturers and researchers.

University libraries in Serbia are dedicated to modernization, so three university libraries (from Belgrade, Niš and Kragujevac) became part of the European academic network of libraries in 2001, which, among other things, included projects of digitization of resources. At the time, these libraries were the only partners in the Europeana project for libraries from non-EU countries. All these activities were guided by the idea of providing open access to content with the ultimate goal of popularizing and increasing the availability of digitized content (Antonić, Mitrović, Sofronijević, 2011).

## **2. Methodological approach**

### **2.1. Research goals, methods, sample and instruments**

The main goal of this research is to examine if doctoral students at the Faculty of Philology in Belgrade and doctoral students at the Faculty of Philosophy in Niš are informed about the potential of digital university libraries “Svetozar Marković” and “Nikola Tesla”, and to examine their perceptions on the usefulness of the university libraries’ digital resources.

In accordance with the set goal of the research, a descriptive method was applied in the paper, and the obtained data were processed qualitatively and quantitatively. The sample of examined students was deliberately selected and it consisted of 25

students from all years of doctoral studies, 15 from the University of Belgrade and 10 from the University of Niš. For the purposes of this research, doctoral students were intentionally selected because it is assumed that they make greater use of digital library resources, as well as have more experience with the use of digital resources, in accordance with the requirements of doctoral studies (research projects, literature study, preparation of doctoral dissertation, etc.).

From the methodological point of view, it can be stated that this is a relatively small number of respondents. However, this is understandable, given that the number of doctoral students is certainly lower than undergraduate or master's degree students, and that the survey was organized online and on a voluntary basis, which generally causes less student interest.

The basic instrument of the research is an anonymous questionnaire which was purposely made for the needs of this research. The questionnaire consists of 9 closed-ended questions. For the purposes of this paper, data were used to express students' perceptions of the usefulness of digital libraries, information and their potential and experience in using them for study purposes.

In statistical data processing, quantitative procedures were used – to calculate estimates, as well as methods of qualitative analysis – for questions in which students reported their experiences in using the digital library. The student survey was conducted using an online survey during February 2020.

### **3. Review and discussion of research results**

In relation to the goal of the research, the obtained data are shown in Figure 1. The largest number of doctoral students were familiar with the information that books can be searched on the digital university library website, which was stated by 24 respondents (96%), while only one (4%) was not familiar with this information. In the same percentage, respondents were informed that scientific journals could be searched on the digital university library website, while only one respondent had no knowledge about it. Out of a total of 25 respondents, 18 (72%) were informed that conference proceedings could be searched on the university library's website, while 7 (28%) respondents were not informed about this service offered by the university library. A significantly lower number of students – 5 (20%) were informed about the fact that the site of the digital university library provided the possibility of listening to sound recordings, while 20 of them (80%) were not familiar with this information. The situation is the same with information about the possibility of watching videos and movies, about which obviously a larger number of doctoral students have no knowledge. In contrast, a large number of respondents - 14 (56%) were aware that the master's thesis can be searched on the site of the digital university library, while 11 (44%) respondents did not have such information. Given that the research sample consisted of doctoral students, it is reasonable to assume that they were familiar with the possibilities offered by the digital university library when it comes to searching for completed doctoral dissertations. However, the data according to which the

respondents were insufficiently informed about this possibility are surprising. Namely, 17 (68%) respondents were informed about the potential of university libraries when it comes to searching for completed doctoral dissertations, while 8 (32%) respondents did not know about the availability of completed doctoral theses. A small number of respondents, 5 of them (20%), stated that they used other resources that were on the website of the university library, such as documents, native collections, etc. Based on the presented data, it can be stated that the students are partially informed about the possibilities digital university libraries offer to their users.

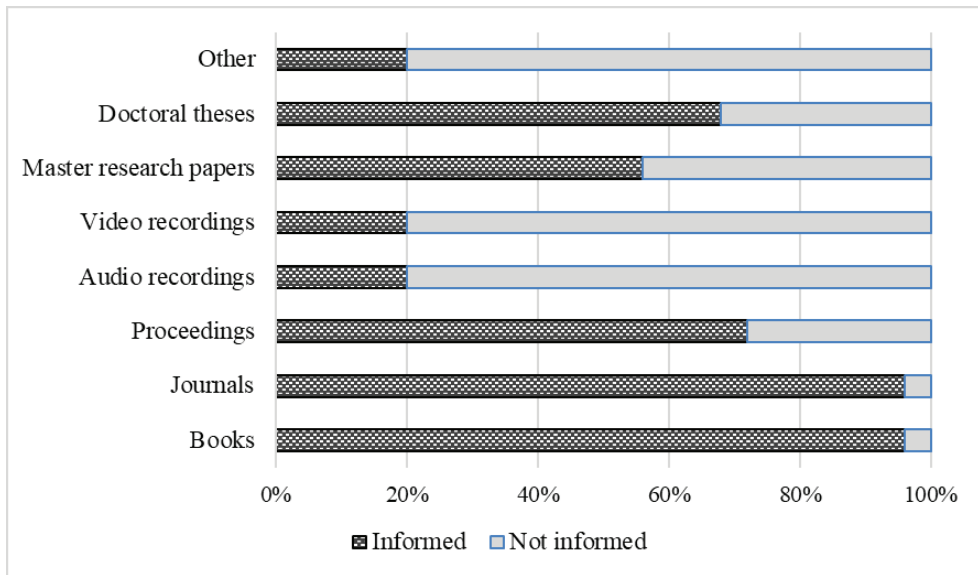


Fig 1. Informatization of doctoral students about the potential of the digital library

The results of the research related to information about the potential of digital libraries, from the aspect of the type of electronic sources, indicate that doctoral students are mostly informed about sources related to books and journals. To a lesser extent, students are familiar with the possibilities of using conference proceedings, while they are the least informed about the potential in the form of audio recordings and video content. This result can be explained by the fact that the respondents are doctoral students at the Faculty of Philology and the Faculty of Philosophy, and that for the purposes of their studies it may be more important to use written sources, books and articles, compared to audio and video recordings. Interesting and unexpected data were obtained in relation to the search for doctoral dissertations that have already been published, because it is logical to assume that doctoral students should show greater interest in searching and reading completed theses, which are now available on the university library website. The reason for the weaker interest in searching for completed doctoral dissertations may be the specific topic for which students were interested, but also insufficient information about the availability, i.e., the ability to search and read already published doctoral dissertations.

The data obtained within the questions related to the use of digital resources in university libraries are shown in Figure 2. The doctoral students in university libraries use both printed and digital sources in the study process. The data obtained from the research indicate that the largest number of respondents were in favor of combining digital and printed materials in the learning process, which was stated by 16 (64%) of respondents. A slight advantage over electronic sources in relation to the printed ones was given by 9 (36%), while none of the respondents opted for the use of exclusively printed sources. However, it is surprising that as many as 21 respondents, or 84%, point out that printed texts are easier to use, while only 4 or 16% of respondents opted for direct screen learning.

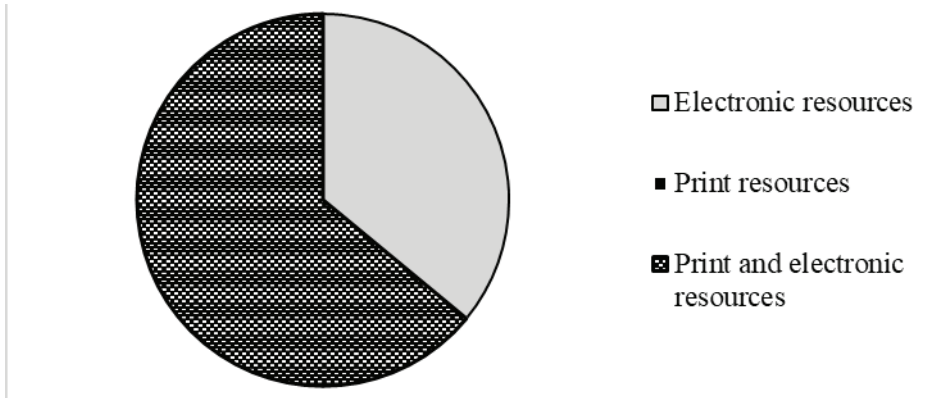


Fig 2. Student preferences in relation to printed and electronic sources

Figure 3 shows students' perceptions of the benefits of digital resources. Students single out ease of access, which is stated by 9 (36%) respondents; possibility of more efficient search of 7 (28%) respondents, while a lower number of them state other advantages of digital texts such as the speed of obtaining results – 5 respondents (20%), availability of relevant sources – 2 (8%) and ease of use which 2 (8%) surveyed students state.

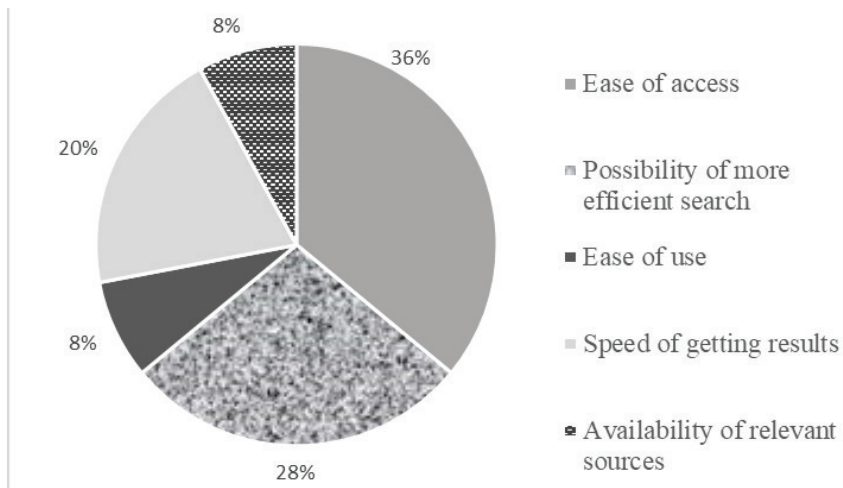


Fig 3. Students' perceptions about the advantages of digital sources

The obtained data are expected and the respondents in this research believe that it is necessary to use digital and printed resources while studying at the level of doctoral studies. Namely, doctoral students are instructed to use digital texts and databases for their exam requirements and pre-exam obligations, in addition to printed sources. Complex requirements for doctoral studies, and especially independent research papers, require additional research and use of various foreign books and journals that can only be found in digital form in our country. In this context, it is necessary to use various foreign journal databases, which are offered through the sites of the digital university libraries. Accordingly, students are instructed to use a variety of digital sources, since many original sources are unavailable in our area. It is therefore not surprising that almost all respondents use digital resources offered by the university library. In addition, other advantages of digital sources are very important, which the respondents state, in addition to availability, significant ease of access, efficiency and speed in obtaining the required data, but also their relevance. However, it is interesting that most students, when it comes to reading texts, prefer printed texts to digital texts. The reason for this may be the student's habit to underline and mark something on paper, or add to it during studying, while direct reading from the screen can be tedious or, if it is long-lasting, even harmful to eyesight. The research data unequivocally indicate that doctoral students see the usefulness of digital libraries in the study process.

Based on the obtained data, it can be concluded that the surveyed students mostly believe that digital university libraries are very useful during their studies, which 20 (80%) of the respondents point out. Only 5 respondents, or 20%, believe that digital university libraries are partially useful during their studies, whereas there are no respondents who do not realize their usefulness. This is further confirmed by the data that respondents would be very happy to recommend the use of digital university library resources during their studies, which was stated by as many as 23 (92%) doctoral students, while only 2 of them would not give such a recommendation.

#### **4. Conclusion**

Based on the obtained data, it can be concluded that doctoral students recognize the usefulness of digital libraries during their studies. The results also indicate that doctoral students are partially informed about the potential of the university libraries, so there is room for improvement. These results can be understandable to some extent, especially if we keep in mind that doctoral students are mainly focused on reviewing and searching the digital resources of the library due to the performance of pre-examination and other study obligations, but using audio and video resources in research could potentially lead to new research topics.

The research also confirms that students use the digital resources that the university library has. Although the results of the research show that students prefer to use a combination of digital and printed sources, a slight advantage is on the side of digital sources mainly due to their availability, simplicity and ease of use.

Also, the research data unequivocally confirm that doctoral students are aware of the importance of digital sources for the study process and that they recommend to their colleagues the use of digital resources of the university library.

Although the instrument used in this study was anonymous, the obtained results should be accepted with caution. Due to the low number of doctoral students, only 25 students participated in the research, and therefore generalization is not possible. Furthermore, some respondents might have given socially desirable answers, which can happen in similar research. However, despite the present limitations, the obtained results can be of importance to employees in university libraries, but also to researchers as a basis for future research of students' attitudes towards digital libraries.

## References

- Andresoo, J. (2009). Towards the Digital Library: Estonian Approach. *Alexandria*, 21(1), 1-8. <https://doi.org/10.7227/ALX.21.1.2>
- Antonić, S., Mitrović, J., Sofronijević, A. (2011). Fostering Open Access usage by creation of the library aggregator for Europeana: project Europeana libraries. *INFORUM 2011: 17th Conference on Professional Information Resources Prague*. <https://www.inforum.cz/proceedings/2011/21/>
- Babović, DŽ., Mašić, M. (2016). Digitalna pohrana kulturnohistorijskog blaga Bosne i Hercegovine: rukopisne zbirke. *Bosniaca- Journal of National and University Library of Bosnia and Herzegovina*, 21, 59-68.
- ChanLin, L.-J., Hung, W.-H. (2016). Usability and evaluation of a library mobile web site. *The Electronic Library*, 34(4), 636-650. <https://doi.org/10.1108/EL-07-2015-0119>
- Conway, P. (2010). Preservation in the Age of Google: Digitization, Digital Preservation, and Dilemmas. *The Library Quarterly*, 80(1), 61-79. <https://doi.org/10.1086/648463>
- Costa, M., Gomes, D., Silva, M. J. (2017). The evolution of web archiving, *Int J Digit Libr*, 18, 191-205. <https://doi.org/10.1007/s00799-016-0171-9>
- Evens, T., Hautekeete, L. (2011). Challenges of digital preservation for cultural heritage institutions. *Journal of Librarianship and Information Science*, 43(3), 157-165. <https://doi.org/10.1177/0961000611410585>
- Gleason, N. W. (2018). *Higher education in the era of the fourth industrial revolution*. Springer Nature.
- IFLA (2014). *Guidelines for Planning the Digitization of Rare Book and Manuscript Collection*. Den Haag: International Federation of Library Associations and Institutions. <https://www.ifla.org/files/assets/rare-books-and-manuscripts/rbms-guidelines/guidelines-for-planning-digitization.pdf>
- Lippincott, J. K. (2010). A mobile future for academic libraries. *Reference Services Review*, 38(2), 205-213. <https://doi.org/10.1108/00907321011044981>
- Lippincott, K. J. (2015). Libraries and the Digital University. *College & Research Libraries*, 75th Anniversary Issue, 283-295. <https://doi.org/10.5860/crl.76.3.283>



- Lynch, C. (2007). Digital Collections, Digital Libraries & the Digitization of Cultural Heritage Information. *Microform & Imaging Review*, 31(4), 131-145. <https://doi.org/10.1515/MFIR.2002.131>
- Murray, L. (2010). Libraries “like to move it, move it”. *Reference Services Review*, 38(2), 233-249. <https://doi.org/10.1108/00907321011045007>
- Nielsen, J. H., Hjørland, B. (2014). Curating research data: the potential roles of libraries and information professionals. *Journal of Documentation*, 70(2), 221-240. <https://doi.org/10.1108/JD-03-2013-0034>
- Oakleaf, M. J. (2010). *The value of academic libraries: A comprehensive research review and report*. Assoc of Cllge & Rsrch Libr
- Rane, M. Y. (2015). Digital libraries: A Practical approach. *International Journal of Multidisciplinary Approach & Studies*, 2(1), 142-150
- Rossing, J. P., Miller, W., Cecil, A. K., & Stamper, S. E. (2012). *iLearning: The future of higher education? Student perceptions on learning with mobile tablets*. [https://scholarworks.iupui.edu/bitstream/handle/1805/7071/Rossing\\_2012\\_ilearning.pdf?sequence=1&isAllowed=y](https://scholarworks.iupui.edu/bitstream/handle/1805/7071/Rossing_2012_ilearning.pdf?sequence=1&isAllowed=y)
- Smith, A. (2001). *Strategies for Building Digitized Collection*. Washington, D.C. Digital Library Federation, Council on Library and Information Resources. <http://proj1.sinica.edu.tw/~ndaplib/service/ebook/pub101.pdf>.
- Tendjer, A. (2014). Standardizacija u Srbiji, bibliotekarstvo i digitalizacija. (Standardization in Serbia, librarianship and digitization). *Glas biblioteke*, 20, 45-59.
- Vukotić, B. (2012). Hrvati i Slovenci o digitalizaciji u bibliotekama. (Croats and Slovenes on digitization in libraries). *Glas biblioteke*, 19, 205-212.
- The Commission of the European communities (2006). *Commission recommendation on the digitisation and online accessibility of cultural material and digital preservation*. <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:236:0028:0030:EN:PDF>.

## DIGITALNE UNIVERZITETSKE BIBLIOTEKE – STAVOVI STUDENATA

**Abstract.** *Univerzitske biblioteke „Svetozar Marković“ u Beogradu i „Nikola Tesla“ u Nišu su bile među prvima aktivno uključene u proces digitalizacije biblioteka u Srbiji. U njima se radi na novim projektima koji su podržani od strane Evropske unije u cilju modernizacije i razvoja novih načina za prenos naučnih i stručnih informacija. Shodno tome, one su dragocen izvor informacija za pisanje stručnih i naučnih radova, kao i obaveza predviđenih nastavnim programima, posebno na višim nivoima studiranja. Osnovni cilj ovog rada je da se ispituju stavovi doktoranada Univerziteta u Beogradu i Univerziteta u Nišu o korisnosti digitalnih resursa univerzitetskih biblioteka „Svetozar Marković“ i „Nikola Tesla“. Shodno tome, istraživački zadaci obuhvataju pitanja koja se odnose na informisanje studenata o potencijalima digitalnih biblioteka i korišćenje elektronskih izvora koje one nude. Za potrebe istraživanja, instrument koji je korišćen bio je upitnik, koji je namenski kreiran i elektronski dostavljen ispitanicima. Podaci*

*istraživanja obrađeni su kvalitativnim i kvantitativnim metodama i predstavljeni grafički. Rezultati istraživanja pokazuju da su studenti delimično informisani o potencijalima digitalne univerzitetske biblioteke, da su moguća poboljšanja u informisanosti o audio i video datotekama; takođe da studenti prepoznaju prednosti korišćenja elektronskih resursa i korisnost u procesu studiranja.*

**Key words:** *Digitalne univerzitieske biblioteke, studenti, elektronski izvori, korisnost, doktorske studije*