

## **How School Librarians in Croatia Use Smartphones for Their Professional Needs During the COVID-19 Pandemic**

**Daria Pestić**

Primary School Librarian,  
Primary School Frana Galovića  
[daria\\_pestic@yahoo.com](mailto:daria_pestic@yahoo.com); [daria.pestic@gmail.com](mailto:daria.pestic@gmail.com)

**Zvezdana Dukić**

Independent Researcher,  
University of Zagreb  
[dana.dukic@gmail.com](mailto:dana.dukic@gmail.com)

---

### ***Introduction***

These days, technology is becoming a big part of our lives, and smartphones are part of that change. In Croatia, smartphones were inducted into educational processes in schools to encourage students' engagement with teaching processes. After the appearance of COVID-19 and school closures, smartphones became a prominent tool for teaching and learning in virtual space. In these new circumstances, smartphones and their many functionalities are helpful tools for educators, including school librarians, to keep performing their professional and instructional duties.

### ***Statement of the Research Problem***

The goal of this study is to examine how school librarians in Croatia use smartphones to perform their professional duties. Smartphones may be helpful to school librarians for communication and collaboration with colleagues, for library instruction and working with students, and for participating in programs for professional development.

Amid the ongoing Covid-19 and induction of online and/or hybrid instruction, smartphones may play an even more important role in school librarians' professional work.

The study will try to answer the following research questions:

1. How do school librarians use smartphones to communicate and collaborate with colleagues, work with students, their professional development, and perform other professional duties?
2. Does the outbreak of Covid-19 and the launch of online (or hybrid) teaching in schools affect school librarians' smartphone usage, and how?

### ***Literature review***

Smartphone use for learning purposes is extensively researched, and most studies exploring mobile learning in elementary schools, high schools, or in higher education focus on the students' perspectives on mobile learning (Aharony, 2013; Dahlstrom et al., 2013; Gikas & Grant, 2013; Kim et al. 2014; Dukic, Chiu & Lo, 2015; Lau et al. 2017; Liu et al. 2018; Lau et al., 2020). Some other studies about smartphone use focus on delivering mobile library services to library users and examine mobile learning from the perspective of library users (Dresselhaus & Shrode, 2012; Bomhold, 2013; Pazur, 2014; Kumbhar & Pawar, 2014; Wang et al. 2018; Chen, 2019; Rivo & Žumer, 2022).

Studies exploring smartphone use for professional purposes are commonly found in healthcare and often indicate that healthcare professionals extensively use smartphones and medical apps in their clinical practice (Franko & Tirrell, 2012; Johnson et al., 2015; Perry et al., 2017; Zang et al., 2020). When it comes to the professional smartphone use by school librarians, there is a study by Dukic & Tam (2016) that explores how school librarians from Australia, Hong Kong, and the United Kingdom use smartphones for their professional work and learning. The findings of this study indicated that school librarians from all three regions extensively use smartphones for professional work and learning. Most often they use smartphones for professional communication with colleagues, for information searching with search engines, for browsing, reading, and viewing professional resources from the Internet, and for participation in professional social networking sites. Further, school librarians frequently use smartphone apps for scheduling, note-taking, and recording teaching and learning materials.

### ***Methodology***

A quantitative methodology is applied in this study. The research method is a survey, and data were collected with an online questionnaire developed in Google Forms.

The questionnaire contains 16 closed-ended questions and one open-ended question.

The sample involves school librarians in primary and secondary schools in Croatia. The questionnaire was delivered to school librarians by posting the link to their professional Facebook page. In total, 46 valid responses have been received. Collected data are analyzed by applying descriptive statistics.

### ***Findings and Discussion***

According to the preliminary study findings, the research sample involves mostly female librarians (97%) from primary school libraries (83%). Further, the findings show that school librarians in Croatia widely use smartphones for their professional needs, arranged in three major categories: collaboration with colleagues, working with students, and professional development.

For collaboration with colleagues, research results show that school librarians extensively use messaging tools and are actively engaged in professional social networks. Further, the majority of respondents share teaching resources through platforms like Microsoft Teams, Loomen and use various tools for videoconferencing (Zoom, Microsoft Teams, Skype, etc.) For library instruction and working with students, school librarians most often use applications for creating quizzes (Genially, Book Creator, etc.), various tools for instructions and educational activities for students (Edmodo, Microsoft Teams, Kahoot, etc.), applications for messaging, email for sending homework and tools for testing knowledge (Kahoot, etc.). For professional development school librarians most often use applications for webinars, and virtual conferences (Loomen, Zoom, etc.), for exploring educational resources on the virtual learning platform (Loomen), for reading professional journals, and for watching professional videos.

Comparing the study findings with findings from the study by Dukić & Tam (2016) it can be concluded that there are some similarities in smartphone use for professional purposes. In both studies, school librarians widely use smartphones for active participation in professional networks, for searching information with search engines, and for taking pictures for professional purposes.

The appearance of COVID-19 and the induction of online instruction, visibly affected school librarians' usage of smartphones. They started to use more often applications specialized for online teaching and video conferencing for teaching and working with students and for professional development. For communication and collaboration with colleagues, school librarians more often use apps for messaging and platforms for collaboration, sharing, and videoconferencing.

### ***Conclusions and Recommendations***

Based on the study findings it can be concluded that school librarians in Croatia widely use smartphones to fulfill their professional roles and responsibilities. Apart from using smartphones for traditional purposes (talking, messaging, recording, scheduling, etc.) many of them use smartphones to access various virtual tools and platforms for collaboration, sharing professional resources, virtual meetings, and library instruction and working with students. The study findings clearly show that along with the Covid-19 pandemics and temporary school closures librarians in Croatia commonly engage in performing various professional activities in virtual space.

The study findings may encourage researchers to further explore smartphone use among librarians for professional work and learning on a wider sample and in different regions. For school librarians, it is recommended to further explore the potentials of smartphone technologies for the benefits of library instructions and work with students.

## References

- Aharony, N. (2013). Mobile Libraries: Librarians' and Students' Perspectives. *College & Research Libraries*, 75(2), 202-217.
- Bomhold, C.R. (2013). Educational use of smart phone technology: A survey of mobile phone application use by undergraduate university students. *Program: electronic library and information systems*, 47(4), 424 – 436.
- Chen, S.-c. (2019). Undergraduate students use of mobile apps to search library catalogs. *Library Hi Tech*, Vol. 37 No. 4, pp. 721-734.
- Dresselhaus, A. & Shrode, F. (2012). Mobile Technologies & Academics: Do Students Use Mobile Technologies in Their Academic Lives and are Librarians Ready to Meet this Challenge? *Information Technology and Libraries* (Online), 31(2), 82-101.
- Dukic, Z. & Tam, A. (2016). Professional work and learning with smartphones: a comparative study of school librarians from Australia, Hong Kong, and United Kingdom. In IASL Conference Proceedings (Tokyo, Japan): *A School Library Built for the Digital Age*  
<https://journals.library.ualberta.ca/slw/index.php/iasl/article/view/7193/4192>
- Franko O.I. & Tirrell T.F. (2012). Smartphone app use among medical providers in ACGME training programs. *Journal of Medical Systems*, 36(5), 3135-3139.
- Gikas, J. & Grant, M. (2013). Mobile computing devices in higher education: Student perspectives on learning with cellphones, smartphones & social media. *Internet & Higher Education*, 19, 18-26.
- Johnson, A. C., El Hajj, S. C., Perret, J. N., Caffery, T. S., Jones, G. N. & Musso, M. W. (2015). Smartphones in Medicine: Emerging Practices in an Academic Medical Center. *Journal of medical systems*, 39(1), 1-6.
- Kim, H., Lee, M. & Kim, M. (2014). Effects of mobile instant messaging on collaborative learning processes and outcomes: The case of South Korea. *Journal of Educational Technology & Society*, 17(2), 31–42.
- Kumbhar, S. & Pawar, R. (2014). Mobile based services: application and challenges. Paper submitted to the *Conference on Changing Trends in Academic Libraries and Librarianship in Digital Environment*, 25-26 November 2014, Shivaji University Kolhapur, India. [Online]. Available: doi:10.1314/2.1.2373.2000.

- Lau, K.P., Chiu, D.K.W., Ho, K.K.W., Lo, P. & See-To, E.W.K. (2017). Educational usage of mobile devices: Differences between postgraduate and undergraduate students. *The Journal of Academic Librarianship*, 43(3), 201–208
- Lau, K. S., Lo, P., Chiu, D. K., Ho, K. K., Jiang, T., Zhou, Q., Percy, P. & Allard, B. (2020). Library and learning experiences turned mobile: A comparative study between LIS and non-LIS students. *The Journal of Academic Librarianship*, 46(2):102103
- Liu, L., Zhang, L., Ye, P. & Liu, Q. (2018). Influence Factors of Satisfaction with Mobile Learning APP: An Empirical Analysis of China. *International journal of Emerging Technologies in learning (iJET)*, 13(3), 87-99.
- Pažur, I. (2014). Attitude of the Rudjer Bošković Institute's scientists to the small screen mobile devices library services, *Library Hi Tech*, 32(4 ), 628 – 644.
- Perry R., Burns R.M., Simon R. & Youm J. (2017). Mobile application use among obstetrics and gynecology residents. *Journal of Graduate Medical Education* 9(5), 611-615.
- Rivo, K., & Žumer, M. (2022). Academic Libraries and Use of Mobile Devices: Case Study of Slovenia. *The Journal of Academic Librarianship*, 48(3), 102507.
- Zhang, C., Fan, L., Chai, Z., Yu, C. & Song, J. (2020). Smartphone and medical application use among dentists in China. *BMC Medical Informatics Decision Making* 20(213).
- Wang, X., Li, J., Yang, M., Chen, Y. & Xu, X. (2018). An empirical study on the factors influencing mobile library usage in IoT era. *Library Hi Tech*, 36(4), 605-621.

## ***Biographies***

---

**Daria Pestić** holds a master degree in Library and Information Science and Pedagogy from the Faculty of Philosophy at the University of Zagreb, Croatia. She works as a school librarian at Elementary school FranaGalovića. Her research interests focus on application of new technologies in school library services, children literature and users' education.

**Zvezdana Dukić (Ph.D LIS, University of Zagreb, Croatia)** has working experience in academic, special and school libraries and also taught LIS courses at The University of Hong Kong. She presents at conferences and publishes papers in academic journals.