The European Proceedings of
Social & Behavioural Sciences
EpSBS

Future Academy

ISSN: 2357-1330

http://dx.doi.org/10.15405/epsbs.2017.10.5

8th ICEEPSY 2017
The International Conference on Education and Educational Psychology

THE LATEST INFORMATION AND COMMUNICATION TECHNOLOGIES IN LIS EDUCATION

Magdalena Wójcik (a)*
*Corresponding author

(a) Institute of Information and Library Science, Jagiellonian University, ul. Łojasiewicza 4, Kraków, magda.wojcik@uj.edu.pl

Abstract

This paper concerns the latest information and communication technologies (ICT) as educational tools. The aim is to determine the potential of these tools in the teaching of library and information science (LIS). The technologies considered include virtual and augmented reality, the Internet of Things, mobile technologies, geolocation, and 3D printing. Analysis and criticism of the literature was applied in the first stage of the research. Based on a search of key databases using Google Scholar, the state of research in this field was determined. This was followed by a systematic search of network resources using selected criteria to find examples of good practices and draw conclusions regarding in the use of ICT in LIS education. Predictions were also made about the further development of this issue.

Keywords: Information and communication technologies, library and information science, education

http://dx.doi.org/10.15405/epsbs.2017.10.5
Corresponding Author: Magdalena Wójcik
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

1. Introduction

Higher education is constantly undergoing transformation; the legal, economic, and demographic situations continue to evolve, which makes it necessary to adapt educational methods to the realities of the modern world (Hazelkorn, 2015; Pucciarelli & Kaplan, 2016). These changes do not bypass library and information science (LIS). Future specialists in the field of information management must be equipped with a broad set of competences if they are to cope in the current labour market. Besides standard professional knowledge about information management, future librarians must have a range of personal and social skills, a deep understanding of ICT, the ability to promote and raise funds, and many other competences useful in modern society (Chow et al., 2011; Ameen, 2017). As a response, to assist in the process of education, more and more teachers are trying new methods and tools, which are increasingly the answer to this issue. The use of computers with access to the Internet, mobile technologies, and social media is standard procedure in many cases (Sarrafzadeh, Hazeri, & Alavi, 2010; Sawant, 2012). However, the question of whether the latest information and communication technologies are used—and if so, to what extent and in what way— in the field of LIS education remains unanswered.

2. Problem Statement

The subject of the paper is the latest information and communication technologies (ICT) that are considered as educational tools. ICT is widely used in education at various levels and in various disciplines; however, it is not known whether or not they are also used in LIS education.

3. Research Questions

The research question is “what are the scope and ways of using the latest information and communication technologies in teaching library and information science skills?”

4. Purpose of the Study

The aim of the study is to determine the potential in the teaching of LIS competencies of tools such as virtual and augmented reality (VR and AR), the Internet of Things (IoT), mobile technologies, and 3D printing. The specific objectives include:

- determine the state of research concerning the usage of the latest ICT in LIS education,
- identify, if possible, examples of good practices related to the use of ICT in LIS education,
- create a simple theoretical model of the use of various types of ICT to support the teaching of competences (knowledge, practical and social skills) in LIS education.

5. Research Methods

Analysis and criticism of the literature was applied in the first stage of the research. Based on a search of key databases using Google Scholar for the 2010–2016 period, the state of research in the field of using ICT in LIS education was determined. This was followed by a systematic search of network resources according to chosen criteria to find examples of good practices in the use of ICT in LIS

http://dx.doi.org/10.15405/epsbs.2017.10.5
Corresponding Author: Magdalena Wójcik
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

education. Finally, modelling was applied to draw general conclusions about the potential use of the latest ICT in LIS education..

6. Findings

Analysis of the state of research has shown that the use of new technologies in LIS education in the years 2010–2016 is relatively frequently present in the subject literature (Abubakar, 2010; Chow et al., 2011; Hu, 2013). However, most papers primarily address the use of technologies such as e-learning platforms, Web 2.0, and mobile applications (Sarrafzadeh, Hazeri, & Alavi, 2010; Sawant, 2012; Agosto, Copeland & Zach, 2013; Pujar & Bansode, 2014). Less frequently addressed are technologies such as virtual and augmented reality, 3D printing, the Internet of Things, and holograms (Wójcik, 2016a; Wójcik, 2016b). In existing publications, attention is paid to the changing expectations of the labour market that make it necessary for LIS students to acquire new skills. However, there are not many detailed analyses of how new technologies can contribute to the development of specific types of required competencies. The authors generally display a positive attitude towards the use of new technologies in LIS education, whilst also paying attention to difficulties associated with their use.

While it was still possible to find literature on the application of the latest technologies in education, despite an extensive search it was not possible to find examples of good practices in using the latest forms of ICT, such as virtual and augmented reality, the Internet of Things, or 3D printing. Perhaps such solutions are being implemented, but they are not sufficiently described as to be easily accessible. This leads to the conclusion that the exchange of practical information on applied methods and teaching tools between international LIS schools is difficult. Perhaps it would be beneficial in this context to place more emphasis on creating a databases of good practices that could serve to enhance the quality of higher education in the field of LIS studies.

7. Conclusion

Despite the fact that the latest technologies are not yet widely used in LIS education, they have great potential. To prove this thesis, a theoretical model of the application of these technologies in the teaching of LIS competences was developed, based on similar uses of these technologies in other areas of education. The model is deliberately simplified and its purpose is not to close the topic, but to prepare a framework for discussion (Figure 1).

http://dx.doi.org/10.15405/epsbs.2017.10.5
Corresponding Author: Magdalena Wójcik
Selection and peer-review under responsibility of the Organizing Committee of the conference
eISSN: 2357-1330

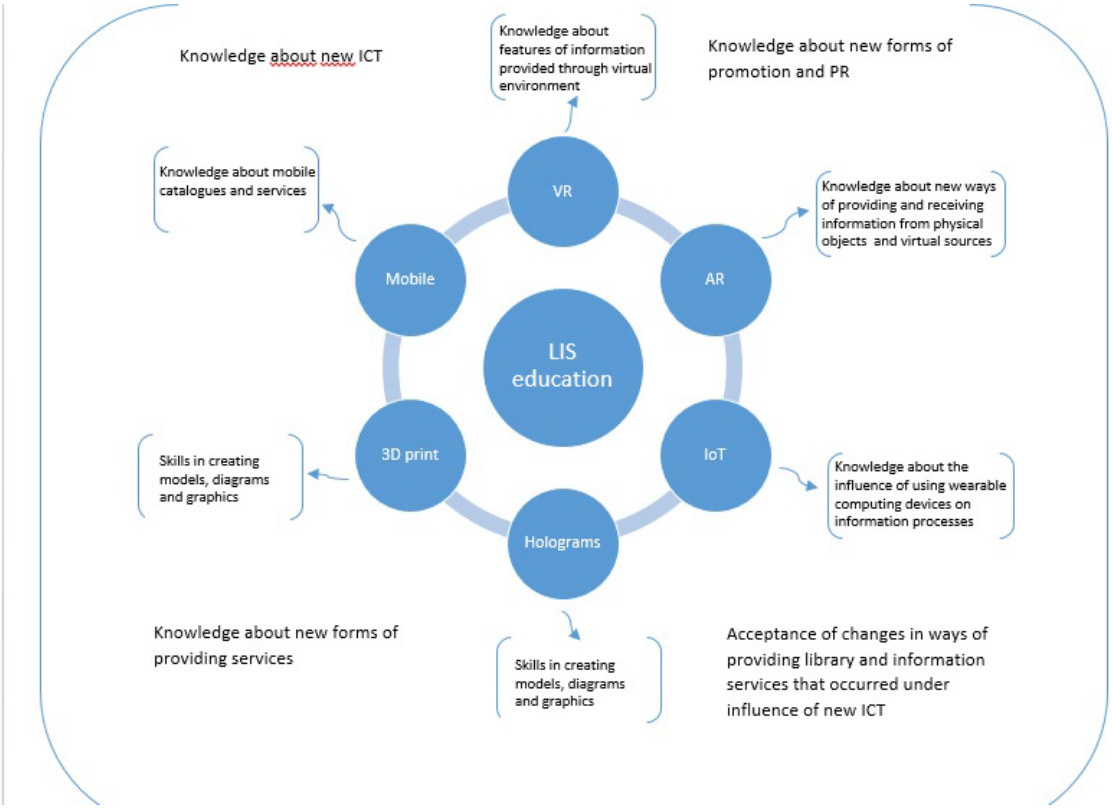

Figure 01. Model of competencies (knowledge, practical and social skills) that potentially may be supported by using new ICT

Source: own research, 2017.

The presented model shows that new technologies could be used in teaching diverse competences in the LIS field. Generally, the use of new ICT could improve the knowledge of future librarians on this subject and allow them to develop new methods of delivering information services, as well as new library promotion and PR methods. Students could be taught new technical solutions, which would increase their acceptance of novelty in the field of information services. At a more detailed level, the use of specific tools could help to develop the specific competences needed for the librarian profession. Virtual reality could help students learn about the features of information provided through virtual environments. Augmented reality could support new ways of providing and receiving information from physical objects and virtual sources. The IoT could help in understanding the impact of wearable computing on information processes. 3D printing and holograms may be helpful in developing skills in creating models, diagrams and graphics. Mobile technologies may help to understand the role of the online directories and services available through mobile applications.

It seems that ICT could have a very beneficial influence on LIS education; however, the practical aspects of the implementation of ICT in LIS education should be carefully considered as there are obstacles to the full use of their potential. First of all, the purchase of hardware and software often requires substantial financial resources, which not all universities can afford. Secondly, it is also expensive to maintain and update equipment. There are also problems associated with a lack of IT competence among faculty members and costly staff training must be undertaken before this knowledge

could be passed on to students. Finally, there are organizational aspects involved with the use of certain technologies; e.g. 3D printing requires time (one small object can take approx. 2 hours), which makes practical use of this equipment in the classroom difficult. The use of certain technologies could also cause physical side effects: e.g. virtual reality can interfere with the work of the vestibular system and 3D printers generate a peculiar smell that can cause nausea and headaches in susceptible people.

All in all, the use of new technologies brings many opportunities, but also requires a sensible approach and moderation; the value of new technologies lies not in themselves, in their ability to support the education processes.

Acknowledgments

Author would like to thank Mike Timberlake for proof-reading.

References

Abubakar, B. M. (2010). Availability and use of Information and Communication Technology (ICT) in six Nigerian University library schools. *Library Philosophy and Practice (e-journal).* http://digitalcommons.unl.edu/libphilprac/378

Agosto, D. E., Copeland, A. J. & Zach, L. (2013). Testing the benefits of blended education: Using social technology to foster collaboration and knowledge sharing in face-to-face LIS courses. *Journal of education for library and information science***,** 54.2, 94-107.

Ameen, K. (2017). The need and impact of learning "Personality Development & Communication Skills" in LIS education: a case study. *Malaysian Journal of Library and Information Science*, 18.1, 15-25.

Chow, A. S., et al. (2011). Changing times and requirements: Implications for LIS education. *LIBRES Library and Information Science Research Electronic Journal*, 21.1 http://www.libres-ejournal.info/1038/

Hazelkorn, E. (2015). *Rankings and the reshaping of higher education: The battle for world-class excellence.* London: Palgrave Macmillan UK.

Hu, S. (2013). Technology impacts on curriculum of library and information science (LIS)-a United States (US) perspective*. LIBRES: Library & Information Science Research Electronic Journal*, 23.2, 1-9.

Pucciarelli, F. & Kaplan, A. (2016). Competition and strategy in higher education: Managing complexity and uncertainty. *Business Horizons,* 59.3, 311-320.

Pujar, S. M. & Bansode, S. Y. (2014). MOOCs and LIS education: A massive opportunity or challenge. *Annals of Library and Information Studies (ALIS)*, 61.1, 74-78.

Sarrafzadeh, M., Hazeri, A. & Alavi, S. (2010). The status of Web 2.0 in Iran's LIS education*. Education for Information,* 28.2-4, 233-245.

Sawant, S. (2012). The study of the use of Web 2.0 tools in LIS education in India. *Library Hi Tech News*, 29.2, 11-15.

Wójcik, M. (2016). Potential use of Augmented Reality in LIS education. *Education and Information Technologies,* 21.6, 1555-1569.

Wójcik, M. (2016). Internet of Things–potential for libraries*. Library Hi Tech*, 34.2, 404-420.