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**UNIVERSITY LIBRARY
AT A NEW STAGE OF SOCIAL
COMMUNICATIONS
DEVELOPMENT**

CONFERENCE PROCEEDINGS

No. 8 (2023)

**Dnipro
2023**

Ukrainian State University of Science and Technologies

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KOLESNYKOVA T. O.

Editor-in-Chief,

PhD Social Sciences (Communication),

Senior researcher,

Director of the Scientific Library,

Ukrainian State University of Science and Technologies (Dnipro, Ukraine),

e-mail: t.o.kolesnykova@ust.edu.ua, ORCID 0000-0002-4603-4375

Library and Knowledge Management in Times of Crisis: Search for Effective Models of Activity

In this issue, our contributors share their thoughts, ideas, and doubts, describing how they and their library teams have worked hard during the recent crisis years to develop, improve, or find effective models of operation to prepare for high-level negative events and minimise catastrophic consequences. Knowledge management is definitely about university libraries, which have shifted their role from accessing and managing information to accessing, sharing and managing knowledge. The papers describe the library experience of knowledge management in times of crisis as a combination of information, communication and human resource management. The crisis experience is considered in the context of the conference "University Library at a new stage of social communications development" 2023 as the experience gained in the working library environment of universities around the world, created in the rapidly changing, chaotic and often dangerous for people's health and life conditions of large-scale crisis events. By illustrating the challenges, surprises, and rewards we face in library and information science in different countries, we hope that the articles in this issue will provide us all with the motivation to keep going in a difficult period. At the very least, these articles will help readers to appreciate how our understanding of higher education librarianship continues to evolve in times of crisis.

Keywords: university libraries; knowledge management; time of crisis; crisis experience of libraries; UniLibNSD conference; Ukraine

Dear readers, authors, and colleagues,

In this (VIII) issue of UniLibNSD, we offer you a wide range of views of International Library and Information Science (LIS) experts on the topic "Library and Knowledge Management in Times of Crisis". This topic was the focus of the VIII-th International Conference "University Library at a New Stage of Social Communications Development", which took place on 5-6 October 2023 in Dnipro, Ukraine (http://conflib.diit.edu.ua/Conf_univ_Library_2023).

The Conference "University Library at a New Stage of Social Communications Development – 2023" is organized by the Scientific Library of the Ukrainian State University of Science and Technologies. The co-organizers are Nazarbayev University Library (Republic of Kazakhstan) and the Library of the University of Perpetual Help System LAGUNA (Philippines).

It was a fantastic experience to bring together thought leaders from 17 different countries in the field of LIS in a hybrid (blended) forum!

Full-length papers were selected, reviewed, and recommended for publication by members of the international editorial board.

According to the Encyclopedia of Library and Information Science (Dalkir, 2017), "Knowledge management (KM) is defined as a deliberate and systematic coordination of an organization's people, technology, processes, and organizational structure in order to add value through reuse and innovation".

Knowledge management during the large-scale crisis events of our time – natural and man-made disasters, the COVID-19 pandemic, and armed conflicts, especially the Russian-Ukrainian

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war – has demonstrated its value in helping societies and economies of different countries adapt to unexpected and tragic circumstances.

Thus, I would consider the crisis experience in the context of the UniLibNSD 2023 Conference as the experience gained in the working library environment of universities around the world, created in the rapidly changing, chaotic and often dangerous for people's health and life conditions of large-scale crisis events.

Knowledge management is definitely about university libraries, which have shifted their role from accessing and managing information to accessing, sharing and managing knowledge! This is how we "arm" our communities with the knowledge of the day, disseminate it among students, teachers, scientists, communities of cities and regions, integrate it into the international research and education space, and use it in the development of our own products and services.

By generating value from their intellectual assets based on knowledge, libraries share them among employees of their departments, universities, other organizations and associations to develop best practices, including those based on information technology.

The authors of this issue of the journal, initially presenting their thoughts as speakers at the international conference UniLibNSD 2023, describe the library experience of knowledge management in times of crisis as a combination of information, communication and human resource management.

Our authors share their thoughts, ideas, and doubts in the publication, describing how they and their library teams have worked hard during the recent crisis years to develop, improve, or find effective models of operation to be prepared for high-level negative events and minimize catastrophic consequences.

This applies to the functions of academic librarians as knowledge managers (Providing services to the user community; sharing Information and understanding of user needs; Analyzing documents, classifying and sorting them for easy retrieval; Building the indexes, etc.).

The authors also focused on the skills of librarians that contribute to knowledge management (Needs assessment; Quality filtering of information; Networking and community outreach; Teaching and training; Database development and maintenance; Writing for publication, etc.).

Emphasizing the need for university librarians to use technology and systems to manage all forms of information, the authors share their experience with automated systems, artificial intelligence, and human behavior and technology.

At the same time, the authors, librarians, understand that the most vulnerable group of users are representatives of Generation Z – young people born between 1997 and 2012 – who are growing up in an era of increased stress and anxiety, which is reflected in their active or passive behavior in various spheres of life. (Haydabrus, Linskiy, & Giménez-Llort, 2023; Yap, Nemeth, & Hajdu Barat, 2022).

A separate topic for the global library and information community is attempting to develop a library model of resilience in the event of war. (Antczak & Gruszka, 2023; Kolesnykova, 2023).

The authors of our issue have also addressed the topic of library resilience, sharing best practices on how to overcome adversity in the face of unprecedented challenges or crisis situations. Considering resilience as the ability to maintain or sustain work processes over time, the authors addressed the following topics:

- crisis library and information management as a basis for promoting organizational resilience;
- leading inclusive services for students, lecturers, and researchers;
- creating representative collections;
- barriers and catalysts for knowledge sharing;
- hospitality management in libraries during the war;

- information hygiene;
- leadership and perception of knowledge as a strategic resource;
- library and information education: formal, non-formal and informal;
- how to be inspired when witnessing the challenges of disruptive change?

By illustrating the challenges, surprises, and rewards we face in library and information science, we hope that the articles in this issue will provide us all with the motivation to keep going in a difficult period. At the very least, these articles will help readers to appreciate how our understanding of higher education librarianship continues to evolve in times of crisis.

And, as always, the publication provides direct open access to its content, based on the following principle: free open access to research results enhances global knowledge sharing.

The international editorial board appreciates the contribution of each author. We sincerely thank our readers for their interest in UniLibNSD, our reviewers for their competence, delicacy and goodwill.

We sincerely wish our partners and readers creative and professional success and confidence that the crisis will pass! As we like to say, after the darkest night, there will be definitely a morning!

We invite you to cooperate.

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KOLESNYKOVA T. O.

Головна редакторка,

канд. наук із соціальних комунікацій, с.н.с.,

директорка наукової бібліотеки,

Український державний університет науки і технологій (Дніпро, Україна),

e-mail: t.o.kolesnykova@ust.edu.ua, ORCID 0000-0002-4603-4375

Бібліотека та управління знаннями в кризовий час: пошук ефективних моделей діяльності

На сторінках даного номера наші автори діляться думками, ідеями, сумнівами, розповідаючи, як протягом останніх кризових років вони та їх бібліотечні команди наполегливо працювали над розробкою, удосконаленням чи пошуком ефективних моделей діяльності, щоб бути готовими до негативних подій високого рівня та мінімізувати катастрофічні наслідки. Управління знаннями – це точно про бібліотеки університетів, які змістили свою роль від доступу до інформації та управління нею до доступу, обміну та управління знаннями. В статтях описується бібліотечний досвід управління знаннями в кризовий час як поєднання управління інформацією, комунікаціями та людськими ресурсами. Кризовий досвід в контексті конференції UniLibNSD 2023 розглядається як досвід, здобутий у робочому бібліотечному середовищі університетів світу, створений у швидко мінливих, хаотичних і часто небезпечних для здоров'я та життя людей умовах масштабних кризових подій. Ілюструючи виклики, несподіванки та винагороди, з якими ми стикаємося в бібліотечно-інформаційній справі в різних країнах, ми сподіваємося, що статті цього номера нададуть усім нам мотивацію не зупинятися на досягнутому у важкий період. Принаймні ці статті допоможуть читачам оцінити, як продовжує розвиватися наше розуміння бібліотечної справи в закладах вищої освіти у кризовий час.

Ключові слова: університетські бібліотеки; управління знаннями; кризові часи; кризовий досвід бібліотек; конференція UniLibNSD; Україна

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SHEMAIEVA H. V.

Department of Documentation and Ukrainian Language, National Aerospace University

M. E. Zhukovsky «KhAI» (Kharkiv, Ukraine), e-mail: annashemaeva@ukr.net,

ORCID 0000-0002-1053-989X

KOSTYRKO T. M.

Scientific Library, Admiral Makarov National University of Shipbuilding (Mykolaiv, Ukraine),

e-mail: tamara.kostyrko@nuos.edu.ua, ORCID 0000-0002-4175-9975

GRABAR N. H.

State Biotechnology University (Kharkiv, Ukraine), e-mail: grabar-ng@ukr.net,

ORCID 0000-0002-5120-0382

International Cooperation in the Sphere of LIS: Analysing the Materials of the BOBCATSSS Conference

Objective. The article highlights the results of analysing the materials of the International Scientific Conference BOBCATSSS (2012–2023) within the framework of which current topics of library and information science, education, and practice are discussed. **Methods.** The study of international professional cooperation is based on the use of a complex of scientific methods, in particular: analysis and synthesis, static analysis, bibliometric analysis, and scientometric diagnostics. **Results.** The expansion of the geographical boundaries in international cooperation has been determined. The thematic aspects that were discussed during 2012–2023 are revealed. Attention is focused on international co-authorship as a priority direction of professional interaction. The peculiarities of project professional interaction in terms of quantitative, substantive, and organizational aspects have been revealed. It was established that the majority of international projects announced at the Conference are implemented on the basis of cooperation between universities of European countries. **Conclusions.** International cooperation of European countries develops, first of all, at the organizational level and is characterized by the joint participation of several universities from different countries for the preparation of the Conference. Secondly, we can observe the development of international research, which is manifested at the level of international co-authorship and international projects. Analysing the materials of the BOBCATSSS Conference attests to the innovative activity of European universities that train personnel for the information and library sphere and raises the issue of intensifying international cooperation of Ukrainian professionals and scientists.

Keywords: library and information sciences (LIS); international cooperation; scientific communications; co-authorship; international project activity; bibliometric analysis; BOBCATSSS Conference

Introduction

In the modern conditions of crisis phenomena, there is a significant rethinking of traditional approaches to scientific and educational activities in general and in the library and information sphere in particular. The development of the library and information sphere requires monitoring and tracking of global trends in this field, determining the directions and opportunities for more active involvement in international cooperation.

At the European level, the European Association for Library and Information Science BOBCATSSS (<https://bobcatss.info/>), former EUCLID (European Association for Library and Information Education and Research), is of great importance. Its mission is: to promote the exchange of students and staff among members of the association, mutual recognition of educational programs or their parts, development of cooperation in the implementation of research programs and projects, mutual exchange of information about scientific research, and development of educational programs, support of weaker universities by more powerful ones, publication of a newsletter, cooperation with the programs of the European Union.

Under the auspices of the BOBCATSSS Association, students, teachers, researchers, and information specialists from the University of a certain country have been organizing the BOBCATSSS Conference annually since 1993. Its purpose is to strengthen international cooperation in various areas of information and library science and education. Therefore, researching the materials of this Conference becomes especially relevant.

To study the processes of professional scientific communication and international cooperation, scientists usually choose individual titles of journals. Indian researcher Das P. K. (2015) highlights research collaborations during 2007–2013 based on publications in the “Journal of Informetrics”. Another researcher, Thavamani Kotti (2015), chose for analysis the international electronic journal Collaborative Librarianship, which covers a wide range of issues related to library collaboration at different levels of cooperation: local, regional, national, and international. According to the research results, the scientist established an increase in international interaction (Thavamani, 2015). Prieto-Gutierrez J. J. and Segado-Boj F. (2019) presented the bibliometric analysis of publications in the leading Indian journal “Annals of Library and Information Studies” for the period 2011–2017. They compared the identified research trends in LIS with other professional publications in India, Asia, and the world.

A significant number of researchers study the level of cooperation in the library and information sphere on the basis of specialized publications indexed in the Web of Science and Scopus scientometric databases. Researchers distinguish types and directions of authorship, author productivity, degree and index of cooperation, geography of cooperation and partnership, and features of joint preparation of publications. A history of co-citation analysis for the intellectual structure of informatics in the period 2011–2020 and changes in this structure is provided by Zhao D. with Strotmann A. (2022). Many researchers analyze the thematic content of scientific publications, study networks, and channels of scientific communication between universities. Among them, it is worth noting the scientists who applied cluster analysis and determined the role of the countries of the world in LIS research during 1963–2012 (Hosseini & Erfanmanesh, 2015).

Much less attention is paid to the research of conference materials. The formats of conferences and the analysis of conference materials in the field of LIS in conditions of limited physical communication are the subject of Ukrainian scientists’ attention (Kolesnykova, 2020). Researchers who are active participants in this forum are addressing the disclosure of various aspects of scientific communications within the framework of BOBCATSSS International Conference. Among them, it is worth noting the bibliometric analysis of conference materials for 1998–2001 (Klobcar & Juznic, 2002). Recent research includes Sveum Tor (2013) and Golub A., Cupar D., and Pjanić V. (2021). The first author's attention focuses on the problems of interaction, in particular between teachers and students, during the joint preparation of publications (Sveum, 2013). The second research is devoted to the quantitative and qualitative determination concerning the topics of publications in the materials of the BOBCATSSS Conference for the period 2015–2020 (Golub, Cupar, & Pjanić, 2021). Research materials were presented at the Conference in 2021, where all documents related to digital content, digitalization, and information and communication technologies were reviewed in detail.

The authors of this work (H. Shemaieva and T. Kostyrko) took part in the BOBCATSSS Conference in 2022 and presented the first stage of research on international scientific cooperation on the basis of co-authorship (2012–2021) (Shemaieva & Kostyrko, 2022). The second stage of research into the conference materials is aimed at further identifying priority aspects of international cooperation.

The purpose of the publication is to highlight the results of analysing the scientific materials of the BOBCATSSS Conferences during 2012–2023 in the aspect of international cooperation in the field of LIS.

Results and Discussion

During the research, the strategy to familiarise the texts of the conference materials was used by applying the methods of analysis and synthesis, bibliometrics, and scientometric diagnostics. Only reports of articles were used for analysis. Posters, seminars, PechaKucha, etc. were not subject to analysis. In addition to defining statistical data by countries, authors, and organizations and identifying the number of joint publications, attention is focused on thematic aspects and international project cooperation.

It was found that the BOBCATSSS Conference was held in 16 countries from its beginning in 1993 to 2023. Most often, the Conference was organized by Hungarian universities (1993–1998, 2005, 2011, 2022). In several countries, the Conference was organized twice. These are Poland (2000, 2003), Latvia (2004, 2018), Czech Republic (2007, 2015), Croatia (2008, 2019), Portugal (2009, 2021), France (2017, 2020) (Table 1).

Table 1

Organization of the Conference by Years, Countries, and Topics

Year	Venue Country	Country	Topic
1	2	3	4
1993	Budapest	Hungary	The Role of Libraries Today, Tomorrow and Beyond
1994	Budapest	Hungary	The Future of Librarianship
1995	Budapest	Hungary	Marketing and Development of New Information Products and Services in Europe
1996	Budapest	Hungary	Quality of Information Services
1997	Budapest	Hungary	New Book Economy
1998	Budapest	Hungary	Shaping the Knowledge Society
1999	Bratislava	Slovakia	Learning Society – Learning Organization – Lifelong Learning (LLL)
2000	Krakow	Poland	Intellectual property vs. the right to knowledge
2001	Vilnius	Lithuania	Knowledge, Information and Democracy in the Open Society: the Role of Library and Information Sector
2002	Portorož	Slovenia	Human@Beings and Information Specialists. Future Skills, Qualifications, Positioning
2003	Torun	Poland	Information Policy and the European Union
2004	Riga	Latvia	Library and Information in Multicultural Societies
2005	Budapest	Hungary	Librarianship in the information age
2006	Tallinn	Estonia	Information, Innovation, Responsibility: Information professional in the Network Society
2007	Prague	Czech Republic	Marketing information services
2008	Zadar	Croatia	Providing access to information for everyone
2009	Porto	Portugal	Challenges for the new information professional

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2010	Parma	Italy	Bridging the digital divide
2011	Szombathely	Hungary	Finding new ways
2012	Amsterdam	Netherlands	Information in e-Motion
2013	Ankara	Turkey	From Collections to Connections: Turning Libraries “Inside-Out”
2014	Barcelona	Spain	Library (r)evolution: Promoting sustainable information practices
2015	Brno	Czech Republic	Design, Innovation, Participation
2016	Lyon	France	Information. Libraries. Democracy
2017	Tampere	Finland	Quality of Life through information
2018	Riga	Latvia	The Power of Reading
2019	Osijek	Croatia	Information and Technology transforming lives: Connection, Interaction, Innovation
2020	Paris	France	Information management fake news and disinformation
2021	Porto	Portugal	Digital Transformation
2022	Debrecen	Hungary	Data and Information Science
2023	Oslo	Norway	A New Era - Exploring the Possibilities and Expanding the Boundaries

The number of countries represented at the Conference ranges from 16 to 29 (2012 – 27 countries, 2013 – 28 countries, 2014 – 25 countries, 2015 – 23 countries, 2016 – 25 countries, 2017 – 29 countries, 2018 – 17 countries, 2019 – 22 countries, 2020 – 19 countries, 2021 – 16 countries, 2022 – 16, 2023 – 24 ones). In total, representatives of 43 countries participated in the Conference during the studied period. In recent years (2022-2023), experts from countries that did not participate in the Conference before: Bangladesh, Brazil, Iceland, Kenya, Romania, and Ukraine joined the Conference. This testifies to the expansion of the geographical boundaries of BOBCATSSS participants and the development of international scientific communications.

As a rule, students and teachers from two or three universities from different countries take part in the preparation of the Conference, which indicates the expansion of international professional communications between European universities and the involvement of library specialists in this process in 2022 (Table 2).

Table 2

Organizational Interaction in the Preparation of Conferences

Year	City	Country	University
2018	Riga	Latvia	1)University of Latvia 2)Eötvös Loránd University, Hungary
2019	Osijek	Croatia	1)Department of Information Sciences, Faculty of Humanities and Social Sciences at University of Osijek, Croatia 2)The Hague University of Applied Sciences, Netherlands 3)Uppsala University and Linnaeus University, Sweden

STRATEGIC PARTNERSHIP

2020	Paris	France	1)Institut Francilien d'Ingénierie des Services (IFIS), Gustave Eiffel University, Paris, France 2)University of Library Studies and Information Technologies (ULSIT), Sofia, Bulgaria
2021	Porto	Portugal	1)Porto Accounting and Business School - Porto Polytechnic (ISCAP), Portugal 2)University of Library Studies and Information Technologies (ULSIT), Sofia, Bulgaria 3) University of Leon, Spain
2022	Debrecen	Hungary	1)Faculty of Informatics and Faculty of Humanities of University of Debrecen, Hungary 2)University and National Library, Hungary 3)Media, Information and Design of the University of Applied Sciences and Arts Hannover, Germany
2023	Oslo	Norway	1)Department of Archivistics, Library and Information Science of Oslo Metropolitan University, Norway 2)Department of Information studies at University College London, UK 3)Swedish School of Library and Information Science of University of Borås, Sweden

This approach to organizing the Conference allows us to establish and strengthen relationships between universities. Therefore, within the framework of our research, we additionally monitored how international communications correlate with each other in the process of joint organization of the Conference, joint preparation of a report, and joint project activities.

Reading conference publications made it possible to determine the topics that were subject to discussion during 2012–2016. Despite a certain thematic orientation of each year, among the relevant topics are information resources and sources of information, information channels, social networks and media, electronic libraries and their role in society, LIS education (Fig. 1).

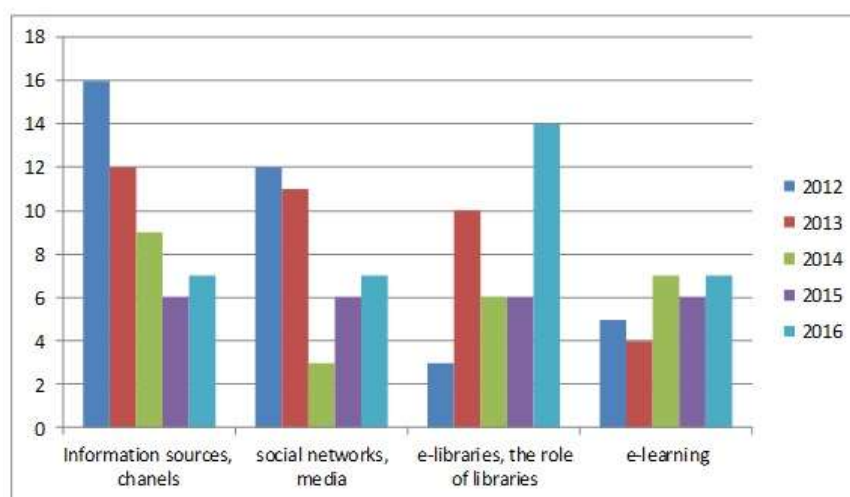


Fig. 1. Current Topics of the BOBCATSSS Conference Materials During 2012–2016

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In 2017, the main thematic blocks were: Library, Information, Interactive media. The largest number of reports related to library innovations and trends in library and information education. The theme of 2018 was focused on reading: reading skills in the digital space, experience of libraries in promoting reading, reading culture, and communication. The issues about the preservation of cultural heritage and academic integrity were also raised. The research by Hungarian librarians (National Széchényi Library) by Andor Nagy and Máté Tóth, aimed at comparing the priorities of digitalization of cultural values in the libraries of European countries, attracts attention among the materials of 2018. The researchers found different motivations for digitization in libraries in the south, north, east, and west of Europe, as well as among national-level, academic, and public libraries. In particular, they established that for Eastern countries, the focus on conservation and ensuring creative use is of great importance, while in other countries, commercial goals and satisfaction of leisure needs prevail (Nagy & Toth, 2018).

In order to attract participants from different countries, support scientific communication, and further development of international interaction, the best reports are determined within BOBCATSSS Conferences. So, the research of Lisa Morrison, Graduate Student, and Terry Weech, Associate Professor of School of Information Sciences, University of Illinois, Urbana-Champaign, USA, was recognized as the best report of 2018. Alina Stoicescu (University of Copenhagen, Denmark) and Isto Huvila (Uppsala University, Sweden) received awards for the best works of BOBCATSSS 2019.

During 2019–2023, the topics of reports were diversified in accordance with the needs of information and library structures, and modern challenges. This period includes the following current topics (the participants of the Conference addressed to them every year): formation of information and media literacy; management of digital data and collections; Copyright; open access, open resources (Fig. 2).

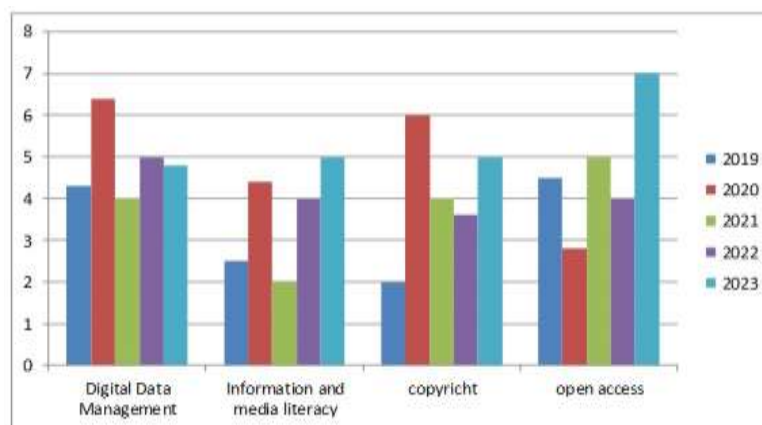


Fig. 2. Current Topics Discussed During 2019–2023

Compared to the 2012–2016 period, the emphasis on research, personnel training, and professional activity in 2019–2023, in our opinion, is due to the development of open science.

Among the main topics of the reports in 2019, we can also highlight the social roles of information institutions, innovative technologies, and the information profession, which is becoming more and more interdisciplinary. The interesting report is on the transformation of the LIS department into a transdisciplinary iSchool model at Linnaeus University (Sweden), which united disparate departments, disciplines and non-academic institutions to train personnel that meet today's demands (Golub, 2019).

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Most of the reports in 2020 were devoted to the declared theme of the Conference: countering fake news, fake information, predatory journals through the development of critical thinking, academic integrity, and the formation of information and media literacy.

The BOBCATSSS-2021 Conference was virtual due to the global COVID-19 crisis. Digitization of cultural heritage documents, preservation, transmission and exchange of information and knowledge in the network space, distance learning, management of information, data and digital services, online reading, copyright law, and other issues were discussed during the Conference.

In 2022, the main attention was paid to information and data, the use of open educational resources, the problems of supporting science and scientific communications by library specialists, developing Data Science competencies among students, and other relevant issues. Undoubtedly, the key reports dedicated to open science, cognitive information communications, and artificial intelligence are interesting and extraordinary.

New opportunities for the library and information profession became the subject of discussion at BOBCATSSS-2023 (Zenodo, 2023). Among them, we can highlight the convergent development of libraries, museums, and archives; problems of international scientific cooperation in the direction of digital curation; evaluation of digital content; new approaches to the organization of LIS education; new roles and prospects for the development of libraries, etc.

Undoubtedly, the exchange of information within the Conference of students, teachers, information specialists, library workers, and representatives of other structures promptly reflects the processes and trends of the branch development and contributes to the deepening of international professional cooperation. Joint preparation and implementation of international projects and cooperation of researchers based on co-authorship are key factors in this aspect.

Modern forms and channels of scientific communication contribute to the unification of researchers from different countries to organize and conduct joint research, and preparation of joint publications. In general, local, national, and international co-authorship can be distinguished in scientific communications. Local co-authorship is understood as joint research by authors who work in the same institution and prepared a scientific publication through joint efforts. National co-authorship is the result of cooperation between researchers from different institutions and organizations in the same country. International co-authorship is a scientific collaboration of researchers from different countries, the result of which is a joint publication (Shemaieva & Kostyrko, 2022).

In general, within the framework of the research, the total number of co-authored documents during 2019–2022 and the number of international co-authored documents were determined (Fig. 3).

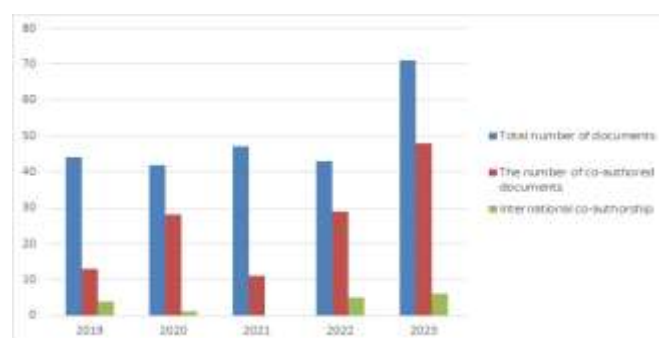


Fig. 3. The Number of Co-authored Documents in Relation to the Total Number of Documents by Years

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As can be seen from the diagram, co-authoring is a common practice among academics and educators participating in BOBCATSSS Conferences. Along with this, international co-authorship is less common but it is growing. The analysis process revealed high activity of international cooperation between teachers, students, information specialists, library workers, management specialists, and other researchers from Hachette University, Turkey; University of Zagreb, Croatia; University of Library Studies and Information Technologies, Bulgaria; Faculty of Informatics, University of Debrecen; Hungary; National Szechenyi Library, Hungary; Inland NorwayTUniversity of Applied Sciences, Hamar, Norway; Oslo Metropolitan University, Oslo, Norway.

In total, the authors identified 29 publications of international co-authorship during 2012–2023 (Table 3).

Table 3

The Number of General Publications Prepared by Authors from Different Countries

Year	The number of documents	The number of authors	International interaction between countries in the joint preparation of materials
2012	4	15	1)AU+DE, 2)NO+BD, 3)DK+RO, 4)BG+TR+HR
2013	2	8	1)TR+BW+LV, 2)BG+HR+TR+FR
2014	4	10	1)JP+US, 2)IT+CA, 3)ES+US, 4)TR+HR
2015	1	2	1)CA+US
2016	2	4	1)US+ZA, 2)US+HU
2017	2	4	1)HR+SE, 2)UK+NO
2018	-	-	-
2019	3	9	1)NO+HU, 2)US+HR, 3)JP+NO
2020	1	3	1)BG+US
2021	-	-	-
2022	4	11	1)IP+US, 2)HU+US, 3)HU+RO, 4)HU+PL
2023	6	25	1)DK+SE+NO+IS, 2)PT+BR, 3)BG+IT+FI, 4)HU+US, 5)US+CA+BD, 6)FI+NO

The conducted research about co-authorship within the Conference made it possible to establish that student co-authorship is developing in the scientific and educational environment of the library and information sphere. The researchers of the conference materials drew attention to this: Jelke Nijboer (2012), who underlined the co-authorship of students with teachers as an important educational strategy, and T. Sveum (2013), who, as a result of the BOBCATSSS-2012 study, found 17 joint publications of students and teachers and 6 papers of student co-authorship (between students) (Shemaieva & Kostyrko, 2022; Sveum, 2013). The development of co-authorship with students and the implementation of communications by students at an International Conference is indeed important not only for educational strategies but also for the inclusion of students in scientific communications at the international level.

It was possible to track student co-authorship during the study of the materials for 2019 and 2023 (Table 4). This is due to the fact that many Proceedings and Abstracts of BOBCATSSS Conferences do not have specific information about its participants.

Based on the materials of the 2019 and 2023 Conferences, it can be concluded that students from almost all countries participating in them are actively involved in scientific research and

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dissemination of their results at BOBCATSSS International Conferences, both in individual publications and in co-authorship with teachers/professors. The most active are students from Croatia, Norway, and Germany.

Table 4

Student Publications (Individual and Co-authored)

Year	bachelor			master			postgraduate		
	individual	co-authored	International	individual	co-authored	International	individual	co-authored	International
2019	3	2	1	6	9	-	5	5	-
2023	3	9	-	1	2	-	1	3	-

As we can see from Table 4, in 2019 there was student participation in the preparation of one document of international co-authorship. These two undergraduate students together with their scientific supervisor professor and assistant to the professor (University of Osijek, Croatia) and a professor from the USA (The Simmons School of Library and Information Science) argued the importance of an online forum for the treatment of Alzheimer's disease.

An undergraduate student's report, co-authored with a master's student from Hungary (Eötvös Loránd University), which compares data science-related programs and disciplines in higher education institutions in Hungary and the Philippines, is also noteworthy. The research of a student and her teacher from Portugal (University of Coimbra, Faculty of Arts and Humanities) is also interesting, where they justify preprints as a new model of publishing in a repository and as an operational method of modern scientific communication. Collaboration between web archivists and digital humanitarians in the fields of data mining, data visualization, and artificial intelligence is having an impact. Note that Ukrainian researchers emphasize the development of multifaceted communication links in the library and information environment. In particular, one of these forms defines the interaction of teachers, scientists, and practicing librarians with students (Grabar & Kislyuk, 2023).

Also, in the process of studying the conference materials, the most active authors were identified. Koizumi Masaroni, who is one of the famous Japanese experts in the field of library management (University of Tsukuba, Japan), has the largest number of publications. He submitted both individual research materials and co-authorship during 2019–2023. Tania Todorova has fewer publications: Chair of BOBCATSSS Association 2021–2023, Chair "Interfaculty Chair 'ICT in Library Studies, Education and Cultural Heritage'", University of Library Studies and Information Technologies, Bulgaria. She actively develops international partnerships with universities in different countries. It is worth noting that it was she who contributed to the establishment of professional contacts among teachers of specialized departments of the Kharkiv State Academy of Culture and the National Aerospace University named after M. E. Zhukovsky "KHAI", Kharkiv, Ukraine at the level of the Cooperation Agreement with the University of Library Studies and Information Technologies, Bulgaria and joining the international project Digital Education for Crisis Situations: Times when there is no alternative (DECriS) as participants in filling out questionnaires and online participation of teachers of Kharkiv, Kharkiv, Ukraine, and library specialists at the scientific library of the National University of Shipbuilding, Mykolaiv, Ukraine in Multiplier Events within the scope of the project DECriS.

In general, in the process of analysing the materials of the BOBCATSSS Conference, a high level of international cooperation was determined in the direction of the implementation of joint international projects between European universities and European universities of other

countries, in particular with the USA, Canada, and Japan. During the research period, specialists from Germany and Croatia took part in 10 projects, Hungary – in 7 projects, Turkey, Bulgaria, and France – in 6 projects (Table 5). It is worth noting that reports on the joint preparation and implementation of international projects are submitted both jointly and individually. As can be seen from Table 5, the largest number of projects (9) was presented in 2012 and 2023, and the smallest (1) in 2018.

Table 5

Communications within the Conference about International Projects

Year	The number of projects	International projects by countries
2012	9	1) Hungary+Croatia, 2) USA+Germany, 3) Australia+Germany, 4) Norway+Bangladesh, 5) Sweden+Denmark, 6) Turkey+Croatia, 7) Great Britain+Croatia, 8) Germany+Netherlands, 9) Bulgaria+Croatia+Turkey
2013	3	1) Turkey+Denmark, 2) Poland+Mexico, 3) Bulgaria+Croatia+Turkey+France
2014	2	1) France+USA, 2) Netherlands+Germany+China
2015	3	1)Czech Republic+Finland, 2)Croatia+Turkey, 3)USA+Canada
2016	4	1) Czech Republic+France, 2) USA+South Africa+France, 3)Hungary+USA, 4)Poland+Lithuania+Latvia+Norway
2017	5	1) Italy+Canada, 2) France+USA, 3) France+China+Netherlands, 4) France+South Korea+Netherlands, 5)Germany+Netherlands+China
2018	1	1) USA+Great Britain+Germany
2019	5	1) Croatia+Turkey+Spain+Sweden+Austria+Germany+Poland+Italy, 2) Denmark+Germany+Hungary+Norway+Sweden+Switzerland, 3) Croatia+Slovakia+Slovenia+Czech Republic+Poland, 4) USA+Croatia, 5)Norway+Sweden+Finland
2020	1	1) USA+Bulgaria, 2) Bulgaria+Netherlands+Italy
2021	1	1) Great Britain+Ireland+Finland+Netherlands+Germany+Austria
2022	4	1) Japan+USA, 2) Hungary+USA, 3) Hungary+Poland, 4) Spain+Portugal
2023	7	1) Brazil+Portugal, 2) Croatia+Germany+Spain+Bulgaria, 3)Bulgaria+Italy+Finland, 4)Hungary+USA, 5)USA+Canada+Bangladesh, 6)Finland+Norway 7)Italy+UK+Netherlands +Hungary+Germany

Familiarization with the conference materials, which outline the features, directions, and results of joint project activities at the international level, allows us to confirm our previous conclusions that the modernization of information and library education in European countries is primarily aimed at the development of international partnership and social dialogue (Shemaieva & Grabar, 2021). The implementation of international projects is aimed at: the development of communication skills of library workers; digitization of cultural heritage; collaboration between business, library and information sphere and science; joint creation and use of open educational resources; development of international research, training of information and library personnel; changing the role of libraries in supporting scientific communications; interaction with communities. The duration of contacts between the cooperation parties, the competence of the participants, and personal characteristics are important for international cooperation. Today, international exchange programs and projects between universities and colleges are an integral part of the educational programs of many institutions.

Conclusions

The conducted analysis of International Conferences contributes to a clearer understanding of the changes taking place in the information and library sphere and forecasting of further development strategies.

International cooperation of European countries develops, first of all, at the organizational level and is characterized by the joint participation of several universities from different countries for the preparation of the conference. Secondly, the development of international research is taking place, which is manifested in the preparation of joint publications (international co-authorship) and international projects aimed at developing the communication skills of library workers; digitization of cultural heritage; collaboration between business, library, and information sphere and science; joint creation and use of open educational resources; strengthening of digital infrastructure; formation of new professional skills.

The thematic content of the conferences shows not only the development of relevant research, and educational and practical directions in foreign experience but also allows to determine the directions of inclusion of Ukrainian professionals in international movements and projects. Of course, English language proficiency, geographical distance, and cultural proximity are important factors that have a positive effect on scientific international cooperation.

An important condition for the development of professional international interaction in the modern socio-communicative environment of the library sphere is the deployment of the organization of international communicative events; participation in international scientific research; training of personnel who have the latest tools of professional activity; initiation of international projects; international co-authorship. Activation of international co-authorship will contribute to the understanding of cultural, linguistic, political, technological, and professional features.

In general, the analysis of the materials of the BOBCATSSS Conference confirms the innovative activity of European universities, which train personnel for the information and library field, and raises the issue of intensifying international cooperation of Ukrainian professionals and scientists.

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SHEMAIEVA H. V.

Кафедра документознавства та української мови, Національний аерокосмічний університет ім. М. Є. Жуковського «ХАІ» (Харків, Україна),
e-mail: annashemaeva@ukr.net, ORCID 0000-0002-1053-989X

KOSTYRKO T. M.

Наукова бібліотека, Національний університет кораблебудування ім. адмірала Макарова, (Миколаїв, Україна), e-mail: tamara.kostyrko@nuos.edu.ua, ORCID 0000-0002-4175-9975

GRABAR N. H.

Державний біотехнологічний університет (Харків, Україна), e-mail: grabar-ng@ukr.net, ORCID 0000-0002-5120-0382

Міжнародне співробітництво у сфері LIS: аналіз матеріалів конференції BOBCATSSS

Мета. Висвітлюються результати аналізу матеріалів міжнародної наукової конференції BOBCATSSS (2012–2023), в межах якої дискутуються актуальні теми бібліотечно-інформаційної науки, освіти і практики. **Методика.** Вивчення міжнародного професійного співробітництва ґрунтується на використанні комплексу наукових методів, зокрема: аналізу і синтезу, статичного аналізу, бібліометричного аналізу та наукометричної діагностики. **Результати.** Визначено розширення географічних меж міжнародного співробітництва. Розкрито тематичні аспекти, які обговорювалися протягом 2012–2023 рр. Акцентовано увагу на міжнародному співавторстві як пріоритетному напрямі професійної взаємодії. Виявлено особливості проєктної професійної взаємодії за кількісними, змістовними та організаційними аспектами. Встановлено, що більшість міжнародних проєктів, про які повідомляється на конференції, реалізується на засадах співпраці університетів європейських країн. **Висновки.** Міжнародне співробітництво європейських країн розвивається, по-перше, на організаційному рівні та характеризується спільною участю декількох університетів із різних країн для підготовки конференції. По-друге, відбувається розвиток інтернаціональних досліджень, що проявляється на рівні міжнародного співавторства та міжнародних проєктів. Аналіз матеріалів конференції BOBCATSSS засвідчує інноваційну активність європейських університетів, що здійснюють підготовку кадрів для інформаційно-бібліотечної сфери та порушує питання активізації міжнародної співпраці українських професіоналів та науковців.

Ключові слова: бібліотечно-інформаційні науки (LIS); міжнародне співробітництво; наукові комунікації; співавторство; міжнародна проєктна діяльність; бібліометричний аналіз; конференція BOBCATSSS

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KRYTSKA O. V.

Sumy State University Library (Sumy, Ukraine),

e-mail: o.krytska@library.sumdu.edu.ua, ORCID 0000-0002-7075-2588

FANDIKOVA Y. V.

Sumy State University Library (Sumy, Ukraine),

e-mail: y.zherobkina@library.sumdu.edu.ua, ORCID 0009-0006-7755-0571

Knowledge Management Organization in the Context of LibGuides of Sumy State University Library

Objective. The article considers the role of knowledge management in the library of a higher education institution in the modern conditions of the global information society. The process of implementing LibGuides as a new tool for systematization, analysis, preservation, transfer, actualization of knowledge, and access to it is highlighted. **Methods.** The study was conducted by using methods: analytical and review, analysis and synthesis, comparison of experience of the world's university libraries, and statistical method. **Results.** The role of the library as an information institute in the context of the development of the knowledge society is shown. The experience of Sumy State University Library regarding the LibGuides project implementation, which contributes to the creation of new knowledge, its productive use, as well as the formation of information literacy and academic integrity of scientists, teachers, and students, is considered. **Conclusions.** University libraries play a significant role in the organization of knowledge management of all participants in the educational and scientific process. LibGuides are an effective tool in the practice of knowledge management, which includes the librarian's work with new technologies, generating new knowledge, and sharing knowledge without any geographical limitations.

Keywords: university libraries; knowledge management; LibGuides; professional-looking final product; communication management; subject librarian

Introduction

The rapid development of information technologies has led to the transformation of the role and purpose of libraries, to the need to form a new type of library of a higher education institution, the model of which is aimed at the target user with modern requests and needs. The library development strategy should take into account the influence of global trends, in particular digitization, artificial intelligence, access to an unlimited amount of information, and the formation of a knowledge society. Therefore, the task of mastering new practices, and tools for sharing and managing knowledge is relevant for the library.

The semantic content of the concepts "knowledge", and "knowledge management" is characterized by polysemy. The concept of knowledge management is a key aspect of scientific research that accumulates knowledge from various fields: economics, sociology, programming, and can be related to various areas of human activity: education, science, business, librarianship. Knowledge by types (Ebisi & Arua, 2019) according to the classification of S. Patil is conditionally divided into:

- Explicit Knowledge – knowledge that is documented or coded (knowledge that is stored in textbooks, study guides, lecture notes, periodicals, conference materials, standards, patents, databases, etc.).
- Tacit Knowledge – knowledge that is not recorded on material carriers and is transmitted through personal contacts, and relationships (skills, abilities, experience, ideas that people have).

Knowledge management is a promising direction for library activity. Librarians collect, transfer, store knowledge recorded in documents, organize and manage the storehouse of

knowledge, and search for necessary information. They use their own explicit and tacit knowledge to create a new professional-looking final product, have the ability to analyze, evaluate, and synthesize information in order to provide high-quality information service to users and create a library environment of innovative type to meet the needs of the academic community and the general public.

Knowledge management in the library field is a key research topic of many foreign and Ukrainian scientists. Among the scientific publications, it is necessary to pay attention to the newest ones: a practical guide by J. A. Bartlett (2021), which describes the use of explicit and tacit knowledge by library specialists within their organizations to keep them relevant to the information needs of their users; articles by M. Abah, N. K. Asiedu and D. J. Dei (2022), which states that libraries must move from the traditional knowledge management tactics and look in the direction of more modern tactics by selecting ideal implementation strategies for the knowledge management system; E. M. Ebisi and G. N. Arua (2019), who express the opinion that knowledge management should be a very common practice in day-to-day library work, in particular, the most important mission of libraries should be to expand access to knowledge for their users in all of the key areas of library services; O. Matviienko and M. Tsyvin (2018), who generally outline the activity models of an information profile specialist through the prism of explicit and tacit knowledge management.

The need for everyday knowledge management in the library (Bartlett, 2021; Ebisi & Arua, 2019) leads to the transformation of libraries, changes in the library activity system, the definition of new boundaries of the modern information space, and new functions of librarians and libraries in general, mastering of new technologies for knowledge management and exchange.

One of the modern knowledge management technologies that can be successfully realized in library practice is the implementation of LibGuides. Currently, the issue of effective implementation of LibGuides in the digital library environment is insufficiently researched among Ukrainian scientists. There is an urgent need to consider the advantages of the implementation of LibGuides by university libraries and the practical experience of their use by library users.

Materials for the study were obtained thanks to a thematic review of the websites of foreign university libraries by the library of Sumy State University (hereinafter - SumDU). Practical experience gained during participation in the II International Scientific-practical Conference "Library Development Strategies: From Idea to Implementation" became a significant impetus for the LibGuides implementation. Within the framework of the conference, the expert manager of Nazarbayev University Library Yelizaveta Kamilova in her report "Virtual and Online Strategies of Libraries: Nazarbayev University Library Practice" focused on the benefits of implementing LibGuides and presented the activities of subject librarians (Barabash, 2020).

The topic of the development and use of LibGuides is widely presented in the studies of foreign scientists (Mwanzu, Nakaziba, Karungi, Ayebazibwe, & Gatiti, 2022; Barker & Hoffman, 2021; Logan & Spence, 2021; Goodsett, Miles, & Nawalaniec, 2020; Paschke-Wood, Dubinsky, & Sult, 2020; Clever, 2020; Tyson & Dinneen, 2020). Abroad, LibGuides are a fairly common practice, it is a convenient format for presenting information, which significantly saves time for students, teachers, and scientists to search for the necessary scientific and educational resources.

LibGuides play a special role in the informational support of students and teachers (Clever, 2020). Research guides or LibGuides can be developed and implemented to better meet the needs of students by focusing on pedagogical support of student research and information literacy skill creation (Paschke-Wood, Dubinsky, & Sult, 2020).

Most of the world's leading libraries use LibGuides produced by Springshare (<https://www.springshare.com/>). Springshare is a software company for libraries and educational institutions. Since its inception in 2007, Springshare's LibGuides has become a popular content

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management system among academic libraries around the world (Logan & Spence, 2021). Libraries use it to create content, share knowledge and information, and promote library resources to the community. Currently, 7,500 educational institutions in 106 countries around the world use LibGuides. Many institutions use it to produce web content that helps users research specific topics and subjects, while others use it as their library website. LibGuides allows library staff members to share their expertise easily, quickly, and with a professional-looking final product. This system was designed to help library staff members publish information online without in-depth knowledge of HTML or CSS (Logan & Spence, 2021).

Despite the widespread use of Springshare's LibGuides by university libraries in various countries, each library may apply its own library approaches and practices in the direction of realizing the LibGuides implementation.

In this article, we aim to highlight the practical aspect of knowledge management based on the process of implementing our own format of LibGuides with the use of a new knowledge management infrastructure in the SumDU Library, which led to a rethinking of the functions and role of subject librarians.

Methods

To achieve the objective of the study, a complex of scientific methods was applied, including analysis and synthesis, comparison, analytical and review, and statistical methods.

A description of the own experience of the LibGuides implementation process by the SumDU Library was carried out, which includes the following stages:

- study of practical experience by analyzing websites of the world's university libraries;
- use of the Springshare platform in free trial access;
- assessment of the financial component of the LibGuides implementation;
- a request to develop own software with the design of a technical task;
- development and implementation of LibGuides;
- expansion of functional responsibilities of subject librarians;
- promotion of the professional-looking final product to the target audience;
- monitoring the effectiveness of the LibGuides use, as a result of which further improvement is carried out.

Results and Discussion

The active implementation of innovative technologies for supporting scientific and educational activities by the library of the higher education institution is due to the timely response to the requests and needs of the university community. The task of the modern library should be its transformation into a client-oriented service system, a communication space that will contribute to the development of research and academic activities of the university, and its integration into the globalized scientific, educational, and informational environment (Krytska, 2022). Sumy State University has a wide multi-disciplinary spectrum of specialties and areas of scientific activity. The SumDU Library functions as a navigator in modern information communications and plays a significant role in the implementation of knowledge management technologies. Considering the global trends in the development of the latest areas of library activity, the library investigated the requests of the university community regarding the systematization of knowledge in connection with the continuous flow of information. This led to the decision to develop the LibGuides website. The process of developing and implementing the LibGuides website took a year and a half and involved a certain sequence of actions.

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At the initial stage of the LibGuides implementation in the SumDU Library (it was in 2020), an analysis of the websites of the world's university libraries was carried out. We studied the structure, content, design style, and software of LibGuides of such universities as Nazarbayev University (Republic of Kazakhstan), University of Cambridge (Great Britain), University of Liverpool (Great Britain), Duke University (USA), Auburn University (USA), Butler University (USA), University of Groningen (Netherlands).

The second stage was a free trial access to test the Springshare platform in December 2020.

The following platform modules were available:

- LibGuides – a flexible platform for creating and sharing guides;
- LibCal – an integrated calendaring platform designed to handle all calendaring needs, including booking;
- LibAnswers – 24/7 online chat;
- LibWizard – allows to create forms, surveys, quizzes;
- LibCRM – a module for collecting and saving data about persons and organizations with which the library cooperates;
- LibInsight – a module that allows to build dashboards to share statistics with stakeholders and to create shareable datasets;
- LibStaffer – a module for organizing the internal work of staff.

It's worth pointing out that there is a relationship between the above-mentioned modules, which makes it possible to cooperate with students, teachers, and scientists on the Springshare platform. The main advantages of using these modules are: they are easily integrated into the structure of the website; integrate with social networks (Facebook, Twitter), social photo service Pinterest and programs Zoom, and Microsoft Teams; adapted to mobile devices.

It should be noted that in modern realities libraries often depend on software products offered by IT corporations. In most cases, such software products are very expensive. As an example, the cost of the Springshare platform for the SumDU Library in 2020 was \$10,999 USD per year. The Springshare platform has a significant list of advantages, but the limited financial capabilities of the SumDU Library did not allow us to use this platform.

At the same time, libraries can independently apply their own knowledge management technologies. This is confirmed by the fact that the SumDU Library has developed its own LibGuides format using a new knowledge management infrastructure.

To implement the LibGuides project, the library submitted a request for the development of its own software product to the Group of Web-oriented Information Systems of SumDU.

Librarians designed a technical task for the development of the LibGuides website:

- the structure should be appropriate for educational directions of training and the scientific research areas of SumDU;
- website localization in Ukrainian and English;
- arrangement and storage of online manuals containing text information, videos, and images;
- 24/7 access to materials;
- search and sorting of materials according to defined parameters (topics, databases, keywords);
- organizing feedback with users;
- displaying the content of the LibGuides website in accordance with the stylistic design of the SumDU Library website;
- adapting to mobile devices.

The technical task was implemented by the Group of Web-oriented Information Systems of SumDU. The LibGuides website was developed on Yii Framework/2.0.43, based on the PHP-Framework component structure for fast development of large web applications.

The feedback with users is provided by subject librarians who are responsible for each faculty/institute (Fig. 1). They provide informational support in all educational and scientific areas, consult on relevant issues, promote the establishment of partnerships with faculties /institutes, and in the future they become an effective link in this communication system. The implementation of LibGuides led to a peculiar rethinking of the librarian's role and functions since it required the librarians to master modern competencies, quickly acquire subject knowledge, develop the required skills and abilities, namely communicative management, active leadership qualities, critical thinking, and the ability to adapt.

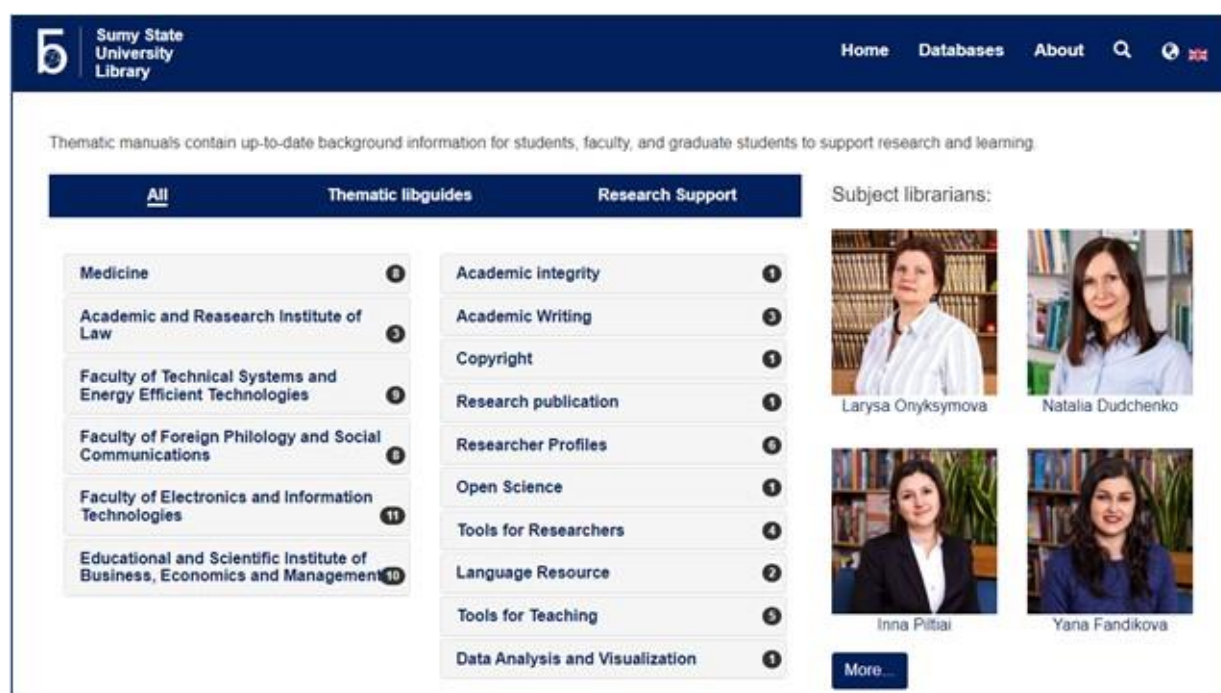


Fig. 1. The Structure of the LibGuides Website

The SumDU Library will increase the innovative potential of its specialists, promote their professional growth, and form a proactive culture of self-development and responsibility for the joint result (Krytska, 2022). Subject librarians are involved in advanced training courses (in particular through the Center of Human Resources Development of SumDU), constantly participate in training, seminars, and webinars, conferences (in particular of the Ukrainian Library Association) to improve acquired skills and abilities, take online courses on various platforms (Coursera, Prometheus, EdEra, VUM online, etc.).

It is worth noting that the LibGuides project has significant advantages for the target audience. As opposed to the usual search on the Internet, LibGuides provides access to reliable and verified scientific and educational resources. In accordance with the scientific directions, educational programs, and specialties of a specific faculty/institute, a list of resources and databases, modern periodicals, educational and scientific literature (textbooks, study guides, lecture notes, monographs), online courses, useful resources are provided on the LibGuides website (Fig. 2).

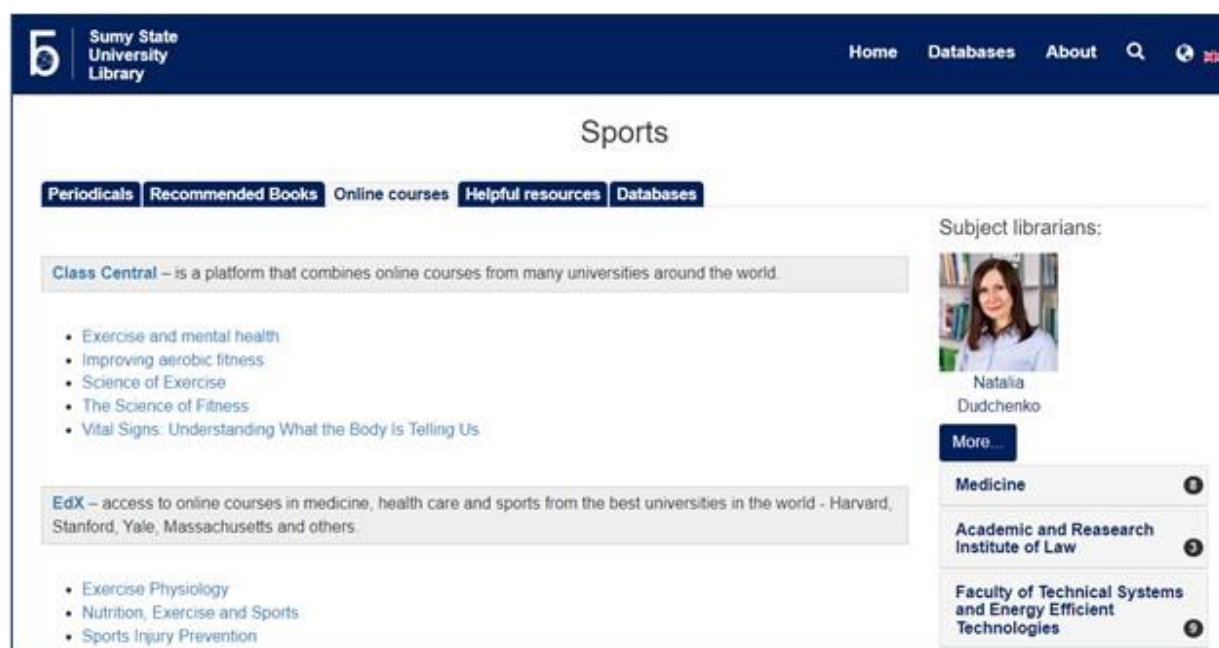


Fig. 2. Website Content According to the Specialty "Sports"

Creating and maintaining subject guides is an ongoing challenge for many academic libraries (Barker & Hoffman, 2021). There is always the possibility that users will not wish to use the information provided in the LibGuides format. Taking into account this factor, the library should direct users in the right direction when searching in modern information flows, and draw attention to LibGuides as a single point of access to information resources in the direction of scientific and educational university activities. Support of the LibGuides project requires subject librarians to carry out monitoring activities in terms of searching a set of scientific and educational resources, also updating content on the LibGuides website.

One of the important stages of effective use of the professional-looking final product by the target audience is promotion. The SumDU Library applies its own marketing strategies to promote LibGuides to the community (students, teachers, scientists) of each faculty/institute of SumDU by organizing and holding meetings. The library should promote the use of LibGuides in teaching activities (Clever, 2020). Thanks to the subject librarians, there is constant communication with the faculties/institutes, as a result of which the university community's suggestions regarding updating content on the LibGuides website are taken into account and implemented.

The use of LibGuides is monitored on a system basis using the Google Analytics service (from February 28, 2023). It should be noted that during the short period of its existence, this project has proven itself as a useful tool for finding the necessary information. The usage statistics of the LibGuides website show a gradual and constant improvement, an increase in the number of audience coverage. The increase in the number of visits to the website in certain periods indicates that the holding of presentation meetings (in the period from March to April 2023) caused interest in viewing. At the same time, it was found that in July-August there was a decrease in the indicators of usage activity, which is associated with the educational process stopping and summer student vacations beginning, as well as vacations of scientific and pedagogical staff (Fig. 3). At the beginning of the new academic year (September 2023), there is a general increase in the number of audience coverage and increase in interest to the individual thematic pages of the LibGuides website (Fig. 4).

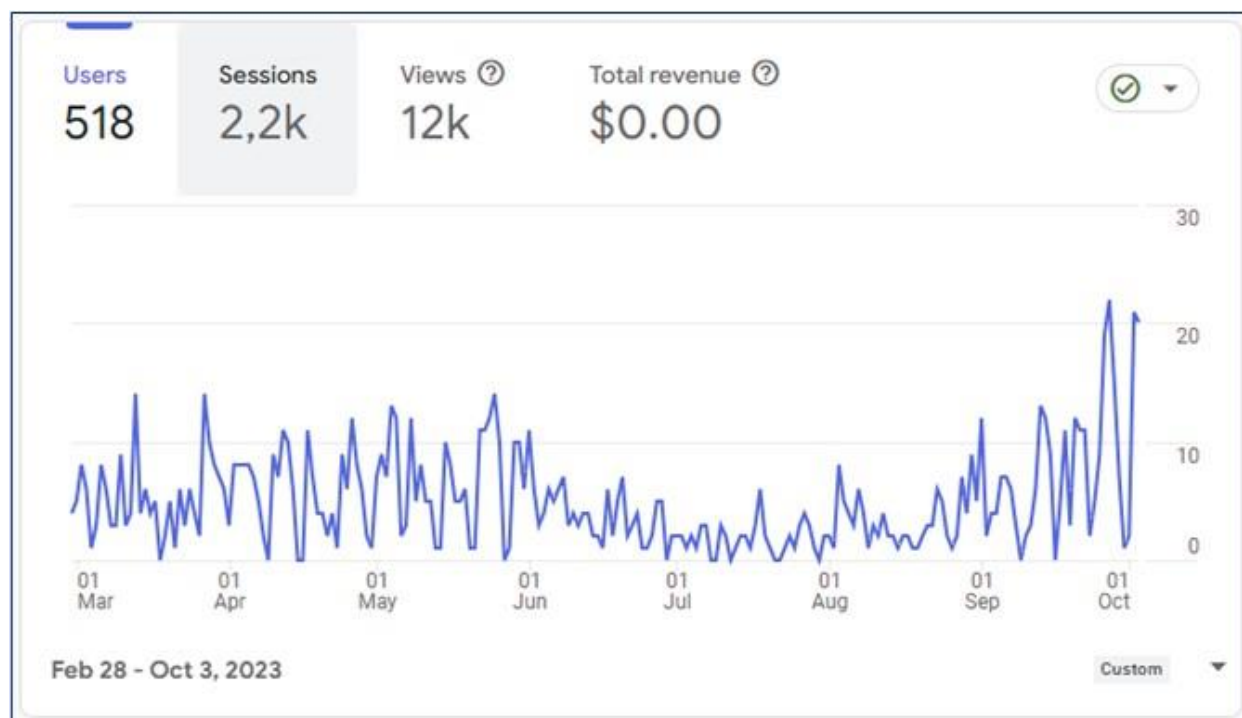


Fig. 3. Usage Statistics of the LibGuides Website as of October 3, 2023

Pages and Screens: Name of the page and screen						
Custom: Sept. 1 - October 3 2023						
Page and screen name	Views	Users	Number of views per user	Average interaction time	Number of events	Conversions
	3 012 100% of the total	148 100% of the total	20,35 Str. 0%	10 min 52 s Str. 0%	11 175 100% of the total	0,00
1 Libguides	944	85	11,11	3 min 23 s	2 937	0,00
2 Medicine	158	23	6,87	6 min 20 s	723	0,00
3 Pediatrics	134	9	14,89	16 min 32 s	510	0,00
4 Databases AZ	85	18	4,72	1 min 25 sec	225	0,00
5 Public health	67	11	6,09	29s	173	0,00
6 Dentistry	63	3	21,00	13 min 53 s	271	0,00
7 Environmental protection technologies	52	2	26,00	13 min 08 s	242	0,00
8 Economy	49	7	7,00	14 min 48 s	235	0,00
9 Psychology	43	3	14,33	6 min 16 s	154	0,00
10 Social work	43	7	6,14	3 min 06 s	228	0,00

Fig. 4. The List of the Most Popular Thematic Pages of the LibGuides Website in September 2023

Based on the conducted statistical analysis, the SumDU Library notices the need for intensive promotion of the new resource to a separate category of users of each faculty/institute: students of various levels of education, teachers, and scientists. In order to effectively support the

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educational process, it is necessary to annually apply the latest strategies for popularizing LibGuides among first-year students of all specialties.

Conclusions

The article offers a new conceptual vision of the role of university libraries. It has been proven that they provide not only access to knowledge but also help the university community to use it effectively, and promote the open exchange of knowledge for research and education. The study revealed one of the latest technologies of knowledge management, which contributes to the development of a high-quality system of services and resources for the SumDU Library – the LibGuides implementation. The results of the analysis show that LibGuides are a tool that provides a system of interrelated processes for the creation, systematization, analysis, preservation, transfer, and actualization of explicit and tacit knowledge, as well as provides access to them to the SumDU academic community, aimed at creating additional value in support of learning, teaching, research activities.

On the basis of our own study, we have come to the conclusion that the LibGuides implementation with the use of a new knowledge management infrastructure leads to a rethinking of the functions of subject librarians, who, in addition to information support, are responsible for the effective organization of the interaction process and the establishment of partnerships with faculties/institutes, which contributes to the successful achievement of common goals, unification and coordination of efforts, rapid implementation of new solutions.

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KRYTSKA O. V.

Бібліотека Сумського державного університету (Суми, Україна),
e-mail: o.krytska@library.sumdu.edu.ua, ORCID 0000-0002-7075-2588

FANDIKOVA Y. V.

Бібліотека Сумського державного університету (Суми, Україна),
e-mail: y.zherobkina@library.sumdu.edu.ua, ORCID 0009-0006-7755-0571

Організація управління знаннями в контексті лібгайдів бібліотеки Сумського державного університету

Мета. У статті розглянута роль управління знаннями бібліотеки закладу вищої освіти в сучасних умовах глобального інформаційного суспільства. Висвітлено процес впровадження лібгайдів як нового інструменту систематизації, аналізу, збереження, трансферу, актуалізації знань та доступу до них. **Методика.** Дослідження проводилося шляхом використання методів: аналітико-оглядовий, методи аналізу та синтезу, порівняння досвіду бібліотек світових університетів, статистичний метод. **Результати.** Показано роль бібліотеки як інформаційного інституту в контексті розвитку суспільства знань. Розглянуто досвід бібліотеки Сумського державного університету щодо впровадження лібгайдів, що сприяють створенню нових знань, продуктивному їх використанню, а також формуванню інформаційної грамотності, академічної доброчесності науковців, викладачів і студентів університету. **Висновки.** Значну роль в організації управління знаннями усіх учасників освітньо-наукового процесу відіграють університетські бібліотеки. Лібгайди – це ефективний інструмент в практиці управління знаннями, що включає роботу предметного бібліотекаря з новими технологіями, генерування нових знань і обмін знаннями без будь-яких географічних обмежень.

Ключові слова: університетські бібліотеки; управління знаннями; лібгайди; професійний кінцевий продукт; комунікативний менеджмент; предметний бібліотекар

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DAVYDOVA I. O.

Department of Digital Communications and Information Technologies, Kharkiv State Academy of Culture (Kharkiv, Ukraine), e-mail: idavydova1@ukr.net, ORCID 0000-0001-6015-2477

MARINA O. YU.

Department of Digital Communications and Information Technologies, Kharkiv State Academy of Culture (Kharkiv, Ukraine), e-mail: helenmaryina@gmail.com, ORCID 0000-0002-7248-2147

Cognitive Model of Library Management in Crisis Conditions

Objective. The article considers library management as a complex socio-communication system in conditions of uncertainty of the external environment. The essence and methods of cognitive library management as an effective means of overcoming instability and global challenges of the XXI century are substantiated. **Methods.** With the help of information analysis, the peculiarities of the cognitive approach to library management in a crisis situation were defined. **Results.** A conclusion is made regarding the effectiveness of cognitive analysis, in particular PEST and SWOT analysis, cognitive structuring technologies. Cognitive analysis is considered as a powerful tool for researching a certain state of the library in an unstable and poorly structured environment. The application of the cognitive modeling method was used to identify the components of library management in conditions of uncertainty. **Conclusions.** Attention is focused on the need to use cognitive modeling, which contributes to a better understanding of the problem situation, detection of contradictions and qualitative analysis of the library as a system. A cognitive model of library management based on knowledge application technology in the management and decision-making process and effective communication interaction is proposed.

Keywords: library science; management; library; cognitive model; cognitive management; communication interaction

Introduction

The national crisis that engulfed Ukraine in 2022 affected every citizen, every institution. The war affected all areas of the country's activities, including the library and information industry. Rapid and negative events for our country covered all processes of information provision, readers and simply citizens of the country in one moment became objects of both physical and information wars. The life of not only the country, but also every institution, every person who ensures its functioning has changed.

Libraries, as the leading socio-communicative institutions of society, fully felt that the war drastically changes the conditions not only of functioning, but also of survival to a certain extent. Managers and employees of libraries found themselves in the conditions of a rapidly changing environment, which required instant decision-making, quick response dynamics, balanced reactions to the events taking place. The scale and destructive force of this war affected every library, every reader and citizen, changed the style and methods of management of library and information institutions in conditions of great uncertainty.

This article highlights the cognitive paradigm of library management as a result of the diversification of forms and methods of management in conditions of crisis, the growth of the factor of situationalness and external instability. The purpose of the article is to justify the essence and methods of cognitive management of the library as a document and communication institution of society in the conditions of global challenges.

Literature Review

The vision of the unfolding of the situation shows that the reaction of the scientific community to war events was for a certain time connected with the solution of the urgent task of survival of both every person and library institutions as a whole. Nevertheless, the invasion took many of us by surprise, because “most of us did not realize the potential scale and destructive power of this war” (Stanchyshyn, 2022). From the moment of the full-scale invasion of the Russian Federation to the territory of independent Ukraine, the readiness of everyone to defend their country became crucial. From the very first days of the Russian-Ukrainian war, domestic libraries, using all the knowledge accumulated during the previous eight years of Russian aggression in the east of Ukraine, help the armed forces of Ukraine to get closer to victory and civilians to withstand in this struggle. Specialists in the library field adjust their professional activities in the current conditions, trying to understand the events of today and build models of behavior for the future.

Analysis of the latest research and publications allows us to highlight a number of works in which the issue of library management in crisis conditions is considered from different angles. Thus, in the professional librarian discourse, N. Kropocheva (2023) considered and characterized the activity of the network of educational libraries in the conditions of martial law. The author emphasizes the idea of civic and patriotic orientation of the consolidated information resources of the network of educational libraries of the Ministry of Education and Science of Ukraine and the National Academy of Educational Sciences of Ukraine. The work describes the types of information products posted on the websites of library institutions of educational institutions, it is noted that the information resources produced by libraries in wartime conditions differ in genres, broadcasting channels, the principle of interaction and targeting. Of the similar topic are the scientific works of T. Vylehzhana (2022), N. Vovk (2022), which highlight the work of library workers on the information and cultural front, emphasizing the moral, information and psychological support of the population using libraries accounts in social networks.

The first works generalizing experience of survival, stability and adaptation of Ukrainian libraries to wartime conditions appeared in the scientific discourse (Kolesnykova, 2023). The scientist thoroughly studied the issue of adaptation of library teams of Ukrainian higher education institutions working under martial law, identified the main vectors of library activity, including distance, openness, unification and improvement of one whole information space. The article effectively illustrates precisely the cognitive model of management of Ukrainian libraries in the context of Russian military aggression.

M. Onyshchuk (2022) provides a thorough prognostic and analytical study of foreign mass media reports regarding the prerequisites and course of events of Russia's armed aggression against Ukraine. The author justifies in the pages of a specialized scientific periodical that sooner or later Russia will fall from its own senseless thirst for domination in conditions when the catastrophe of the Russian economy and a devastating defeat in Putin's reckless attempt are not that far off (Onyshchuk, 2022).

It can be predicted that the number of publications on the role of the library and the management of information and knowledge in times of crisis will increase. According to the purpose of our research, it can be stated that the issue of managing the library and the library and information environment in the conditions of crisis is solved only at the applied level and remains important and requires scientific justification.

Methods

Within the framework of the current study, an information analysis was carried out, which made it possible to trace the trend of changing paradigms of library management as a complex socio-communicative institution: from the paradigm of production management, through the dominance of paradigms of innovative and communication management to the model of cognitive management. The paradigm of cognitive management is determined by the trends of the general social development of the information environment from the information society to the knowledge society. Its emergence has been accelerated by Russia's large-scale military aggression against Ukraine and the global challenges of the XXI century, which require quick decision-making in a situation of external uncertainty. With the help of information analysis, the peculiarities of the cognitive approach to library management in a crisis situation were also clarified. The application of the cognitive modeling method was used to identify the components of library management in conditions of uncertainty.

Results and Discussion

Wartime conditions require the mastery and use of a special model of knowledge-based management. Its specificity is preparation and decision-making in conditions of high uncertainty of the external environment. The cognitive model of library management is based on the provisions of the situational approach as an effective management concept, the foundations of which were developed by Fred Fiedler (effective leadership model), Paul Hersey and Kenneth Blanchard (situational leadership model). According to the situational approach, the general process of managing an institution is the same, but the specific techniques that a director must use to effectively achieve the institution's goal can vary significantly.

The methodology of the situational approach in library management becomes more relevant with the emergence of the concept of cognitive management. This paradigm, the formation of which began in the 1990s, is now widespread. Internal resources, psychological characteristics and professional competences of managerial staff and library specialists, which are defined as the intellectual potential of an institution, are considered as fundamental sources of competitive advantages of a library. It is this parameter in conditions of uncertainty that determines the effectiveness of making certain management decisions.

The level of cognitive potential of the management staff of the library determines the quality of structuring of information that comes from the external environment, allows analysis and modeling of situations. An example of a cognitive analysis is PEST analysis (politics, economy, society, technology) and a SWOT analysis (an analysis of the strengths and weaknesses of an institution). They are the most powerful tools for studying an unstable and weakly structured environment. Compiling knowledge maps is essential for creating an effective knowledge management system of the organization, because "such maps provide an opportunity to combine knowledge components and get a general idea of structures, employees who have certain knowledge; about the relationship between different categories of knowledge" (Fedulova, 2007).

N. Semeniuk (2023) provides illustrative examples of the use of SWOT analysis as a method of assessing the organization's strengths and weaknesses, opportunities, and internal threats. The author singles out the questions that need an answer, visually presented in the form of a SWOT matrix (Fig. 1):

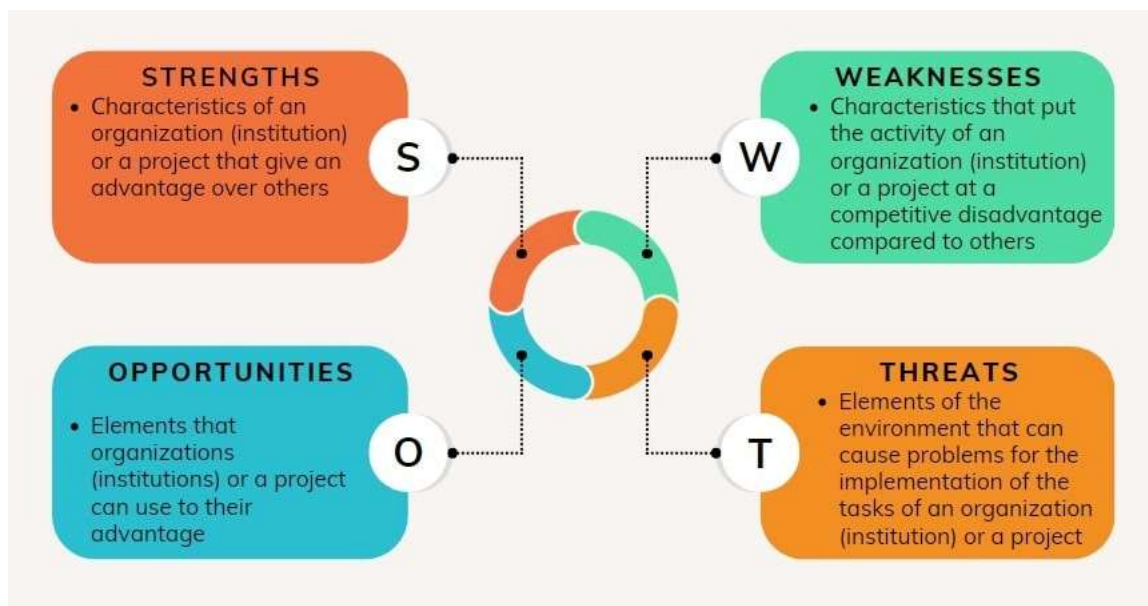


Fig. 1. SWOT Matrix

Strengths: characteristics of an organization (institution) or a project that give an advantage over others.

Weaknesses: characteristics that put the activity of an organization (institution) or a project at a competitive disadvantage compared to others.

Opportunities: elements that organizations (institutions) or a project can use to their advantage.

Threats: elements of the environment that can cause problems for the implementation of the tasks of an organization (institution) or a project (Semeniuk, 2023).

This methodology of strategic analysis of library development makes it possible to prevent the unfavorable development of a certain scenario. The cognitive model of library management involves solving tasks that are of a qualitative nature. In such cases, it is possible to use the technology of cognitive mapping. It involves clarification of the speculation regarding the functioning of the relevant object and is usually presented in the form of “if..., then...”. The technology of cognitive structuring can be applied at all levels of library management: in the process of decision-making, generation, storage and use of knowledge by individual specialists. This knowledge is shared during multi-level communication processes, and as a result, institutional knowledge is created, which the institution possesses.

The cognitive model of library management is based on modern technologies of applying knowledge in the process of management and decision-making, which in management theory is defined as cognitive work. The phenomenon of cognitive work (Wissensarbeit, knowledge work) within the document and information sphere has not been sufficiently investigated. Among the empirical studies that provide additional material for substantiating the named phenomenon as an important component of the functioning of libraries in the digital space, an important research project of the University of Vienna and the Institute for the Retraining of Managerial Staff (Austria) dedicated to the study of the interests and needs of people whose professional activities are related to knowledge management. According to the project participants A. Lasofsky-Blahut, M. Kofranek and S. Pernicka, there is no unified definition of the concept of “cognitive work” so far, however, three main features can be distinguished that differentiate cognitive work from other forms of activity:

- a set of various socially significant information, which in most cases requires a combination of professional education and professional qualification improvement;

- creativity and reflexivity of the nature of work, its result is often the production of new knowledge;

- employed ones in this field seek to find unconventional solutions to known tasks or address unsolved problems; a prerequisite for success is a high level of competence when solving problems in conditions of increased complexity (Lasofsky-Blahut, Kofranek, & Pernicka, 2007).

Recognition of the cognitive nature of library work requires managers of all levels to make differentiated use of personnel management tools, where the assessment of the level of knowledge becomes a component of the assessment of the contribution of a certain employee. Managers should know what new knowledge and skills certain employees have acquired. It is this information that forms the basis of working with personnel and planning their career growth. Cognitive work requires new improved conditions (which is the sphere of labor law regulation) for its implementation. The task of library managers is, on the one hand, to give employees more freedom, and on the other hand, to involve them into the main processes related to the functioning of the library. In addition, it is in knowledge-rich areas the model of trust in the level of competence of employees, their creativity, and labor discipline, can be tested.

An important component of the cognitive model of library management is its ability to form and adjust the communication system, use intellectual assets, and manage knowledge as a resource of value. The communication component in the cognitive management system is implemented at all levels of the library: individual generation, obtaining and extraction, preservation, transfer of knowledge, its distribution within the organization, assimilation, expert activity, communication, exchange of knowledge with employees. Another level of cognitive management is the search for options for cooperation and relationship with information consumers, the creation of horizontal and vertical channels of information transmission, the involvement of readers in the development and improvement of the quality of information products and services.

The communicative component of the concept of cognitive management is also found in:

- formation of individual competence of employees and managers of all management levels;

- interaction between two different types of intellectual capital (individual competence and the internal structure of the institution; individual competence and the external structure of the institution);

- formation of corporate culture.

Two types of cognitive management effectiveness analysis can be distinguished: comparison of goals and tasks with results and comparison of resources with the obtained effect. Thus, the analysis of the effectiveness of cognitive management consists in the comparison of its goals and tasks with the resources necessary for its implementation, as well as in the comparison of the obtained results and the achieved effect.

Conclusions

Cognitive management should be considered as an integral component of library development management, which is a leading direction of strategic management. The essence of cognitive management of the library consists in making management decisions based on one's own experience and on organized and verified knowledge about the library as an object of management. Such management is a model that integrates activities related to knowledge formation, codification, dissemination and use, as well as communication development and training (Fig. 2).

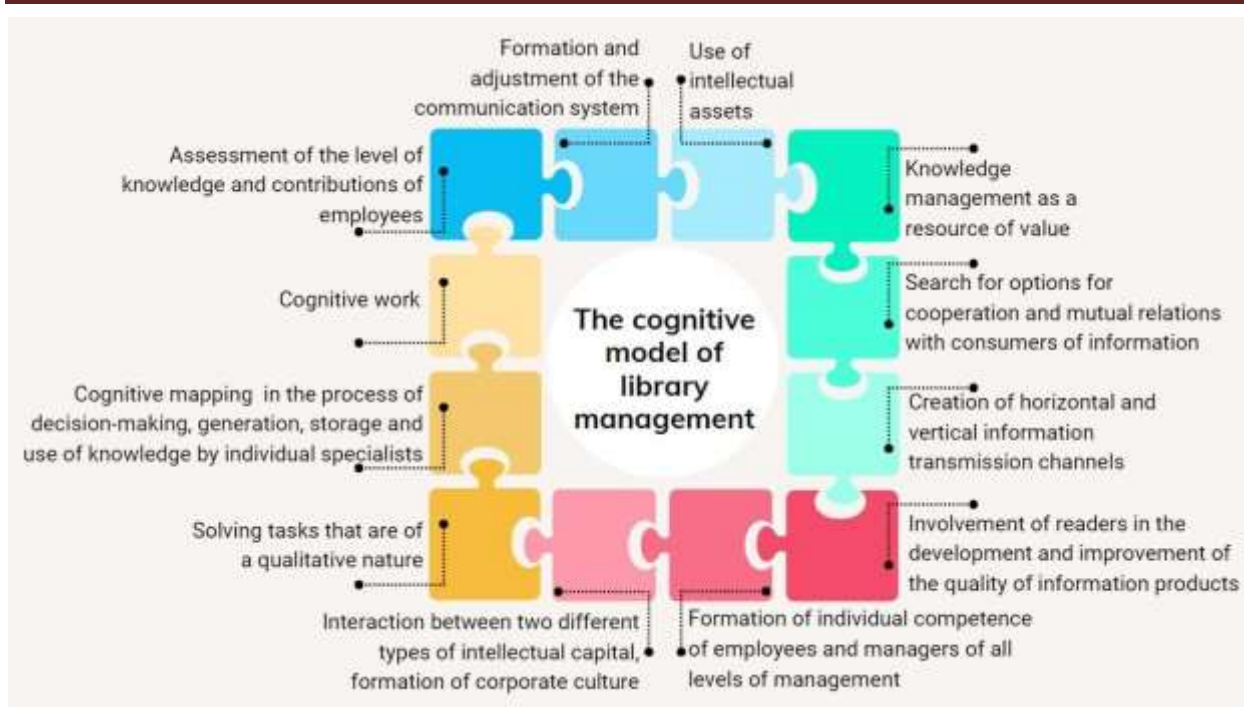


Fig. 2. Cognitive Model of Library Management

The technology of cognitive management has certain characteristic properties, among which one can single out novelty, efficiency, scientific capacity and situationality. The strategic ultimate goal of applying the cognitive model of library management is to ensure the stability of its functioning under conditions of uncertainty of the external and internal environment.

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DAVYDOVA I. O.

Кафедра цифрових комунікацій та інформаційних технологій, Харківська державна академія культури (Харків, Україна), e-mail: idavydova1@ukr.net,
ORCID 0000-0001-6015-2477

MARINA O. YU.

Кафедра цифрових комунікацій та інформаційних технологій, Харківська державна академія культури (Харків, Україна), e-mail: helenmaryina@gmail.com,
ORCID 0000-0002-7248-2147

Когнітивна модель управління бібліотекою в умовах кризи

Мета. У статті розглядається управління бібліотекою як складною соціокомунікаційною системою в умовах невизначеності зовнішнього середовища. Обґрунтовується сутність і методи когнітивного управління бібліотекою як дієвого засобу подолання нестабільності й глобальних викликів XXI століття. **Методика.** За допомогою інформаційного аналізу з'ясовано особливості когнітивного підходу до управління бібліотекою в ситуації кризи. **Результати.** Зроблено висновок щодо ефективності когнітивного аналізу, зокрема PEST і SWOT-аналізу, технологій когнітивної структуризації. Когнітивний аналіз розглядається як потужний інструмент досліджень певного стану бібліотеки в умовах нестабільного і слабоструктурованого середовища. Застосування методу когнітивного моделювання було використано для виявлення складових управління бібліотекою в умовах невизначеності. **Висновки.** Акцентовано увагу на необхідності використання когнітивного моделювання, яке сприяє кращому розумінню проблемної ситуації, виявленню протиріч і якісному аналізу бібліотеки як системи. Запропонована когнітивна модель управління бібліотекою, що базується на технології застосування знань в процесі управління та прийняття рішень та ефективній комунікаційній взаємодії.

Ключові слова: бібліотекознавство; управління; бібліотека; когнітивна модель; когнітивне управління; комунікаційна взаємодія

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NAVARRO M. R. V.

University of Perpetual Help System (Laguna, Philippines),
e-mail: navarro.maryrose@uphsl.edu.ph, ORCID 0009-0009-5422-9293

MASALINTO M. L. D.

University of Perpetual Help System (Laguna, Philippines),
e-mail: masalinto.lindie@uphsl.edu.ph, ORCID 0000-0002-6732-4179

GALICIA L. S.

University of Perpetual Help System (Laguna, Philippines),
e-mail: galicia.leomar@uphsl.edu.ph, ORCID 0000-0001-9356-3862

MALABANAN E. D.

University of Perpetual Help System (Laguna, Philippines),
e-mail: malabanan.elizabeth@uphsl.edu.ph

PALMA R. D.

University of Perpetual Help System (Laguna, Philippines),
e-mail: palma.raffy@uphsl.edu.ph

Knowledge, Preparedness and Challenges in Hyflex Library Operations among Higher Education Institutions (HEIs) Librarians in Calabarzon Philippines

Objective. Traditional library operations have been a staple in society for centuries by providing access to printed books and other resources. However, with the rise of technology, changing patron needs and the crisis induced by the COVID-19 outbreak, librarians adopted the hybrid and flexible (HyFlex) library operations to provide students, faculty, and staff with equitable access to learning resources and services. This study examined the knowledge, preparedness, and challenges associated with HyFlex library operations among librarians in Higher Education Institutions (HEIs) in Cavite, Laguna, Batangas, Rizal and Quezon (Calabarzon) Philippines. **Methods.** Descriptive in nature, the study utilized a survey questionnaire which was accomplished by 148 Higher Education Institutions (HEIs) librarians in Calabarzon. **Results.** Findings revealed that the majority of respondents were female, aged 31 to 40 years old, holding librarian positions, and having 11 to 15 years of service. The findings also indicated that respondents exhibited a very high level of knowledge and preparedness for Hyflex library operations. However, they encountered challenges in implementing hybrid and flexible operations. Additionally, the findings revealed no significant difference in respondents' knowledge of Hyflex library operations when grouped by age, gender, position, or years in service. However, a significant difference was found in respondents' preparedness for Hyflex library operations based on gender, while no significant differences were observed regardless of age, position, or years in service. **Conclusions.** As a whole, the findings suggest that despite the challenges in implementing hybrid and flexible operations, librarians in Higher Education Institutions (HEIs) in Calabarzon have demonstrated a very high level of knowledge and preparedness for Hyflex library operations. Therefore, Higher Education Institutions (HEIs) in Calabarzon should implement the formulated action plan and continue to embrace innovation to enhance practices in hybrid and flexible library operations.

Keywords: HyFlex operations; descriptive research; higher education institutions; academic libraries; Philippines

Introduction

The traditional operations of libraries have been a cornerstone of society for centuries, providing access to printed books and other invaluable resources. These traditional library operations place a strong emphasis on the storage and preservation of physical items, especially books and periodicals, with librarians acting as custodians of these precious collections

(Nageswari & Thanuskodi, 2021). Information is physically gathered in one place, requiring users to visit the library in person to discover its contents and utilize them (Kaur, 2015). However, in response to the rise of technology and evolving patron needs, libraries have had to adapt to remain relevant. Libraries began to embrace the digital realm by curating digital resources that expanded far beyond the constraints of physical shelves. E-books, audiobooks, and digital magazines found a place in virtual catalogs, accessible with a simple click. Online databases brimming with knowledge also became a staple, supporting research endeavors from afar. Makerspaces emerged as creative incubators, where patrons experimented with 3D printers, VR gadgets, and coding projects. Librarians also evolved into tech mentors, guiding novices through the intricacies of smartphones, social media, and data literacy.

On the other hand, the ongoing crisis induced by the COVID-19 outbreak has significantly altered higher education teaching in the country. Libraries are once again challenged to redefine their resources and service offerings, particularly their operations. As a result, faculty and staff at Higher Education Institutions (HEIs), including librarians, have shifted their focus to make resources and instruction more accessible to students. To support both in-person and remote learning, librarians have adopted hybrid and flexible (HyFlex) library operations to provide students, faculty, and staff with equitable access to learning resources and services. To successfully implement these new library operations, librarians should be knowledgeable and prepared for HyFlex library operations.

HyFlex library operations, as defined by Fowke (2018), combine internet technologies, social media, and print resources for clients. Walton and Edwards (2001) describe it as a flexible approach focused on user needs, enabling libraries to adapt and provide personalized solutions, enhancing the patron experience, and improving operational efficiency. Broopy (2020) postulated that HyFlex libraries offer a variety of ways to access resources and services: In-person access, wherein students and researchers can visit the library in person to use print resources, access computers, and meet with librarians. Synchronous online access allows students and researchers to actively participate in library events and programs in real-time over the internet. In contrast, asynchronous online access enables them to access library resources and services at their convenience, from anywhere. HyFlex libraries offer flexibility in how individuals choose to learn. For instance, students can opt for live, in-person lectures or view recorded lectures online, or they can review lecture materials at their own pace. Moreover, HyFlex libraries emphasize online learning and services, providing a broader range of digital resources and programs, along with training and support for those interested in online learning. These libraries also leverage technology extensively, using tools like learning management systems, video conferencing platforms, and other online resources to deliver instruction, provide reference assistance, and facilitate collaboration. Furthermore, HyFlex libraries are known for their adaptable service delivery, often extending their operating hours, offering 24/7 online support, and enabling online service requests (Da Silva, Oppenheim, & Caldas, 2021).

Consequently, academic libraries, according to Allen (2005), must adapt to changing information needs and technology by employing hybrid and flexible librarians who provide adaptable instructional and information services while managing changing physical locations. Verma and Gustafsson (2021) emphasize the importance of adapting resources and services to meet the needs of today's hybrid and flexible library landscape. To ensure successful information dissemination, Nkiko and Iroaganachi (2015) stress the importance of eliminating accessibility barriers, such as format, content, cost, distance, time, and language. Allen (2005) also emphasizes the need for academic organizations to invest in staff training and recruit librarians with diverse skills, including problem-solving, decision-making, and interpersonal skills, beyond technical expertise. Amaechi et al. (2018) identified challenges in implementing hybrid and flexible library

operations, including inadequate funding, undefined policies, and non-compliance with technology demands. Samantha (2020) highlights the need for policies to prevent disease spread when reopening libraries post-epidemic. Walton and Edwards (2001) note academic librarians' challenges in staying relevant in hybrid learning, requiring flexibility in skills, services, timing, and organizational structures.

In the Philippines, the Commission on Higher Education (CHED) mandated flexible learning schemes for academic institutions through CHED (2020) Memorandum Order No. 4, series of 2020. This scheme caters to learners' unique needs in terms of place, pace, process, and products of learning, utilizing both digital and non-digital technology, including face-to-face and out-of-classroom modes. To support this initiative, a memo dated March 24, 2021, outlined guidelines for recalibrating Miscellaneous and Other School Fees (MOSF) during COVID-19, which included the creation or expansion of e-libraries/digital libraries/online libraries. This directive applies to Higher Educational Institutions (HEIs) in the Calabarzon region, primarily larger institutions like universities. These HEIs have already begun implementing hybrid and flexible resources and services, combining traditional and digital approaches to provide researchers with access to data and information sources within their schools.

While several local and foreign studies have explored Hyflex library operations, a limited body of research address the knowledge, preparedness and challenges specific to Higher Education Institutions (HEIs) in Calabarzon, Philippines. The researchers contend that identifying librarians' knowledge, preparedness, and challenges in Hyflex Library Operations can offer empirical insights to library and school administrators. These insights can inform necessary actions, such as facility retrofitting, personnel upskilling, and increased funding for digitalizing library materials. Ultimately, this would enable them to better meet the information needs of their clients in hybrid and flexible learning environments.

Objectives. The study's primary objective was to ascertain the extent of knowledge, preparedness, and challenges associated with HyFlex library operations among librarians at Higher Education Institutions (HEIs) in the Calabarzon region. To achieve this, the study addressed the following sub-problems:

1. Investigated the demographic profile of HEIs librarians, in terms of:
 - Age,
 - Gender,
 - Position/Designation, and
 - Years of service within the institution.
2. Explored the level of knowledge possessed by HEIs librarians concerning HyFlex library operations.
3. Investigated whether a significant difference existed in respondents' levels of knowledge regarding HyFlex library operations when categorized based on their demographic profiles.
4. Examined whether a significant difference existed in respondents' levels of preparedness for HyFlex library operations when categorized based on their demographic profiles.
5. Explored the challenges faced by librarians from Higher Education Institutions (HEIs) in implementing HyFlex library operations.
6. Proposed an action plan based on the study's findings to address the identified issues and enhance HyFlex library operations among librarians from Higher Education Institutions (HEIs) in Calabarzon.

Literature Review

Allen (2021) defines a hybrid and flexible library as an environment that combines physical and virtual services, supporting users' professional activities from information discovery to resource manipulation. Fowke (2018) characterizes these libraries as blending features of public institutions and private associations, offering tangible goods and services encompassing internet technology, social media, and print resources. Broopy (2020) underscores that these libraries aim to integrate technologies from various sources within a working library context and explore integrated systems in both electronic and print environments. They should provide access to diverse resources using different technologies. Waller and Lee (2022) note that libraries are evolving into learning and study spaces catering to various learner styles, offering network access to their databases. Effective flexible libraries include designated group study areas with ICT capabilities, diverse study zones, computer workstations, wireless LAN laptop facilities, adaptable space configurations, and space optimization.

Kaur (2015) observed that with the rise of information and communication technologies in libraries, concerns about irrelevance have diminished. Librarians now operate in a HyFlex library environment. Nwosu (2018) noted that the 21st century features a blend of HyFlex libraries, combining virtual and traditional elements. These libraries use diverse technologies to integrate electronic and print services. Tiwari added that the HyFlex library's versatility addresses the evolving needs of a dispersed user community.

Garrod (2018) outlined key roles and responsibilities in HyFlex libraries: learning facilitators educate users, academic partners build faculty relationships, and metadata specialists manage electronic information resources. Duties encompass resource evaluation, gateway access, and team building involving faculty, IT professionals, course designers, and web experts. Success in this flexible learning environment demands diverse skills and technology proficiency. On the other hand, Frederick and Wolff-Eisenberg's (2020) study found that higher education libraries have redesigned websites, reallocated resources, and enhanced virtual services, including reference, bibliographic instruction, and e-resources like electronic journals and books, to support hybrid learning. In the same vein, Sadueste (2022) discovered high levels of accessibility, usability, and user satisfaction in the hybrid resources and services of academic libraries in Albay province. Moreover, Montero (2021) research revealed that BRLC members are highly ready for library resource and service innovations, with updated online resources, databases, and a revamped reading area supporting the new normal in the learning environment.

Consequently, the Commission on Higher Education has recently set the final standards in operating an academic library, under the CHED (2021) Memorandum Order No. 22, series of 2021, which subject the minimum requirements for libraries in the Higher Education Institutions (HEIs) common to all programs. According to the CMO all types of school under the three-horizontal typology of HEIs, both in the highly urbanized areas as well as in the geographically isolated and disadvantage areas were considered in the preparation of this set of requirements. All institutions are encouraged to go beyond the minimum requirements to be able to adjust to the needs of the 21st century learners and educators in an ever-changing technological society. This will further improve the status and/or standards of the HEIs in terms of programs, resources and services. Moreover, libraries will become more responsive to the requirements of hybrid and flexible learning modalities. Furthermore, the CMO emphasizes that libraries must undergo redefinition, restructuring, and redesign using Information Communication and Technology (ICT) applications to stay relevant and responsive to flexible learning modalities and modern educational needs. This shift entails moving collections and services to online and digital formats. Librarians must exhibit competence, proactivity, and flexibility in managing libraries to adapt to global

changes in information, aggregation, curation, and dissemination. Section 5-a of CMO No. 22, 2021, addresses services and utilization. It mandates libraries to offer a variety of services and tools supporting teaching, research, extension programs, and online teaching. These services encompass reference, library instruction, inter/intra-library loans, document delivery, selective dissemination of information, remote access to electronic resources, and software platforms for plagiarism detection. Innovative and flexible library services should continuously provide students, teaching and non-teaching personnel, and other stakeholders access to information through various means, including virtual libraries, circulation services (both face-to-face and online), book delivery and pick-up, scanning, photocopying, and electronic database instruction and training.

Methods

This study utilized the descriptive research design, as this is the most suitable and appropriate method for the study. The study specifically described the Higher Education Institutions (HEIs) librarians' knowledge, preparedness and challenges on HyFlex library operations. A structured online questionnaire prepared using Google Forms was used to collect the data from the 148 Higher Education Institutions (HEIs) librarians in Calabarzon. Of the 148 target respondents, all answered the instrument representing 100% retrieval rate. The survey was administered from February 15 to March 25, 2023.

The questionnaire was divided into four parts. Part I dealt with the respondent's profile variables. Part II focused on the respondent's level of knowledge on HyFlex library operations; Part III covered the respondents' level of preparedness for HyFlex library operations; and Part IV focuses on the changes of respondents in implementing HyFlex library operations. To further ensure the validity of the questionnaire, it was validated by experts in library management, research and statistics. It was also subjected to reliability testing using Cronbach's Alpha Coefficient. Cronbach's alpha measure showed .812 (good reliability) for knowledge indicators, .831 (good reliability) for preparedness indicators, and .923 (excellent reliability) for challenges indicators. For the statistical description of data, frequency and percentage distribution were used to describe the respondents' profile in terms of age, sex, position/designation and years of service. Weighted mean was used to describe the respondents' level of knowledge, level of preparedness and challenges encountered in Hyflex library operations. Mann-Whitney U test was used to describe the difference in the respondents' level of knowledge and level of preparedness for Hyflex library operations when grouped according to their gender. While analysis of Variance (ANOVA) was used to determine the difference in the respondents' level of knowledge and level of preparedness for Hyflex library operations when grouped according to their age, position/designation and years of service.

Results and Discussion

Analysis and discussion of the knowledge, preparedness and challenges on HyFlex library operations are presented in the succeeding tables and textual presentations. The rank of indicators was determined based on the computed weighted mean, from highest to lowest. In case of similar mean values, averaging the rank numbers and dividing by the number of cases were done.

Table 1

Profile of the Respondents		
Profile Variables	Frequency	Percentage
Age		
21-30 years old	36	24.30
31-40 years old	76	51.40
41-50 years old	30	20.30
51-60 years old	6	4.10
Sex		
Male	21	14.20
Female	127	85.80
Position/Designation		
Librarian	72	48.60
LD/CL/UL	38	25.70
Head Librarian	30	20.30
Assistant Librarian	8	5.40
Years in Service		
5 years and below	35	23.60
6-10 years	39	26.40
11-15 years	51	34.50
16-20 years	16	10.80
21 years and above	7	4.70
N=148		

Table 1 shows the profile of respondents. Findings revealed that 51.4% were aged 31-40, 24.3% aged 21-30, 20.3% aged 41-50, and 4.1% aged 51-60. Females comprised 85.8%, males 14.2%. Positions included 48.6% Librarians, 25.7% Library Directors, College Librarians, and University Librarians, 20.3% Head Librarians, and 5.4% Assistant Librarians. Regarding years of service, 34.5% had 11-15 years, 26.4% 6-10 years, 23.6% less than 5 years, 10.8% 16-20 years, and 4.7% 21+ years. The typical respondent is a female Librarian aged 31-40 with 11-15 years of service.

Table 2

Respondents' Level of Knowledge on Hyflex Library Operations			
Indicators	Weighted Mean	Verbal Interpretation	Rank
1. I can effectively navigate the library's various online resources and services.	3.63	Very High	1
2. I am familiar with the different functions related to hybrid and flexible library services.	3.24	High	9.5
3. I am skilled in locating, choosing, distributing, and arranging materials for hybrid and flexible library operation.	3.43	Very High	4
4. I can develop and implement comprehensive plan for discoverable and accessible print collections.	3.24	High	9.5
5. I can integrate all kinds of resources using different technologies from traditional library to the digital library world.	3.43	Very High	4
6. I am proactive, flexible, and agile in providing library services in hyflex learning environment.	3.42	Very High	6
7. I am adaptable, flexible and resourceful in managing hyflex library processes.	3.47	Very High	2
8. I am capable of providing a variety of virtual services that are aligned with the Hyflex learning environment.	3.38	Very High	7
9. I can provide instructional and information services that are appropriate for the hyflex learning environment.	3.35	Very High	8

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10. I am capable of handling the increasing user demand for Hyflex library services.	3.43	Very High	4
Overall Weighted Mean	3.44	Very High	

Table 2 depicts the respondents' level of knowledge on hyflex library operations. Findings showed that respondents have high knowledge levels in Hyflex library operations. They excel in navigating online resources (mean 3.63, rank 1) and adapt well to managing Hyflex library processes (mean 3.47, rank 2). Respondents also demonstrate proficiency in handling materials and integrating resources (mean 3.43, rank 4). They are proactive and flexible in offering services (mean 3.42, rank 6) and provide virtual services aligned with Hyflex learning (mean 3.38, rank 7). Additionally, they excel in instructional services for Hyflex learning (mean 3.35, rank 8). Respondents have a good grasp of developing accessible print collections (mean 3.24, rank 9.5). Overall, respondents show very high knowledge in Hyflex library operations (mean 3.44), indicating their readiness to support new learning modes in Higher Education Institutions (HEIs) in Calabarzon. This is congruent with Tella's (2020) assessment of hybrid library operations in Nigerian Universities, revealing that most librarians had some knowledge but had gaps in implementation. Similarly, Bhardwaj and Kanjilal (2020) found that Indian librarians were knowledgeable about hybrid library services. In conclusion, ongoing training and resources are crucial for librarians to effectively aid hybrid and online teaching and learning.

Table 3

Respondents' Level of Preparedness for Hyflex Library Operations

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. We adopt innovative and creative approaches to information access, and library instruction across teaching and learning modalities to support HyFlex-designed courses.	3.53	Very High	1
2. The library offered various remote services such as e-Lending, e-Learning and Document Delivery Services for our patrons	3.38	Very High	7.5
3. The library has provided assistance through the Ask a Librarian chat service, where students have access to librarians' assistance in real-time through a virtual chat.	3.51	Very High	2.5
4. We developed and implemented comprehensive plan for discoverable and accessible print collections.	3.38	Very High	7.5
5. We intensify the acquisition of library resources and refashion the delivery of library services in support of hyflex learning environment.	3.45	Very High	6
6. We developed an online portal for our information literacy and online resources.	3.24	High	9
7. We extended our services beyond the physical boundaries of the library facility.	3.48	Very High	4
8. The library began digitizing its collections in support of the hyflex learning needs of the students.	3.22	High	10
9. The library provides a variety of virtual services aligned with the hyflex learning environment.	3.51	Very High	2.5
10. We enriched our library collections, such as printed books, periodicals, media, and electronic titles (e-books).	3.47	Very High	5
Overall Weighted Mean	3.46	Very High	

Table 3 summarizes respondents' high preparedness for Hyflex library operations. They excel in innovative approaches to information access and instruction (mean: 3.53, rank: 1), offer

virtual services like Ask a Librarian chat (mean: 3.51, rank: 2.5), extend services beyond the library (mean: 3.48, rank: 4), enrich library collections (mean: 3.47, rank: 5), intensify resource acquisition (mean: 3.45, rank: 6), and implement comprehensive plans (mean: 3.38, rank: 7.5). They've also developed online portals for information literacy (mean: 3.24, rank: 9) and started digitizing collections (mean: 3.2, rank: 10). Overall, respondents are well-prepared for Hyflex library operations, with a mean of 3.46, indicating readiness among Higher Education Institutions (HEIs) librarians in Calabarzon to support new learning modalities.

The findings align with Montero (2021), showing high preparedness among BRLC members in library resources and services. They adapt innovations like online resources, rearranging library furniture for more reading space for the new normal. Similarly, Mathabela (2021) noted improved user services, including building access, electronic resources, and information services for online classes. Libraries are catering to increased online class needs (Chiwada, 2021).

Table 4

Difference in the Respondents' Level of Knowledge on Hyflex Library Operations When Grouped According to Their Profile Variables

Profile Variables		Mean	Inferential Statistics	p-value	Decision	Interpretation
Age	21-30 years old	3.40	F=1.116	.345	H ₀ not rejected	Not Significant
	31-40 years old	3.48				
	41-50 years old	3.38				
	51-60 years old	3.55				
Sex	Male	3.41	U=1289.500 Z=-.244	.808	H ₀ not rejected	Not Significant
	Female	3.45				
Position/Designation	Librarian	3.44	F=.825	.482	H ₀ not rejected	Not Significant
	LD/CL/UL	3.39				
	Head Librarian	3.48				
	Assistant Librarian	3.57				
Years in Service	5 years and below	3.45	F=.069	.991	H ₀ not rejected	Not Significant
	6-10 years	3.44				
	11-15 years	3.43				
	16-20 years	3.46				
	21 years and above	3.40				

***Significant @.05**

For differences in respondents' knowledge of Hyflex library operations based on age (F=1.116), gender (U=1289.500; Z=-.244), position (F=.825), and years in service (F=.069), p-values of .345, .808, .482, and .991 were obtained. All p-values exceeded the significance level of .05, indicating no significant difference. This suggests that respondents have similar knowledge of Hyflex library operations, regardless of age, gender, position, or years in service. Various factors like training, education, resource access, and individual technology interest affect librarians' knowledge (Beatty, 2019). Addressing these factors is crucial to ensure librarians possess the necessary skills for hybrid library operations. Allen (2005) adds that academic librarians should expand their skills, encompassing technology, problem-solving, decision-making, and interpersonal abilities.

Table 5

Difference in the Respondents' Level of Preparedness for Hyflex Library Operations When Grouped According to Their Profile Variables

Profile Variables		Mean	Inferential Statistics	p-value	Decision	Interpretation
Age	21-30 years old	3.50	F=.231	.875	H ₀ not rejected	Not Significant
	31-40 years old	3.45				
	41-50 years old	3.43				
	51-60 years old	3.43				
Sex	Male	3.43	U=852.500 Z=-2.669	.008	H ₀ rejected	Significant
	Female	3.61				
Position/Designation	Librarian	3.49	F=1.596	.193	H ₀ not rejected	Not Significant
	LD/CL/UL	3.38				
	Head Librarian	3.43				
	Assistant Librarian	3.61				
Years in Service	5 years and below	3.58	F=2.098	.084	H ₀ not rejected	Not Significant
	6-10 years	3.37				
	11-15 years	3.45				
	16-20 years	3.39				
	21 years and above	3.56				

***Significant @.05**

As shown in Table 5, a significant gender-based difference in preparedness for Hyflex library operations is evident (U=852.500; Z=-2.669, p=.008). Female respondents exhibit higher preparedness compared to males. This could be attributed to their active involvement in professional activities like training and seminars (Yousaf, Mohammad & Soroya, 2013). However, no significant differences were observed based on age (F=.231), position (F=1.596), and years in service (F=2.098) with p-values of .875, .193, .084, respectively. This means that the respondents have the same level of preparedness for Hyflex library operations regardless of their age, gender, position and years in service. These findings differ from Bhardwaj and Kanjilal (2020), who noted varying preparedness levels based on demographics. Factors like training and resource access play pivotal roles (Bhardwaj & Kanjilal, 2020). Equal opportunities for training and resource provision are crucial and professional development enhances preparedness for hybrid learning environments (Goodsett, 2019).

Table 6

Challenges Encountered in Implementing Hyflex Library Operations

Indicators		Weighted Mean	Verbal Interpretation	Rank
1.	A limited number of users utilize our library resources.	3.28	Strongly Agree	3
2.	Slow acquisition of requested library materials for hyflex library operation.	3.26	Strongly Agree	4.5
3.	Slow internet connectivity disrupts efficient delivery of online library services.	3.30	Strongly Agree	1.5
4.	Reduced number of library staff.	3.20	Agree	9.5
5.	Lack of funds to acquire materials for hyflex library operation.	3.30	Strongly Agree	1.5
6.	The library experienced barriers on the transformation from physical collection to digital formats.	3.26	Strongly Agree	4.5
7.	Lack of support of school administration.	3.20	Agree	9.5

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8. Library clients are not aware on the various resources and services offered by the library.	3.23	Agree	6.5
9. Difficulty in balancing library collection vis-à-vis print and online.	3.23	Agree	6.5
10. Lack of skills to successfully promote the hybrid and flexible resources and services of the library.	3.21	Agree	8
Overall Weighted Mean	3.25	Strongly Agree	

Table 6 shows the challenges of HEIs librarians in implementing Hyflex Library Operations. Findings revealed that librarians encounter obstacles due to limited funds for materials, slow internet, and reduced user engagement, all scoring high on the difficulty scale. Transitioning from physical to digital formats and acquiring requested materials for Hyflex libraries are also problematic. Additionally, librarians struggle with balancing print and online collections and students' lack of awareness about available resources. They find it somewhat challenging to promote hybrid library services due to insufficient skills. Conversely, reduced staff and limited support from school administration are comparatively less challenging. In summary, HEIs librarians in Calabarzon face significant difficulties in implementing hybrid and flexible library operations, with an overall weighted mean difficulty rating of 3.25

Similar challenges were identified in recent studies. Rafiq M., Batool S. H., Ali A. F. and Ullah M. (2021) found that barriers to hybrid library operations included digital divide, low digital literacy, slow internet, and reduced online resource usage. Sadueste (2022) highlighted high internet costs and power outages as challenges for library professionals. Jeremia and Mwantimwa (2022) noted staff's lack of skills in promoting online services, hindering hybrid library implementation. Additionally, Malabanan, Galicia, & Navarro (2021) reported challenges such as transitioning to digital collections, budget cuts, and reduced usage of physical materials among academic librarians in Calabarzon.

Proposed Action Plan

The plan was proposed for the sustainability and development in Hyflex library operations. These action plans are significantly important as measures on addressing the weaknesses based on the findings of the study.

Table 7

The Proposed Action Plan to Address the Weaknesses Based on the Findings of the Study

Area Thrust	Objectives	Strategies	Time Frame	Person Involved	Source of Funds	Success Indicators
Familiarization with the different functions related to hybrid and flexible library services	To provide capability training and skills development for library personnel.	Continuous professional development through attending webinars, trainings, and workshops that focus on hybrid and flexible library operations.	Year Round	Head Librarian Library Staff	Library Budget	Library staff have the necessary knowledge and skills to effectively implement the hybrid and flexible library operations.

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Comprehensive plan for discoverable and accessible printed collections	To develop and implement comprehensive plan for discoverable and accessible printed collections.	Provide remote access to printed collections to enable the users to access the collections remotely through online platforms, such as a virtual assistance service, a document delivery system, chat services, and e-mail support.	Year Round	Head Librarian Library Staff	Library Budget	Library users can easily access/ utilize the various printed collections remotely.
Digitization of Library Resources	To provide digital library resources accessible and flexible to all library users	Provide a comprehensive and diverse flexible digital library resources easily accessible to users.	6 months	Head Librarian Library Staff	Library Budget	30-50% of the library's resources are available in digital copy.
Support of school administration	To provide adequate library funding that support the hyflex library operation. To develop and implement policies that support the hyflex library operation.	Conduct a needs assessment to determine the types of resources and services that are needed by students and faculty members, and allocate/ increased funding accordingly. Set clear policy goals that align with the library's mission in hyflex library operation and monitor library policy implementation to ensure that they are effectively executed and updated as needed to meet the changing demands of users.	Year Round	School Administrators Head Librarian	School/ Library Budget	Library staff can efficiently develop and provide flexible library resources and services to the patrons.
Request for additional library staff.	To provide adequate and qualified number of library personnel	Employ an adequate number of qualified library personnel to ensure quality library and information service at the Hyflex library operation.	2 months	School Administrators/ HR/ Head Librarian		The library has a sufficient number of library staff that provide quality library and information service at the Hyflex library operation.

Conclusions

Higher Education Institutions (HEIs) libraries in the Philippines have transitioned from traditional to hybrid and flexible (HyFlex) operations due to technological advancements, evolving patron needs, and the ongoing COVID-19 crisis. HyFlex library operations encompass a blend of internet technology, social media, and printed resources for its users. These operations improve

the patron experience by providing numerous ways of accessing information and resources while also increasing the efficiency and effectiveness of library services.

The findings imply that HEI librarians have an extensive understanding of HyFlex library operations, as well as a diverse set of plans, resources, and training. HEI librarians demonstrate the same level of knowledge and preparedness for HyFlex library operations regardless of their age, gender, rank, or years of service. However, they face obstacles when it comes to establishing hybrid and flexible library operations, most notably a lack of funding to acquire items for HyFlex library operations and poor internet connections that impede the efficient delivery of online library services.

The following recommendations were proposed to improve HyFlex library operations practices:

1. Academic librarians should work with their colleagues, including IT professionals, faculty members, and students, to design and implement effective hybrid and flexible library operations strategies.
2. HEIs librarians should continue to participate in professional development training, workshops, and conferences focusing on hybrid and flexible library operations. These events can provide training on the newest developments in technology and practices to help them improve their knowledge and skills in HyFlex library operations.
3. HEIs librarians should stay updated on current trends and best practices in hybrid and flexible library operations in order to continuously enhance their preparedness and provide effective support to their users.
4. HEIs librarians should establish partnerships with other libraries and organizations to share resources, pool expertise, and collaborate on solutions to common challenges in hybrid and flexible library operations.
5. Academic administrators should provide ongoing support for retrofitting library facilities, resources, and services to assist HEIs librarians and staff in adapting to changes in workflows, technology, and user needs.

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NAVARRO M. R. V.

Університет системи безперервної допомоги (Лагуна, Філіппіни),
e-mail: navarro.maryrose@uphsl.edu.ph, ORCID 0009-0009-5422-9293

MASALINTO M. L. D.

Університет системи безперервної допомоги (Лагуна, Філіппіни),
e-mail: masalinto.lindie@uphsl.edu.ph, ORCID 0000-0002-6732-4179

GALICIA L. S.

Університет системи безперервної допомоги (Лагуна, Філіппіни),
e-mail: galicia.leomar@uphsl.edu.ph, ORCID 0000-0001-9356-3862

MALABANAN E. D.

Університет системи безперервної допомоги (Лагуна, Філіппіни),
e-mail: malabanan.elizabeth@uphsl.edu.ph

PALMA R. D.

Університет системи безперервної допомоги (Лагуна, Філіппіни),
e-mail: palma.raffy@uphsl.edu.ph

Знання, підготовленість та виклики у гібридній бібліотечній діяльності бібліотек закладів вищої освіти (ЗВО) в регіоні Калабарсон (Філіппіни)

Мета. Традиційна бібліотечна діяльність протягом століть була основою суспільства, забезпечуючи доступ до друкованих книг та інших ресурсів. Однак з розвитком технологій, зміною потреб користувачів та кризою, спричиненою спалахом COVID-19, бібліотекарі запровадили гібридні та гнучкі бібліотечні послуги (HyFlex), щоб забезпечити студентам, викладачам та працівникам рівний доступ до навчальних ресурсів та послуг. Це дослідження вивчало знання, готовність та виклики, пов'язані з роботою бібліотек HyFlex, серед бібліотекарів закладів вищої освіти (ЗВО) у Кавіте, Лагуні, Батангасі, Рісалі та Кесоні (Калабарсон), Філіппіни. **Методика.** Дослідження є описовим за своєю природою, в ньому використовувалася самостійно розроблена анкета, яку заповнили 148 бібліотекарів ЗВО Калабарсону. **Результати.** Результати показали, що більшість респондентів – жінки, віком від 31 до 40 років, які займають посади бібліотекарів і мають стаж роботи від 11 до 15 років. Результати також показали, що респонденти продемонстрували дуже високий рівень знань і підготовленості до роботи в бібліотеці Hyflex. Однак вони зіткнулися з проблемами у впровадженні гібридних і гнучких операцій. Крім того, результати дослідження не виявили суттєвих відмінностей у знаннях респондентів щодо роботи бібліотек з Hyflex, якщо їх згрупувати за віком, статтю, посадою чи стажем роботи. Однак було виявлено значну різницю в готовності респондентів до роботи в бібліотеках Hyflex залежно від статі, тоді як не було виявлено значних відмінностей незалежно від віку, посади чи стажу роботи. **Висновки.** В цілому, результати дослідження свідчать про те, що, незважаючи на виклики, пов'язані з впровадженням гібридних і гнучких операцій, бібліотекарі ЗВО Калабарсону продемонстрували дуже високий рівень знань і підготовленості до роботи в умовах Hyflex бібліотек. Таким чином, закладам вищої освіти Калабарсон необхідно впроваджувати розроблений план дій і продовжувати адаптувати інновації для вдосконалення практик гібридної та гнучкої роботи бібліотек.

Ключові слова: операції HyFlex; описові дослідження; заклади вищої освіти; академічні бібліотеки; Філіппіни

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ODNOVOLYKOVA O. V.

Scientific and Technical Library, National Technical University "Kharkiv Polytechnic Institute" (Kharkiv, Ukraine), e-mail: olena.odnovolikova@khpі.edu.ua, ORCID 0000-0001-9503-7161

HLAVCHEVA YU. M.

Scientific and Technical Library, National Technical University "Kharkiv Polytechnic Institute" (Kharkiv, Ukraine), e-mail: yuliia.hlavcheva@khpі.edu.ua, ORCID 0000-0001-7991-5411

Shared Leadership as the Foundation of University Library Management in Crisis Conditions of Martial Law

Objective. The aim of this publication is to determine an effective approach to managing a university library in crisis conditions of martial law and to identify factors that affect the quality of implementing this approach. Since the beginning of the full-scale invasion, critical changes have taken place in the real working conditions in the front-line areas of Ukraine. The resumption of work at the university and all its departments required the implementation of new management approaches. The main available mode of work, which ensured the safety of all participants in the educational and scientific process, was remote work. **Methods.** An analysis of scientific publications on the research topic was conducted. The report examines an approach based on the concept of shared leadership for organizing the virtual work of the university library. The optimality of this approach in organizing the work of employees in a virtual environment was determined and justified based on empirical methods. **Results.** The use of the shared leadership concept demonstrated the highest effectiveness. Conditions for the effective application of this approach to management using shared leadership are described. **Conclusions.** Therefore, we believe that shared leadership can become the optimal approach to organizing the virtual work of the library in the crisis conditions of martial law. Based on practical experience, two main groups of factors for the successful implementation of shared leadership have been identified.

Keywords: shared leadership; management; remote work; virtual teams; teamwork

Introduction

The problem of effective organisation of work in remote environments has become relevant since the COVID-19 pandemic, but during the pandemic there were opportunities to combine online and offline modes of work, which did not require a radical revision of management methods. The beginning of the full-scale invasion and military operations on the territory of Ukraine made it impossible for organisations to work offline in a number of regions. NTU "KhPI" is still located in the frontline zone. The library of NTU "KhPI" was no exception: the staff was dispersed in different regions of the country and abroad. It became impossible to stay at the workplace.

In addition to the geographical dispersion of employees, the library management faced heterogeneity in the conditions for each employee to do their work. Different time zones, limited internet connection speeds and internet access limits, different hardware and software, computer equipment with different technological capabilities, and inaccessibility of information resources for work. These factors were compounded by critical external circumstances: air raid alerts with the need to stay in a shelter for significant periods; power outages. The moral and psychological state of the employees was extremely low - everyone felt disorganised and broken. All of this became an obstacle to the full performance of official duties and normal communication between the administration and employees, which took place in the form of telephone conversations, messaging and e-mail. Some people lost the technical ability to work. The library staff was forced to switch to remote work. Given the circumstances, the format of communication became less formal. The desire to keep the jobs and continue to work efficiently changed the climate in the team. The part of the team that had the opportunity to continue working remotely became more

open to mutual support, trust in each other and the implementation of common tasks. The common goal turned the team into a virtual team (Loianych, 2018). The virtuality of the team is determined, in particular, by the spatial distance between its members and, accordingly, the use of digital information and communication technologies as the main communication channel (Bell & Kozłowski, 2002).

Modern means of communication provide a sufficient set of tools to ensure that colleagues can achieve maximum mutual understanding in the process of remote work: instant messaging, video conferencing, screen sharing, shared access to the development and editing of documents, etc. For successful communication in the information virtual space, it is necessary to have software and hardware whose technical characteristics meet the requirements of information tools (programs, applications). Unfortunately, the library users found themselves in the same situation as the library staff: most of them had only a smartphone as their main means of communication and learning, so in the first months of the war, messengers were the most popular tools for communicating with users.

It should be noted that the library traditionally performs information, research, and cultural and educational functions in the academic environment. These functions require not only communication between participants in the educational and scientific process, but also access to electronic academic resources. Own electronic resources were available to users. The difficulty arose with setting up remote access to external electronic resources. Access to them is provided on their own information portals according to certain rules. This imposed additional requirements for the organisation of remote work of the university library.

Intuitively, the library administration started work on the formation of groups by area of work with people responsible for specific areas. It was logical to involve employees who had previously worked exclusively offline in remote work. Training and adaptation of these employees was taken over by the area managers.

Shared leadership is defined as a dynamic collaborative process through which influence is distributed among team members to achieve beneficial outcomes for the organisation, thanks to which such teams are characterised by decentralised interaction, collective task performance, mutual support, skill development, and common purpose (Kocolowski, 2010). The concept of shared leadership asserts that influence in an organisation is dynamic and distributed; it is a process in which the group as a whole sets goals and performance expectations, and in which different people can take on leadership roles at any time depending on the needs of the task and the team. One of the beliefs behind shared leadership is that the individuals or groups doing the work know best how to optimise work processes (Krier, 2022).

In a virtual environment, it is easier to create teams within a collective precisely because there is no need to physically move people around (Bell & Kozłowski, 2002). This feature of the virtual environment became one of the factors for introducing the concept of shared leadership, as it became necessary to cross the boundaries of the formal structure - library departments.

Virtual teams are more flexible to changes in composition and functional tasks. This is confirmed by the results of the analysis of the typology of virtual teams and the concepts of their effective management. Typology of virtual teams (Bell & Kozłowski, 2002):

- By time allocation: performing tasks synchronously in real time, performing tasks asynchronously;
- By scope: within or outside organisational structures (departments);
- By life cycle length: temporary and permanent;
- By the roles of participants: fixed roles or full interchangeability of all team members.

Characteristics of a high-performing team include an understanding of common goals among team members, assigning appropriate tasks to each member, understanding roles and

responsibilities within the team, involving all team members in daily activities, using appropriate communication methods and a structured approach, effectively allocating time for discussions, identifying and addressing potential problems within the group in a timely manner, and using effective strategies for decision-making within the team (Stratone, Vătămănescu, Treapăt, Rusu, & Vidu, 2022). Each team member brings knowledge, skills, and perspectives that contribute to the success of the group and the organisation, and members understand that no one can have all the information they need to make informed decisions (Krier, 2022). However, in addition to the positive experiences, virtual collaboration has a number of obstacles to effective interaction between team members and their leaders, such as overcoming communication barriers, opportunities to build trust, or maintaining team cohesion. The concept of shared leadership, in which team members interact to achieve a common goal, is discussed as an approach to addressing leadership challenges in the context of virtual teams (Mayer, Sivatheerthan, Mütze-Niewöhner, & Nitsch, 2023).

When the concept of shared leadership works, employees work together to solve problems and define the work to be done, interact and coordinate actions to achieve goals. People focus on the work itself rather than on the person has the authority to do it (Jackson, 2000).

There are a number of components and factors that affect the success and effectiveness of the application of the shared leadership concept. Shared leadership includes four components: shared task performance, mutual skill development, decentralized interaction among staff, and emotional support (Kocolowski, 2010). Carson J. B., Tesluk P. E., and Marrone J. A. (2007) argued that the common team environment, which consists of three elements: shared purpose, social support, and voice, fosters the development of shared leadership.

Shared leadership in a team is evidenced by the following indicators: the team effectively resolves differences to reach agreement, work is distributed in a way that maximises the unique skills of its members, information about the organisation and its strategy is freely shared, and the team collaborates to identify opportunities to improve productivity and efficiency (Walker, Smither, & Waldman, 2008).

An important issue that cannot be ignored when working remotely is planning to return to offline work after the normalization of the security situation. After all, many organizational changes are taking place: service information is being moved online, communication rules are changing significantly, etc. This implies separate preparation for restoring the offline mode using other work algorithms.

Objective. Thus, the crisis situation required the search for other approaches to library management in order to ensure its full-fledged operation. The choice of approach was significantly influenced by the new working conditions and updated work tasks. In the course of implementation, factors affecting the effectiveness of the application of new approaches were analysed. Each information request is fulfilled in a "librarian-user" pair, so the capabilities of users have also become one of the most important factors. It should be noted that in the first months of the war, most users (students and staff) felt the negative impact of critical external circumstances and had limited technological conditions for requests and communication. The purpose of the article is to define an approach to managing a university library in the crisis conditions of martial law and to identify the factors that affect the quality of implementing this approach.

Methods

To understand the changes in the organisation's management processes that occur when the conditions of its functioning are transformed under the influence of external or internal factors, the method of analysis of scientific publications was used.

The analysis of publications on the best world practices and the latest research in the field of approaches to organising work in a remote mode was carried out in the information and analytical system Scopus.

Based on scientific publications, the concepts of "shared leadership", "virtual teams", "information and communication technologies", "remote management", "teamwork", "remote work" were analysed.

The study used empirical methods to test the effectiveness of the approach.

The reliability of the results is confirmed by the STL report for 2022, which describes changes in the main areas of work and an increase in the amount of work performed remotely ("Zvit pro robotu", 2023). For the first six months of 2023, we have received 4 official acknowledgments in the name of the scientific and technical library from other organizations, which is a good indicator of the quality of work.

Results and Discussion

A significant number of scientific publications describe successful management approaches that have been applied in various situations (Obenauf, 2021; Krier, 2022; Kocolowski, 2010; Noto, Marisca, & Barresi, 2023; Kolesnykova, 2023). We believe that when choosing an approach, it is important to consider the reasons for switching to a remote (or mixed) mode and the expected result. Let us analyse the common reasons for switching to remote work in different teams and what results were expected.

The reasons can be divided into internal (formed within the team) and external (formed outside the team) factors of influence (Fig. 1). Internal factors include:

- The need to establish flexible working hours;
- Improvement of working conditions;
- Ensuring the safety of staff and users;
- Inaccessibility of workplaces;
- The desire to set up/resume work in new external conditions.

External factors include:

- Globalisation and development of international cooperation;
- Measures to promote the organisation's competitiveness;
- Spread of epidemics and pandemics;
- Man-made or natural disasters;
- Martial law and the threat of armed aggression.

Internal and external factors may be critical (e.g., martial law and the threat of armed aggression) or not critical (e.g., the need to establish flexible working hours) in terms of their impact on the organisation.

Critical factors are those that will stop the work process if there is no urgent response to them, while non-critical factors are those that do not require significant changes in the mode and organisation of processes and management to maintain the work. Critical factors prompt the management to implement urgent unconditional changes in the mode of operation and quickly find new approaches to process management in the organisation. The work of Ukrainian universities close to the combat zone has fallen under the influence of critical factors.

The primary expected result in the event of critical factors is the restoration of normal performance indicators, and in the event of non-critical factors - a qualitative improvement in performance indicators. In other words, the response to critical factors should be implemented through immediate and coordinated actions of managers and employees. Differences in the general

algorithm of actions regarding the stages of movement towards the expected performance result when implementing changes in work as a response to different groups of factors are shown in Fig. 1.

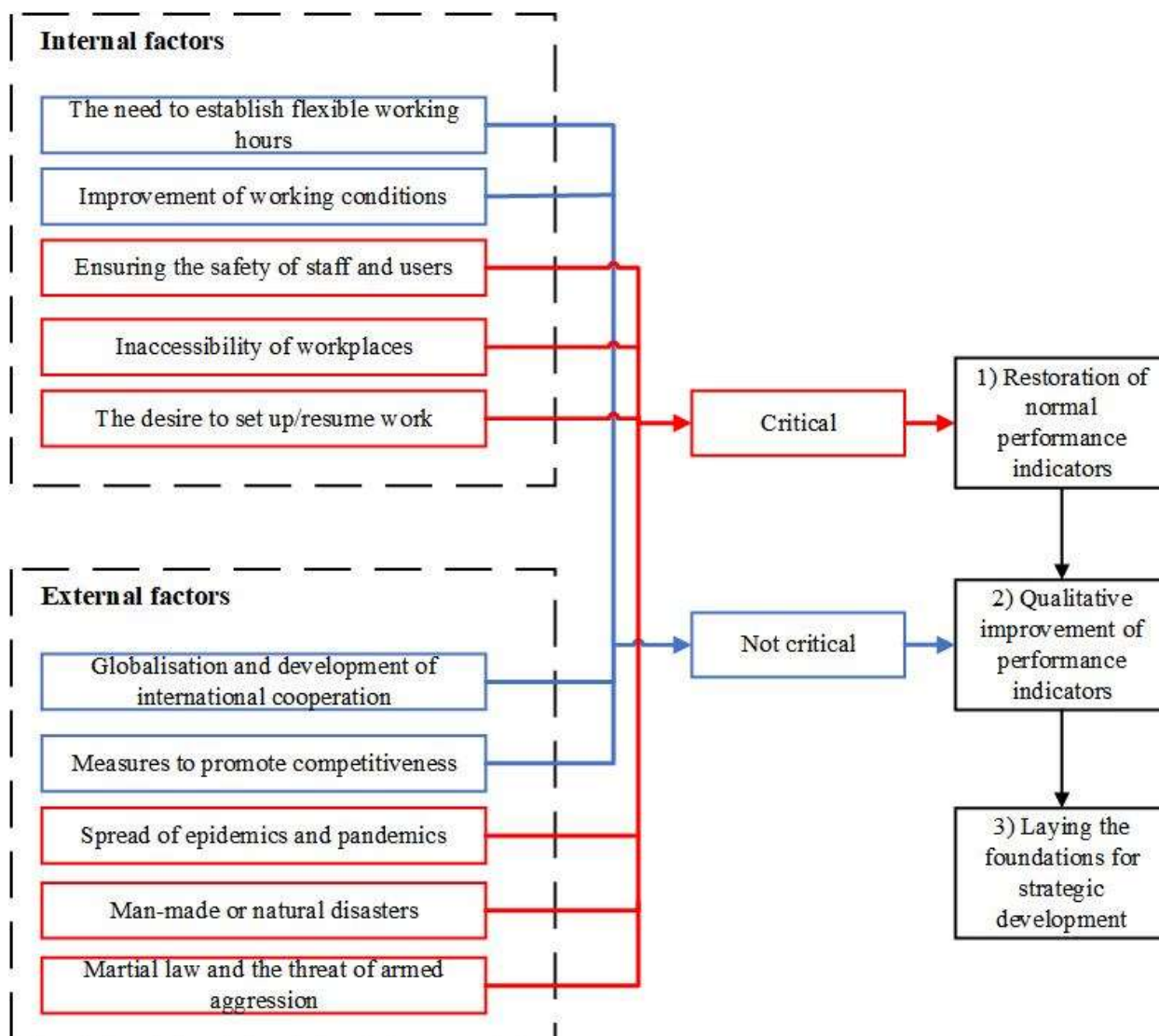


Fig. 1. Proposed Classification of Influence Factors and Algorithm of Actions Regarding the Stages of Movement towards the Expected Result

We consider the following to be the logical sequence of the stages of movement towards the expected result when making changes in work under the influence of critical factors: 1) restoration of normal performance indicators; 2) qualitative improvement of performance indicators; 3) laying the foundations for strategic development.

That is, for the library of NTU "KhPI", the transition to remote work was the only condition under which it was possible to restore the unit to normal performance.

At the initial **first stage**, we identified employees with technological capabilities - hardware and software for communication and access to internal and external information resources of the library. As of April 2022, 58% of employees had such capabilities and 83% of employees as of April 2023. New communication algorithms were developed, priority areas of

work were gradually restored (individual consultations by the most accessible means, development of own information resources, provision of remote access and expansion of the range of external information resources), and those responsible for these areas were appointed.

In order to facilitate and speed up communication, the logical step was to create teams to cover some important areas of work and informally delegate leadership roles in these teams, depending on the tasks and competencies of the team members. It is important for a manager to have trust in staff and to allow people to do their job (Obenauf, 2021).

The manager applied the concept of shared leadership mainly on an intuitive level, driven by the need to organise the library's work in a critical and atypical situation. The transition from the traditional concept of leadership to shared leadership was a key decision. Traditional ideas of leadership focus on the person in a leadership position and the behaviours and actions she or he takes to encourage others to follow the leader's direction and fulfil the leader's vision. Shared leadership empowered staff to make decisions within their area of responsibility, assuming they had a deep understanding of the library's values, enabling them to make effective decisions (Krier, 2022). This ensured the resumption of work in the priority areas in a virtual environment.

At the **second stage**, the areas of work were updated:

- Partial restoration of offline services using the traditional collection;
- Information support for education and science (expansion of the list of available information resources, seminars, scientific and practical conferences);
- Publication support;
- Formation of a virtuous academic environment (training in academic culture and educational activities, formation of an archive of diploma works);
- Participation in publishing activities (support for the work of editorial offices (periodicals and books) and filling the official websites of journals);
- Support of a positive scientific brand of each author of NTU "KhPI";
- Development of international cooperation.

To implement the updated list of tasks, different types of teams were created (Bell & Kozłowski, 2002). Most often, tasks are performed in an asynchronous mode, when everyone performs a personal task according to their own schedule, according to the possibilities of using information and communication technologies. Synchronous mode in real time is used when conducting events in video conferencing mode (meetings, trainings, etc.).

In 2022-2023, new virtual units were established outside the structural units on a permanent basis: the Information and Resource Centre "Without Barriers" (Hlavcheva, Paliei, & Novosolova, 2023) and the Publication Support Centre (Hlavcheva, Odnovolykova, Bykova, & Breslavets, 2023). Employees from various departments are constantly involved in the work of the centres, and, if necessary, other staff members are involved on an ad hoc and temporary basis.

This has made it possible to systematically and comprehensively address a significant number of urgent tasks to provide services to users. In addition, through the combined use of fixed roles or full interchangeability of all team members, it was possible to expand the list of services available to users in parallel. For example, a set of tasks (corresponding to services) was formed on the pages of the virtual units of the Information and Resource Centre "Without Barriers" (Scientific and Technical Library of the National Technical University "Kharkiv Polytechnic Institute", 2022) and the Publication Support Centre (Scientific and Technical Library of the National Technical University "Kharkiv Polytechnic Institute", 2023). It does not matter who the user applies to - the specialists of the Centres fulfil the request by communicating with each other. This combination demonstrates a systematic approach to service provision and provides a synergistic effect. This is confirmed by the study, which notes that the most frequently mentioned

benefit gained from the shared leadership model is the synergy and experience gained from the shared leadership model (Kocolowski, 2010).

The second stage is more extended in time, and the library of NTU "KhPI" is currently at this stage, but it should become the basis for the third stage - the formation of the foundations of strategic development within the new external and internal factors of the organization of library's work. At the same time, it should be borne in mind that returning from full remote work to offline mode can be a rather complicated process and requires special attention and planning (Noto et al., 2023).

An important issue for the successful implementation of any new management approach is the creation of appropriate conditions in the team. The articles (Jackson, 2000; Kocolowski, 2010; Carson et al., 2007; Walker et al., 2008) describe in detail what factors make the implementation successful: overcoming communication barriers, trust, respect, team cohesion, openness, etc. Based on the empirical research, we can identify the main groups of factors for the successful implementation of shared leadership in remote work: moral and psychological (trust and responsibility, mutual support, etc.) and adaptive (no obstacles to mastering and using software and hardware). We consider these groups of factors to be the main ones because remote work is based on the use of information and communication technologies as the main communication channel. Information and communication technologies are not an equivalent substitute for face-to-face communication and may not be sufficient to build trust, mutual understanding, provide and interpret feedback, avoid conflicts, and develop team cohesion (Baralou & Dionysiou, 2021).

Transition and remote work in the crisis conditions of martial law is significantly different from these processes in peacetime. The biggest difference is in the processes that take place in the work team. The danger of martial law motivates employees to help each other and to reach an understanding and agreement. And the extreme conditions associated with power and communication outages require discipline and promote motivation.

Conclusions

Thus, we believe that shared leadership is the best approach to organising the virtual work of a library in the crisis conditions of martial law.

Based on practical experience, we can identify two main groups of factors for the successful implementation of shared leadership: moral-psychological and adaptive. They are equally important when organising remote work in any team in crisis conditions. These characteristics have a qualitative impact on the result of the application of shared leadership. It should be noted that the society is developing and the administration of the scientific and technical library continues to study the best practices in organising the work of the university library, which can be adapted and effectively applied in working with users in the face of dynamic changes in working conditions.

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ODNOVOLYKOVA O. V.

Науково-технічна бібліотека, Національний технічний університет «Харківський політехнічний інститут» (Харків, Україна), e-mail: olena.odnovolikova@khpi.edu.ua, ORCID 0000-0001-9503-7161

HLAVCHEVA YU. M.

Науково-технічна бібліотека, Національний технічний університет «Харківський політехнічний інститут» (Харків, Україна), e-mail: yuliia.hlavcheva@khpi.edu.ua, ORCID 0000-0001-7991-5411

Спільне лідерство, як основа управління бібліотекою університету в кризових умовах воєнного стану

Мета. Метою публікації є визначення ефективного підходу до управління бібліотекою університету в кризових умовах воєнного стану та виявлення факторів, що впливають на якість застосування цього підходу. З початком повномасштабного вторгнення відбулися критичні зміни в реальних умовах праці на території прифронтової частини України. Відновлення роботи в університеті та всіх підрозділах вимагало впровадження нових підходів в управлінні. Основною доступною формою роботи, яка гарантувала безпеку всім учасникам освітньо-наукового процесу стала дистанційна форма. **Методика.** Проведено аналіз наукових публікацій за темою дослідження. В доповіді розглядається підхід на основі концепції спільного лідерства до організації віртуальної роботи бібліотеки університету. На основі емпіричного методу визначено та обгрунтовано його оптимальність при організації роботи співробітників у віртуальному середовищі. **Результати.** Найбільшу дієвість продемонструвало використання концепції спільного лідерства. Описано умови ефективного застосування підходу до управління з використанням спільного лідерства. **Висновки.** Таким чином, вважаємо, що спільне лідерство може стати оптимальним підходом до організації віртуальної роботи бібліотеки в кризових умовах воєнного стану. На основі практичного досвіду виділено дві основні групи факторів для успішної реалізації спільного лідерства.

Ключові слова: спільне лідерство; управління; дистанційна робота, віртуальні колективи, командна робота

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GALORA H. M. S. C.

National Economic and Development Authority (Pasig City, Philippines),
e-mail: mapalarin@gmail.com, ORCID 0009-0004-8590-4961

Safeguarding Filipiniana Materials: Recognizing and Prioritizing Risks in Transporting, Moving or Relocating Library, Archives, and Museum Collections

Objective. Libraries, archives, and museums are vital for learning and culture. Disasters threaten both their buildings and collections. Safety is paramount during crises, but safeguarding collections is also essential. The study investigated why five Filipiniana institutions – Filipinas Heritage Library, Lopez Museum and Library, National Archives of the Philippines, National Library of the Philippines, and University of the Philippines Diliman – Main Library – moved their collections and managed risks. **Methods.** The researcher used qualitative and quantitative methods, assessing risks based on probability and impact. **Results.** The findings revealed motivations for moving collections, either extrinsic (like renovations) or intrinsic (pride). It highlighted the importance of recognizing and prioritizing risks, even low-level ones, to protect collections and the institutions' core motivations. **Conclusion.** Failure to mitigate risks may lead to losses and damage, impacting these institutions' core motivations.

Keywords: moving collections; Filipiniana collections; risk assessment; relocation; motivation

Introduction

Libraries, museums, and archives hold the keys to our shared human knowledge and history. They are the sanctuaries of wisdom, the custodians of cultural treasures, and the guardians of national heritage. These institutions, however, face an array of challenges that threaten their collections, from natural disasters like typhoons and floods to human-made risks like fires and theft. This study delves into the motivations behind the relocation of collections from Filipiniana institutions, such as libraries, archives, and museums, as well as the risks involved.

Several institutions in the Philippines, both private and public, maintain Filipiniana collections such as books, maps, periodicals, artworks, ceramics, etc. This study uses the term Filipiniana as anything and everything about the Philippines, published in the Philippines, published by the Filipinos, created by the Filipinos, and about the Philippines that are in paper-based materials, photographic materials, paintings in canvas or wood, archaeological objects like ceramics and stones, and other objects such as metal, glass, etc.

The five Filipiniana institutions included in this study are: (1) National Archives of the Philippines (NAP) - relocated its collections to facilitate the retrofitting of its previous space, with a particular focus on safeguarding Spanish collections dating back to the 16th century; (2) National Library of the Philippines (NLP) – the construction of their new building drove the relocation efforts for the Filipiniana Division of NLP; (3) University of the Philippines Diliman – Main Library (UPDML) – relocated its collections due to the construction of a new building, with key insights provided by the University Archives Division and staff members; (4) Filipinas Heritage Library (FHL) move was motivated by both intrinsic and extrinsic factors, including a renovation to enhance access and space utilization, as well as the desire to share their collections with future users, and (5) Lopez Museum and Library (LML) – move was prompted by the deterioration of the Benpres building, necessitating the protection of their valuable collections. Key insights were provided by the Head Librarian, Assistant Librarian, and Registrar/Museum Assistant.

The importance of safeguarding cultural heritage has been well-documented, with studies highlighting the significance of risk management. According to Lagrama (2011), the field of cultural heritage has always valued the preservation and conservation of its materials: moveable

and immovable, tangible and intangible. Risk will always be a factor in any undertaking, so it is essential to have a disaster management plan. She also presented and analyzed the risks to the collections of the college libraries and main library of the University of the Philippines Diliman, as well as in selected government libraries in the periphery of the campus. She used semi-quantitative risk analysis to place numerical values in some data she needed. In her study, she found out that the major threats to library collections are fire and water. Disaster preparedness is vital, with Estrella (2013) emphasizing the need to raise awareness and preparedness among staff to minimize potential damage during calamities.

Wood and Duffy (2016) underscore the diverse risks libraries face, including natural disasters and human-made threats, shedding light on effective mitigation strategies. Hasenay and Krtalic (2010) emphasize sustainable measures for safeguarding collections, including comprehensive disaster management policies and public awareness.

The physical relocation of collections is a routine task influenced by factors like circulation and maintenance. Planning and coordination are crucial, as Gohn (2015) emphasizes, ensuring a successful move. Lindsay's (2017) case study reveals the importance of systematic organization and teamwork during relocations, while security risks, as noted by McDonald (1994), remain a significant concern. Disruption of security can result in losses, thefts, or damages to collections, highlighting the need for careful planning and oversight during the move.

In congruence with the above studies, especially the studies of Lagrama (2011) and Estrella (2013), this study also used semi-quantitative risk analysis to identify the risks and create measures to lessen the impact of the identified risks in moving the library, archive, and museum collections. Most of the abovementioned studies talked about the importance of creating a disaster management plan, including devising strategies to preserve and conserve the collections. To achieve the same success as the presented literatures, this study adopts the gained strategies and ways on how to properly move the collection from planning, to organizing, to personnel management, and so forth.

Objective. With the evident value of the Filipiniana collections and the importance of mitigating risks in moving them, this study explores the various motivations of Filipiniana institutions for moving their library, archives, and museum collections, and the perceived risks, and challenges of moving the collections, and the methods done to mitigate them.

The objectives of the study are the following: to identify the motivations of the Filipiniana institutions for moving their collections and the risks that they have encountered, to know the measurements/procedures that they have made to address the risks, to recognize the other risks that may have affected the collections, and to recommend practices for institutions that plan to move or relocate their collections.

Methods

This study aims to address the intricate challenges related to the relocation of library, archive, and museum collections, with a particular focus on Filipiniana institutions. By employing a semi-quantitative risk analysis approach and integrating qualitative and quantitative methods, this research endeavors to shed light on the motivations, risks, and challenges associated with this critical process. The protection and preservation of cultural and historical artifacts are paramount in a world filled with uncertainties.

The study's methodology consists of two phases. The first phase involves qualitative exploration through in-depth interviews with personnel from selected Filipiniana institutions. These interviews provide valuable insights into their motivations for relocation, disaster

preparedness, and the strategies involved in moving collections. The scope of the movement process encompasses planning, preparation, packing, storing, transporting, unpacking, setting up, public engagement, and meticulous documentation.

The second phase employs a semi-quantitative approach by utilizing a survey questionnaire based on Lagrama's work in 2011, with some modifications to suit the research context. Respondents are asked to assess the probability and effect of potential hazards when relocating library, archive, and museum collections. The below scales used for probability and effect are calibrated to help quantify the severity of risks.

Probability:

- 1 – Rare (1 in 5 years);
- 2 – Sporadic (1 in 3 years);
- 3 – Unusual (1 in a year);
- 4 – Likely (happens every couple of months);
- 5 – Almost certain (1 per week / month).

Effect:

- 1 – Insignificant (loss of <1 working day / no damage to the collection / no injuries);
- 2 – Low (loss of <2 working days / up to 5% damage to the collection / no injuries);
- 3 – High (loss of <3 working days / up to 10% damage to the collection / no injuries);
- 4 – Severe (loss of <4 working days / up to 25% damage to the collection / major injuries);
- 5 – Catastrophic (loss of 5+ working days / 50% or more damage to the collection / major injuries and fatalities).

The risk rating for each hazard is computed using Brokerhof's formula: Risk = Probability x Effect (Brokerhof, 2006).

This formula facilitated the calculation of the level of severity for each risk. To categorize these risks effectively, the study adopted risk rankings inspired by Lagrama's work in 2011, designating risks as high, significant, moderate, or low.

Table 1

Risk Rankings

High	18.75–25.00	Risk that must be eliminated or significantly reduced
Significant	12.50–18.74	Risk that needs to be monitored; a mitigation plan must be in place to reduce risk
Moderate	6.25–12.49	Risk that needs to be monitored; but less rigorously and are less urgent in nature
Low	1.00–6.24	Demand less attention, but not to be totally ignored

The study includes 5 heads, 1 consultant, and 17 staff members that were involved in the moving or relocating of collections of the five Filipiniana Institutions such as the Filipinas Heritage Library (FHL), Lopez Museum and Library (LML), National Archives of the Philippines (NAP), National Library of the Philippines (NLP), and University of the Philippines Diliman – Main Library (UPDML). The study maintains ethical standards, with informed consent obtained from the participants.

Results and Discussions

Motivations of the Institutions in Moving Filipiniana Collections

Motivation plays a crucial role in the success of any endeavor, and the relocation of Filipiniana collections is no exception. This study explored two fundamental types of motivation: intrinsic and extrinsic motivations.

Intrinsic Motivation (IM): This type refers to behavior that is inherently satisfying or enjoyable. The intrinsic motivations that they mentioned are being glad, having pride in it; enjoyment, and happiness. As the NAP respondent said, “We are glad that we will now have our own home for our national treasures” (G. Gomez, personal communication, March 3, 2020). For the longest time, their archives were housed in the National Library of the Philippines. The NAP respondent also mentioned having pride in it. Enjoyment was mentioned by the Head Librarian of the Lopez Museum and Library “Of course, we enjoyed moving our collections because our hands are the same hands that wrapped collections such as a hundred-year-old artwork and a hundred-year-old book and that we (were) entrusted to wrap and pack precious collections like the paintings of Luna, the original letters of Rizal, and ceramics found in the 19th century” (M. Servida, personal communication, March 9, 2020). The Head Librarian also specified happiness as an intrinsic motivation noting that their institution can now provide more seats, better access, and state-of-the-art facilities and services. They also now have more freedom to maximize the physical space in their new location. Similar to what has been discussed in Denovan and Abott (2007), the respondents’ motivation in moving their collection was thinking that the collection would be enjoyed by future users. They were not only motivated by their goal of opening the new building by inviting collections to show, but also by the chance of being able to provide greater browsing experiences and use of collections to patrons and future users, emphasizing that print collections are still relevant to 21st-century researchers and future generations.

Extrinsic Motivation (EM): Extrinsic motivation, on the other hand, is linked to goals or outcomes that are separable from the action itself.

Table 2

Extrinsic Motivations of Filipiniana Institutions in Moving the Collections

Institution	Extrinsic Motivation
Filipinas Heritage and Library (FHL)	Renovation
Lopez Museum and Library (LML)	Development of new house/building
National Archives of the Philippines (NAP)	“ <i>Obligado</i> ” [Obligated] (G. Gomez, personal interview, March 3, 2020)
National Library of the Philippines (NLP)	Construction; Major rehabilitation and renovation
University of the Philippines Diliman – Main Library (UPD-ML)	Renovation/Retrofitting

These motivations are fundamental to risk management and mitigation during collection relocation, as they can influence decision-making, drive personnel performance, and ensure the safety of the collections and individuals involved.

Collections

All five (5) Filipiniana institutions included in this study have collections of paper-based and photographic materials. Only three (3) Filipiniana institutions have paintings and these are the Lopez Museum and Library, the National Library of the Philippines, and the University of the Philippines Diliman – Main Library. Two (2) Filipiniana institutions such as the Lopez Museum and Library and the University of the Philippine Diliman – Main Library have archeological objects collections and four (4) of the Filipiniana institutions except for the National Archives of the Philippines have other museum objects.

Locations

The location of the move of five Filipiniana institutions include the original location, the interim/permanent location, the transportation vehicle used, and the problems/concerns encountered in moving their collection from the original to the interim/permanent location. In this study, two (2) Filipiniana institutions moved within their original location and also used offsite storage; these are the Filipinas Heritage Library and the National Library of the Philippines. The Filipinas Heritage Library (FHL) moved most of its collections that are non-rare to the same building where it was originally located at the Ayala Museum, Makati, but to a different floor. Only the rare collections were moved to the offsite storage located also in the Makati area. The FHL decided to have off-site storage because the rare collections must be stored in a place with good environmental conditions and the interim location within their building does not have temperature and humidity control capabilities. During the interview, the Manager said that they hired a van to transport their rare collection to the offsite storage in Makati Area. With regard to moving their collection to the same building but on a different floor, one of the problems that the manager mentioned was the use of the elevator. Because it was the same regular elevator used by the employees and visitors in the building, they need to wait for the availability of the elevator for the movers to use it. Likewise, if the movers are using the elevator, employees and visitors who need the elevator will also have to wait. This caused traffic in the elevator use.

According to the respondent, the National Library of the Philippines (NLP) print materials were only moved within the building except for the artworks (paintings, sculptures, woods) that were originally located on the 3rd floor of the NLP building. NLP artworks were moved to the National Museum of the Philippines (NMP) and are now on loan. The NMP was in-charge of the packing and transporting of the artworks and they used trucks as their vehicle. In moving other collections within the NLP building, the problem that they encountered was the number of times they need to move their collection within the building. Each time renovation and retrofitting take place in the NLP building, they will need to move their collections from the interim storage to another free space within the building. Moving their collections several times means that they have to touch and pack the collections more often. One of the respondents said that the handling of the collections damages the book covers and binding especially of their fragile and rare collections.

The Lopez Museum and Library (LML) was originally located at the Benpres Building, in San Antonio, Pasig City.

When construction of their permanent home began, the LML collection was transferred to the interim site on Aurora Blvd., Ermitano, San Juan City. The two locations are about 6.5 km away from each other and because of the distance, the LML had to hire trucking to transport their collections. They related having encountered a problem in relation to the location and hiring transport vehicle for their trucking: the environmental concerns while in transit. Based on the interview, the LML had initially thought of using trucks that are temperature- and relative

humidity-controlled. However, due to budgetary concerns, they had to minimize the use of such trucks to only the high-risk objects which comprise only about 10% of their collection. Another problem that they encountered was the difficulty in loading and unloading pallets. The respondent said that there were no loading bays in place and pallet trucks were expensive to rent or procure.

The new National Archives of the Philippines building is now located on the Ground and 6th Floors of the PPL Building on U.N. Avenue, Paco, Manila. For the longest time, the NAP was housed at the National Library of the Philippines in Kalaw, Manila. They transferred to a new building when the NLP needed to renovate and retrofit their building. According to the respondent, in 2019, the NAP bought the PPL Building in Paco, Manila to be their permanent home because they were obligated to leave the National Library of the Philippines. The respondent also shared that the PPL Building was not yet designed to be used as an archive building, so they had to repurpose the rooms of the building. The rooms served as their offices. They removed the partitions to put the shelves for the archive collections. In the future, the NAP planned to relocate their offices in Port Area and U.N. to the PPL Building in Paco, Manila.

During their transfer from Kalaw to Paco, they used a truck to transport their collection. Since the collections that were transferred are national and cultural treasures, a guard and a regular employee were made to convoy during the trucking. The respondent also related that the lengthy distance between Kalaw and Paco created problems with the transfer such as traffic and obstructions on the road. The collections were on the road for hours.

The University of the Philippines Diliman – Main Library (UPDML) was located at Gonzalez Hall in UP Diliman, Quezon City. Their collections were transferred to the three (3) interim storages located in separate buildings in UP Diliman because of the renovation and retrofitting of Gonzalez Hall. The interim storages are less than 1 km radius of Gonzalez Hall. They started to transfer their collection in 2019.

Although the UPDML had the shortest distance from the three Filipiniana institutions that moved their collections outside their original location, they are the ones who experienced water damage due to inclement weather while collections were in the truck. During the interview, the respondent shared that they started moving their collections in September 2019, but in March 2020, when the lockdown was announced due to the Covid-19 Pandemic, their move was also stopped. During the lockdown, some of the personnel were able to continue visiting the interim locations to check the conditions of the collections because they live within the University of the Philippines Diliman. It became their advantage compared to the other institutions with interim locations that were far from the original location and the personnel involved in moving their collections live far as well. The respondent also shared that some of their personnel were able to visit the locations only by walking. Lastly, the respondent also shared that one of the problems/concerns that they encountered in relation to the location was the unavailability of transportation. To countermeasure this problem, the respondent shared that at times, they used their personal vehicles to transport their collection.

It was revealed that the interim location has a great impact on the movement of collections and risks may occur because of this. One of the risks was the requirement for truck to be equipped with features that can control the fluctuating temperatures and relative humidity, especially for the high-risk collections. According to Adcock, Varlamoff, and Kremp (1998), the effect of fluctuating temperature and relative humidity on collections are (a) condensation and possibly resulting in mold and other problems excess moisture causes, (b) may produce minimal stress in materials that are free to expand and contract, (c) affect the dimensions and mechanical properties of organic materials and can lead to damage if they occur over a short period of time, and (d) visible damage can take the form of flaking inks, warped covers on books, and cracked emulsion on photographs. Another problem that the respondent mentioned was the traffic. Traffic may

threaten the collection because, according to Adcock, Varlamoff, and Kremp (1998), factories and traffics cause dust and gaseous pollutants. Pollutants such as sulphur dioxide, hydrogen sulphide, and nitrogen dioxide combine with moisture in the air and form acids that can attack and damage library material.

Personnel involved in moving collections

The study reveals the varying approaches of these institutions when it comes to personnel involved in moving collections. The Filipinas Heritage Library relied on maintenance and janitors from their service provider, hiring additional help as needed, while the Lopez Museum and Library enlisted both regular and project-based personnel from the Eugenio Lopez Foundation, along with hired movers. In contrast, the National Archives of the Philippines hired 15 contractual personnel, and the National Library of the Philippines employed job orders. The University of the Philippines Diliman – Main Library utilized a combination of library personnel for packing and contractual staff for transportation.

The respondents from these institutions demonstrated differing levels of experience in moving collections. The Filipinas Heritage Library had minimal experience among their staff, while the Lopez Museum and Library had some personnel with prior moving experience, albeit with different processes. The National Archives of the Philippines assigned guards for security and four regular employees to receive and arrange collections. The National Library of the Philippines had librarians and section heads leading the planning and implementation of the move, with the National Museum of the Philippines assisting with artworks. The University of the Philippines Diliman – Main Library used both non-supervisory and supervisory staff for various tasks related to moving collections.

Despite varied levels of experience among personnel, the study found that the perceived risks of physical damage, vandalism, and theft during the collection moves were not rated as significant or high. Proper supervision, knowledge sharing, and in-house training for third-party service providers could mitigate these risks.

The personnel involved in moving collections can be categorized into three groups: (1) *Personnel from the Institutions*, including librarians, consultants, management, and building administrators, who oversee the project and ensure building and storage security, (2) *Support Staff*, such as janitors, building maintenance support, and guards, who handle the packing, unpacking, and security of the collections, and (3) *Third-party service providers*, including packers, movers, transport, and drivers.

Process of Moving

Regarding the process of moving or relocating collections, all five institutions indicated that they did not use international or local guidelines or standards as their primary references. The Lopez Museum and Library was the only institution with existing guidelines for handling different types of collections, which they used as a reference. These guidelines covered various aspects, including proper handling, packing, storage, environmental conditions, and equipment use.

The Lopez Museum and Library outlined their process, which included planning, inventory, packing, storing, transporting, unpacking, and shelving. They classified objects into three categories, determining the storage, packing, and trucking requirements. They also consulted with staff members to assess needs and costs. The Filipinas Heritage Library, on the other hand, based their move on the identification of materials to be relocated and planning to accommodate ongoing activities and renovations.

The National Archives of the Philippines used plastic bins, boxes, and sealed cabinets for packing archival collections, ensuring that boxes were not overloaded. They created a transfer procedure policy to guide the move, drawing from their own experiences and enhancing their strategy.

The National Library of the Philippines developed written guidelines for their systems and procedures and actively modified them based on their experiences. They used various protective materials for different types of collections, including plastic boxes for fragile items and archival boxes for rare collections. Detailed documentation of their processes helped monitor the proper handling of collections and protective materials.

The University of the Philippines Diliman – Main Library did not refer to any guidelines or standards but formed a committee to manage the move. Their process included planning, identification, packing, labeling, transportation, unpacking, shelving, and documentation. The library staff went through extensive planning and had to adapt to challenges related to interim storage, transportation, and shifting university administration. They documented their entire process and developed guidelines based on their knowledge and experiences.

The study revealed varying practices in personnel involvement and processes for moving collections among the five Filipiniana institutions. While some institutions had existing guidelines, others relied on their own experiences and knowledge to execute successful moves. Proper planning, documentation, and training played pivotal roles in mitigating risks and ensuring the safe relocation of valuable collections.

Perceived Risk/Risk Assessment (Hazards and Risks)

In the context of moving collections within Filipiniana institutions, it is essential to recognize and address the potential hazards and risks associated with the process, even though the primary motivations for these moves include renovation, development of new facilities, construction, and restoration to enhance access and services. The successful relocation of collections should not only focus on completing the logistical aspects but also on ensuring the safety of both the collections and the personnel involved.

The study considered various types of collections:

- a) paper-based materials, including books, periodicals, documents, records, newspaper clippings, maps, and paintings on paper;
- b) photographic materials, such as negatives, prints, and microfilms;
- c) paintings on canvas and wood;
- d) archaeological objects, such as ceramics and stones;
- e) other museum objects, including metals and glass.

For paper-based materials, the top three hazards with the highest probability of occurrence included dissociation, physical damage, and pollutants (all rated at 2.5), and mold outbreaks (rated at 3.6). Notably, these hazards are all caused by human factors rather than natural disasters or incidents. On the other hand, the top three hazards with the most significant impact on paper-based materials due to the move were fire (rated at 4.11), building damage or collapse (rated at 3.55), and mold flooding (rated at 3.27). While these six hazards, including flooding, mold outbreaks, dissociation, insect/vermin infestation, storm/typhoon damage, and physical damage, are moderate risks that require rigorous monitoring, all other remaining risks were categorized as low-risk, demanding less immediate attention but still warranting consideration. Notably, none of the hazards were classified as significant or high-risk.

For photographic materials, the top three hazards by probability of occurrence are dissociation (3), power outage (2.4), and flooding and physical damage (both at 2.33), all

stemming from human factors rather than natural disasters. The three most impactful hazards on photographic materials during relocation are sewage leaks (3.71), storm/typhoon damage and fire (both at 3.22), and flooding (3.11). Five hazards were classified as moderate risks, including flooding, physical damage, storm/typhoon damage, sewage leaks, and dissociation. While no significant or high-risk hazards were identified, recognizing potential threats to photographic collections is essential for taking appropriate preventive measures. Both paper-based and photographic materials share similar top hazards due to their inherent fragility and composite nature. Understanding collection types and potential risks is crucial for achieving institutional goals and applying effective mitigation measures.

For paintings, the top three hazards by probability of occurrence are physical damage (2.83), power outage (2.71), and excessive force and flooding (both at 2.67), all originating from human factors rather than natural disasters. The most impactful hazards on paintings during relocation are excessive force, lack of restraint on transit, and building damage/collapse (all at 3.33), followed by fundamental problems (3.17), and mold outbreaks, chemical damage, fire, and theft (all at 3). Six hazards were classified as moderate risks, requiring monitoring but being less urgent. No significant or high-risk hazards were identified. Proper handling and environmental control during transit are critical for ensuring the safety of paintings.

Archaeological objects, which include ceramics, stones, and rocks, are less susceptible to damage due to their stable materials. The top three hazards by probability of occurrence for these objects are power outage (2.4), lack of restraint on transit (2.29), and excessive force and pollutants (both at 2.2), all arising from human factors. The most impactful hazards for archaeological objects are building damage/collapse (3.8), excessive force and storm/typhoon damage (both at 3), and excessive chemical damage and fire (both at 2.6). Only excessive force and storm/typhoon damage are considered moderate risks, while the remaining hazards are at low-risk levels. Although archaeological objects are more stable than other collections, mitigation measures should be in place to reduce potential damage, particularly from storm-related factors.

Other museum objects, such as metals and glass, face hazards related to power outage (2.56), excessive force and flooding (both at 2.25), and dissociation and pollutants (both at 2.22), all originating from human factors. The most impactful hazards are building damage/collapse (3.5), fire (3.38), and excessive force (3.25), with excessive force being the only moderate risk. The remaining hazards are at low-risk levels. Proper packaging, fittings, room arrangements, and handling can help mitigate the risks posed by excessive force.

While most identified risks are at low-risk levels, it's essential for institutions to recognize and address them to protect their collections and ensure a successful move. Proper planning, environmental control, and transit management can mitigate potential damage and safeguard collections and personnel during relocation. Neglecting these risks can lead to unforeseen consequences, as demonstrated by the National Archives of the Philippines' experience with a fire incident post-move. Proactive risk assessment and mitigation measures are crucial for a successful and safe collection relocation.

Risk Encountered

During interviews with the respondents from various Filipiniana institutions, several common risks were identified when moving their collections to new locations. The major risks included dissociation, physical damage, and excessive force, and additional health risks to personnel were also acknowledged.

Filipinas Heritage and Library (FHL) reported that they encountered physical damage to their collections due to the inherent fragility of materials and improper handling, especially with

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oversized books. Dissociation, where objects were misplaced or not adequately arranged, was a significant issue. They also faced environmental challenges, as interim storage conditions were not the same as in their previous location, with ongoing construction being a risk. FHL mentioned the possibility of collection loss, even with security measures in place. Health risks to personnel included minor injuries, fatigue, and overtime work due to the move.

The Lopez Museum and Library (LML) experienced dissociation caused by maintenance personnel, who were not librarians, handling packing and faced space limitations, making it difficult to access collections. They reported physical damage to paper-based materials, a mold outbreak, and environmental issues during transit. Loading and unloading of pallets were also problematic, as they lacked loading bays or docks, leading to delays and budgetary constraints.

The National Archives of the Philippines (NAP) dealt with traffic and road obstructions due to busy roads during the move, with personnel exposed to health risks, such as lung and bone illnesses, fatigue, and exhaustion. They advocated for hazard pay for the demanding work.

The National Library of the Philippines (NLP) faced dissociation and physical damage issues, particularly for brittle materials. Storage and space allocation were challenging, leading to overcrowded shelves, changes in shelf heights, and dust accumulation due to construction activities.

The University Archives Division of the UP Diliman Main Library (UPDML) experienced physical damage from snapped ropes during lifting and stacking of books, and dissociation was a concern, leading to updated records and collection maps. Health risks to personnel included minor injuries. They also highlighted logistical challenges, underestimation of materials, external factors affecting transportation availability, personnel issues, ongoing business processes, and transfer delays due to COVID-19 lockdowns.

Table 3

Risk Mitigation Strategies

Threats/ Hazards	Risk Mitigation Strategies	Institutions
Building Damage/ Collapse	Inspect the new location and conduct an annual inspection of the building structure/facility.	UPDML
	Conduct regular inspections by the building administrators.	
	Coordinate closely with the building admin/ property manager, safety officer, and security team for preventive maintenance and drills.	FHL
	Respond to damage from the building or other emergency situations.	NLP
Chemical Damage	Have proper storage of chemicals.	FHL
	Coordinate closely with the building admin/ property manager for monitoring and preventive maintenance.	
	Avoid storing dangerous chemicals in the same room/area where the collection is located, secure the storage area of the chemicals.	
	Determine proper storage and use of chemicals/cleaning agents.	NLP

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Collapse of shelving	• Use durable shelves.	UPDML
	• Maintain proper shelving with appropriate placement and number of materials.	FHL
	• Ensure the shelves are securely installed.	NLP
	• Shelves should be secured and solidly braced.	
Dissociation	• Enforce policies/guidelines and proper workflow for metadata management and maintenance of library records.	FHL
	• Make listing and monitoring sheets of the collections.	LML
	• Make sure to supervise the packing of collections if the staff is untrained in packing.	NAP
	• Countercheck the collections, especially the unique numbers.	
	• Number the bins systematically for easy retrieval of collections, especially when it is time to unpack and shelve the collections again.	NLP
	• Manage the number of materials that can be accessed and used.	
	• Keep proper arrangement and labeling of collections.	
	• Survey target location to plan transport and transfer materials accordingly.	UPDML
	• Cascade/communicate to staff the transfer, exact location, and exact materials to be transferred.	
	• Have/create a collection map and update it every time there is movement/transfer.	
Environmental hazards	• Properly plan the transport schedules and routes to minimize periods of exposure to extreme temperatures and RH.	FHL
	• Use appropriate enclosures for packing items for transport.	LML
	• For environmental concerns while in transit, the temporary solution is in the timing of the loading of the trucks. If objects were moved during parts of the day when the heat is not at its peak, then exposure to extreme heat would be reduced. For this scheme to work, the trucks should be loaded only twice a day: first at 8 AM and a second trip between 2 and 3 PM when temperatures are generally lower by 2 to 3°.	
	• Use proper storage or custom-made boxes.	NLP
	• Environmental conditions should be monitored, especially if there are rare books or other collections that may be suffering from vinegar syndrome.	
Excessive force	• Deal only with reputable service providers.	FHL
	• Implement supervision by authorized and trained personnel.	
	• Practice proper handling of materials.	
	• Avoid storing collections in basements, attics, or other locations with high-risk levels and environmental extremes.	NLP

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	• Train personnel to ensure proper handling of materials, including proper packing, labeling, and transport and transfer from original location to temporary sites.	
Extreme hazards	• Deal only with reputable service providers.	FHL
	• Employ supervision by authorized personnel.	
	• Implement strict observance of safety/security measures.	
	• Review the qualifications of service providers.	
Fire	• Install Fire/Smoke Detectors and Fire Sprinklers in every section of the building.	UPDML
	• Strictly prohibit smoking in and around storage areas.	FHL
	• Coordinate closely with the building admin/property manager and security team for monitoring and preventive maintenance.	
	• Ensure availability of fire extinguishers and fire protection equipment.	NLP
	• Keep the storage clean and well-maintained.	
Flooding/Water Damage	• Do not use the basement as a storage area.	UPDML
	• Continuously monitor plumbing and roof.	LML
	• Check the roof for leaks	FHL
	• Coordinate closely with the building admin/property manager for monitoring and preventive maintenance.	
	• Avoid storing items in or near leak-prone areas.	UPDML
	• Provide protection to materials while in transit. • Suspend activities during typhoons/rainy days.	
Fundamental problems	• Deal only with reputable service providers.	FHL
	• Employ supervision by authorized and trained personnel.	LML
	• Practice proper storage and handling of materials.	
	• Use pallets for easier lifting of piles of boxes.	NLP
	• Use a cart/trolley to transport boxes of records or collections.	
Health and safety hazard	• Coordinate closely with the person in-charge of renovation, protocols, and safety protocols for employees. All of these measures should be identified during the planning stage.	FHL
	• Personnel should wear proper clothing, especially if there is ongoing construction in the moving area, for the safety of the personnel.	
	• Safe work programs and standards should be established to ensure that all work can be carried out safely and all the associated risks are managed and mitigated.	LML
	• Include written safety procedures, conduct of training, and installation of safety signage. Remember that the safety of personnel is prime and training is foremost.	
	• Provide guidelines on proper use, care, and maintenance of PPE that protects personnel from potential hazards that they are likely exposed to while performing their tasks.	
	• Ensure the competency of personnel involved in the planning, assessment, and execution of work.	

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	The staff should be more careful in lifting heavy boxes and materials; cutting tapes; and others.	NAP
	Manpower must be considered, especially during the planning period.	NLP
	Providing proper protective safety equipment to moving personnel	UPDML
	Ensure regular breaks so as not to overextend them.	
Insect/Vermin infestation	The pantry should not be near the storage areas.	UPDML
	Instruct the guards and other personnel assigned to the collections to check regularly for the pests like rats, insects, and others and report immediately to the superior.	
	Coordinate closely with the building admin and maintenance personnel for cleaning and pest control.	FHL
	Immediately report an infestation, if any, for appropriate action.	
	Maintain cleanliness in the area.	NLP
	Keep food and drinks away.	
Lack of restraint on transit	Hire professional movers.	UPDML
	Deal only with reputable service providers.	FHL
	Employ supervision by authorized and trained personnel.	
	Practice proper handling of materials.	
	For concerns regarding the difficulty in loading and unloading pallets, trucks equipped with lifters can be rented out for ease of handling.	LML
	Use lifting aids such as trolleys rather than manual lifting.	
	Identify a stable location.	NLP
	Keep bookshelves and cases 2" away from the wall.	
Mold Outbreaks	Use dehumidifiers.	UPDML
	Check environmental monitoring and control system. Humidity and temperature should be kept at acceptable levels.	LML
	For microfilm, regular rewashing and dry cabinets are needed.	
	Add dehumidifiers and UV to kill molds.	
	Fumigation by professionals is recommended.	
	Use air conditioning, dehumidifiers, and thermo hygrometers to maintain and monitor the temperature and humidity in storage areas.	FHL
	Apply immediate conservation treatments, as needed.	
	Monitor the temperature and humidity of areas where the materials are being stored and make adjustments if necessary.	
	Use an exhaust fan if the storage area has no air conditioning.	NAP
	Have proper storage.	NLP
	Avert fluctuations in temperature and relative humidity.	
	Have a proper, cool, and clean environment.	

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	The size and environmental condition of the storage area should be emphasized.	
Physical damage	Deal only with reputable service providers.	FHL
	Employ supervision by authorized and trained personnel.	FHL
	Practice proper handling of materials.	
	Use more sturdy storage boxes in packaging the collections.	LML
	Pack and arrange the collections properly in the storage boxes and do not pile heavy boxes on top of one another.	
	If the books or other collections are oversized, make sure that they are properly stacked in the boxes and use plastic bins and bubble wrap if available.	
	It is important to secure the collections by using plastic bins or boxes.	NAP
	Keep materials away from all kinds of radiators and vents.	NLP
	Training of personnel to ensure proper handling of materials, including proper packing, labeling, and transport and transfer from original location to temporary sites	UPDML
Pilferage	Strictly adhere to security measures; use of CCTV	FHL
	Implement storage access controls; tracking of retrieved items	
	Conduct a careful review of security and staff qualifications.	
	Ensure a safe facility.	NLP
Pollutants	Deal only with reputable service providers	FHL
	Provide guidance/training for maintenance personnel	
	Practice proper handling of materials.	
	Use appropriate cleaning materials.	
	Ensure proper housekeeping habits.	NLP
Power outage	Coordinate closely with the building admin for preventive maintenance.	FHL
	Regularly back up files/data	
	Coordinate with the building manager and Corporate Protection.	
	Unplug equipment and seek the assistance of an electrician.	NLP
Sewage Leak	Conduct regular inspection by the building administrators.	UPDML
	Coordinate closely with the building admin for preventive maintenance; immediately report incidents.	FHL
	Use pallets in the piling of boxes to safeguard them in case of food or water leaks.	LML
Space	Measure the allotted space and count the number of shelves per room ahead of time to lessen the problem of space.	FHL
	Storage areas must be considered as one of the major components to help in mitigating the risks.	NLP
	Proper planning and coordination should be in place.	

FUNDS OF LIBRARIES

Storm/Typhoon Damage	• Closely coordinate with the building admin/property manager and security team for monitoring and preventive maintenance.	FHL
	• Immediately report damage for appropriate action.	NLP
	• Ensure a safe facility.	
Theft	• Install CCTVs in Reading Areas/Shelves Areas for additional collection security.	UPDML
	• Strictly adhere to security measures; use CCTV	FHL
	• Implement storage access controls; tracking of retrieved items	
	• Consider using RFID tags.	LML
	• Have a convoy or a guard when transporting the collection, but there is no need for a siren and uniformed guards. The security system and personnel should be simple. She said to make an effort to do the transport in the simplest possible way to avoid the public's interest in the collections that are being transported, especially if they are cultural or historical treasures that are very valuable. It is riskier if uniformed security is hired for it may alarm or give a clue to the public that there are valuable items in the vehicle and interception may happen.	NAP
Vandalism	• Ensure the security of the facility and collections.	NLP
	• Install CCTVs in Reading Areas/Shelves Area for additional collection security.	UPDML
	• Strictly adhere to security measures; use CCTV	FHL
	• Implement storage access controls	
	• Implement/monitor tracking of retrieved items.	
	• Set rules/procedures for handling collections.	NLP

Conclusions

Motivations, risk management standards, and methods, and the nature of Filipiniana collections are foundational to the successful transportation of collections. Both extrinsic and intrinsic motivations drive the institutions to move collections safely. While some threats are considered moderate, effective planning and risk mitigation measures are vital to protect collections and personnel.

The study also highlights the importance of considering risks not only to collections but also to the people involved. For instance, health risks and unforeseen events, such as the Russia-Ukraine War, can impact the move. Identifying and prioritizing risks during the moving process are essential for making informed decisions.

Recommendations

The study suggests a framework that emphasizes motivations, risk management standards, and practices as the foundation for successful collection transportation. Training and equipping personnel with the necessary skills and knowledge are essential to ensure a smooth move.

Additionally, adherence to standards and guidelines, risk assessment, and thorough planning before the move can help mitigate potential risks. This includes factors like collection type, location, storage, building considerations, transportation, personnel, materials/equipment,

processes, budget, security, and weather. Ensuring security measures, like CCTV and RFID tags, can help protect against theft.

In conclusion, the study highlights the need for a well-rounded approach to move library, archive, and museum collections safely. By understanding motivations, employing risk management strategies, and effective planning, institutions can navigate the challenges of relocating their collections while safeguarding their cultural heritage.

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GALORA H. M. S. C.

Національне управління економіки та розвитку (Пасіг, Філіппіни),

e-mail: mapalarin@gmail.com, ORCID 0009-0004-8590-4961

Збереження матеріалів філіппінської культури: розпізнавання та визначення пріоритетів ризиків під час транспортування, переміщення або релокації бібліотечних, архівних та музейних фондів

Мета. Бібліотеки, архіви та музеї є життєво важливими для навчання та культури. Катастрофи загрожують як їхнім будівлям, так і фондам. Безпека є першочерговим завданням під час кризових ситуацій, але захист фондів також має важливе значення. У дослідженні з'ясувалося, чому п'ять установ Філіппін – Бібліотека спадщини Філіппін, Музей і бібліотека Лопеса, Національний архів Філіппін, Національна бібліотека Філіппін і Головна бібліотека Університету Філіппін Діліман – перемістили свої фонди та як вони керували ризиками. **Методика.** Дослідниця використовувала якісні та кількісні методи, оцінюючи ризики на основі ймовірності та впливу. **Результати.** Результати дослідження виявили мотивацію для переміщення фондів – як зовнішню (наприклад, ремонт), так і внутрішню (гордість). Це підкреслило важливість розпізнавання й визначення пріоритетності ризиків, навіть низького рівня, для захисту фондів і основних мотивацій установ. **Висновки.** Нездатність зменшити ризики може призвести до втрат і збитків, що впливають на основні мотивації цих установ.

Ключові слова: переміщення фондів; фонди філіппінської культури; оцінка ризиків; переїзд; мотивація

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LUCHKA L. M.

Scientific Library, Oles Honchar Dnipro National University (Dnipro, Ukraine),

e-mail: Luchka64@i.ua, ORCID 0000-0002-1792-2349

Publications of the Taras Shevchenko Scientific Society as Historical Sources of Research on the Book Heritage of Ukraine

Objective. The purpose of the article is to study the history of the multidisciplinary publishing business of the fundamental Ukrainian organization of the 19th century – the Taras Shevchenko Scientific Society. The object is the scientific book heritage of the Society for 150 years, which is a powerful potential of the educational process and patriotic education of young people. **Methods.** In accordance with the tasks set, analytical and synthetic, systemic and structural, comparative and statistical methods of scientific research are developed and used. This article analyses the collections of rare and valuable editions of the scientific library of the Oles Honchar Dnipro National University (DNU), namely, the collection of publications of the second half of the 19th and early 20th centuries of the Shevchenko Scientific Society. **Results.** The research analyzes the entire collection of scientific works of the Scientific Society of the 19th and early 21st centuries, which is kept in the Oles Honchar Dnipro National University library. The editions of the 19th and early 20th centuries and a book collection of the Canadian branch of the National Academy of Sciences of the second half of the 20th century are valuable in terms of content. Special attention is paid to the study of sources on the history of Ukraine as records of the national book heritage. A selection of modern publications of the Society by subject is highlighted. **Conclusions.** One of the important activities of a scientific library is the disclosure and dissemination of information space regarding its collections. The book Heritage of the Taras Shevchenko Scientific Society is a unique primary source for studying the history of the formation of the national identity of Ukrainians.

Keywords: scientific library; collections; book heritage; the Shevchenko Scientific Society

Introduction

The library collections of Ukraine reflect the national and global historical and cultural potential, which includes the book heritage. In the context of the Russian-Ukrainian war, an important area of library activity is the preservation of rare and out-of-print books, on the one hand. On the other hand, proper disclosure of library collections for the purpose of patriotic education of youth and highlighting of white spots in history became a specific objective. In this direction, the collections of rare and valuable editions that are part of the structure of university libraries play an important role. The collection of the Shevchenko Scientific Society occupies a special place among the significant collections of the Dnipro National University Scientific Library. In times of war, the primary task is to disseminate reliable information, spread knowledge potential, and popularise Ukrainian publications, works by Ukrainian authors, and the works of Ukrainian scientists who shaped the nation and created statehood. The purpose of the study is to highlight the history and development of the Shevchenko Scientific Society's collections of publications held by the scientific library of Oles Honchar Dnipro National University.

Methods

In accordance with the tasks set, analytical and synthetic, systemic and structural, comparative and statistical methods of scientific research are developed and used. This article analyses the collections of rare and valuable editions of the scientific library of the Oles Honchar Dnipro National University (DNU), namely, the collection of publications of the second half of the 19th and early 20th centuries of the Shevchenko Scientific Society.

Results and Discussion

In 1873, the statute of the Shevchenko Scientific Society was approved in Lviv, and its history has been studied since that year. The initiative to found the Society came from cultural figures led by Oleksandr Konysky. One of the society's tasks was to create a publishing house for scientific literature. The society raised 18,000 Austrian crowns, which were spent on the purchase of a printing house and publishing equipment. In 1874, the publishing activities of the Scientific Society began. The first period (late nineteenth century) was called the literary and scientific period. 20 own publications were the first. The most important among them was the Literary and Scientific Bulletin. This journal was in the collections of Katerynoslav libraries (the Library of Katerynoslav Enlightenment, the city public library, and the library of the Historical Museum) (Bilaniuk & Stebelskyi, 1977). Of particular note is the fact that the library of the society was founded, and initiated by O. Konysky. The total amount of the fund on the eve of the Second World War reached 300,000 copies.

The total collection of the Shevchenko Scientific Society publications in the collections of the Oles Honchar National Library includes more than 300 copies, which are stored in the Department of Rare Books, the Department of Foreign Literature, and the main book depository.

The basis of this collection is the publications of the 19th and early 20th centuries, which are kept in the Department of Rare Books. Among them are 25 volumes of Proceedings of the Shevchenko Scientific Society published in Lviv. The first edition is the second volume of "Zapiski" (1893), prepared and compiled by Ukrainian activist, historian, and educator Oleksandr Barvinsky (Barvinskyi, 1893).

An interesting fact should be noted - six volumes of this collection of Proceedings have the proprietary mark "Library of the Monastery of St Basil in Zhovkva". The history of the monastery began in the 17th century, and the history of the library began in 1780. It was a large library with both an interesting history and a sad fate (Hrushevskyi, 1903).

In addition to Proceedings, "Ethnographic Collection" edited and prefaced by the prominent Ukrainian politician Mykhailo Hrushevskyi was published by the society in 1895 in Lviv. The basis of the publication is "Galician Folklore" by Osip Rozdolsky, and "Ukrainian Human Fictions", collected by Opanas Timchenko.

In 1899 the Ethnographic Commission of the Shevchenko Scientific Society prepared "Materials for Ukrainian-Russian Ethnology" edited by Ukrainian ethnographer, anthropologist, archaeologist, and museum historian Khvedir Vovk. The publication is notable for its appendices compiled by Khv. Vovk. The index, a lot of illustrative material, and drawings are useful. Tables with illustrations of Easter egg ornaments make a pleasant impression (Vovk, 1899).

The Historical and Philosophical Section of the Shevchenko Scientific Society worked on individual texts – historical studies of the geographical territories of Ukraine (for example, the "Collections" – volume 5 "Materials on the Cultural History of Galician Rus' of the 18th – 19th centuries" edited and prefaced by Ivan Franko (1902). Valuable for researchers are the indices of literature and archival materials, geographical, name, and subject; volume 9 contains Mykhailo Hrushevsky's famous work "History of Ukraine-Rus" (1906).

The activities of the Archaeographic Commission of the Shevchenko Scientific Society are associated with the name of M. Hrushevsky. Thus, he worked on collecting materials on the socio-political and economic history of Western Ukraine, and in 1906, these "Materials" were published in a separate volume containing historical documents and acts.

The Department of Rare Books has copies from the series "Sources on the History of Ukraine-Rus". The fifth volume is devoted to the history of Galicia, edited and collected by Serhii Tomashevskyi, a physician and public figure (1901). The seventh volume contains "Descriptions

of the Kingdoms in the Russian Lands" (1903), edited by M. Hrushevsky and dedicated to the properties of the Polish-Lithuanian Commonwealth (16th century). The publication was prepared in Polish and Ukrainian. Volume 22 "Diary of Yakiv Markovych" (1913), edited by historian and genealogist Vadym Modzalevskyi, is valuable as a memoir source. The diary covers the history of the Hetmanate (18th century). The author is a Ukrainian writer, a student of Feofan Prokopovych. This volume is a continuation of O. Lazarevsky's publication "Diary Notes of Yakov Markovych" (1859), which is also available in the scientific library.

In the early 20th century, the activities of the Philological Section began. In 1906, the seventh volume was published under the title "Mykhailo Drahomanov's Research on Ukrainian Folk Literature and Writing". Another name of interest to historians and philologists is Mykhailo Pavlyk, a Ukrainian writer, publicist, and public figure, who edited the volume and prepared the foreword.

The society's activities covered not only the social sciences and humanities. Members of the society also drew attention to the development of natural and medical sciences. Thus, in the early 20th century, the Collections of the Mathematical, Natural History, and Medical Section, which worked at the society, became valuable in terms of content. For researchers, the publications are interesting because of their editorial staff, namely, Ukrainian scientists: the educator and the linguist I. Verkh ratskyi, the mathematician V. Levytskyi, the geographer and the ethnographer S. Rudnytskyi. Professional articles on topical issues were selected for publications, including those by Ukrainian scientist in the field of chemistry and physics Y. Hirniak; the physician and the educator S. Murachevska-Okunevska; the physician Osyp Dakura, one of the first authors of scientific works in Ukrainian. The first collection on medical issues of the late 19th century was the "Medical Collection". The Scientific Library has volume 3 (1898) and volume 8 (1901 and 1902). They are written in two languages: Ukrainian and German and there is an index. A medical collection, as stated in the introduction: "This series is the first generalized work of the Shevchenko Scientific Society on this subject", is a professional publication (Verkh ratskyi, Levytskyi, & Rudnytskyi, 1907; Ozarkevych, 1898).

The book collection of the Shevchenko Scientific Society of Canada is kept in the Department of Foreign Literature and is also extensive. The "Collections of Scientific Papers" of 1972, 1977, 1993, and 1999 are jubilee editions full of interesting facts and events from the history of the society. The presence of the logo on the book covers is valuable. The Paris edition of the 1955-1957 Encyclopaedia of Ukrainian Studies (10 volumes) edited by Volodymyr Kubiyovych, professor, Ukrainian geographer, and active public figure, deserves special attention. Articles about the Dnipro region, including higher education institutions and industrial enterprises are of special interest (Kubiyovych, 1957).

Some works by the leaders and representatives of the diaspora of the Shevchenko Scientific Society are of particular interest: Vasyl Veriga (1986) and Bohdan Stebelsky (1991). Their articles are devoted to the history and old culture of Ukraine.

In the 20th century, the society's members were engaged in publishing serial publications. Thus, the Ukrainian Archive series published local history publications with encyclopedic content: "Buchach and Buchachchyna" (1972), prepared for the 100th anniversary of the Scientific Society, 924 pages, with maps, an index of names, an index of photographs (234 items); "Boikivshchyna: a collection of materials on geography, history, ethnography, and everyday life (1980). These publications are of a high scientific level, fundamental in content, and unique in the number of countries (three to five) that participated in the publishing. The preface is relevant, stating that the purpose of the publication is to fill "the gaps in the reflection of the true reality in the history of the regions, culture, and creativity of the Ukrainian people..." (Utrysko, 1980). This series is an example of printing art.

An important area of the Society's activity is popularisation, promotion, and encouragement to read Ukrainian fiction. Established in Kolomyia in 1903, Ukrainska Naypryadnya Publishing House was known in the 20s and 30s for preparing and publishing Bohdan Lepkyi's works *In a Quiet Evening*, *Motrya*, and *Baturyn* in Leipzig. The beautifully decorated editions of the same format and with the publisher's logo contain Ukrainian ornaments and drawings.

The publishing activities of the Shevchenko Scientific Society continue to this day. In the 21st century, the collections of the Scientific Library of DNU traditionally include modern collections of the Society's works: "Proceedings" (25 vols.), new series "Theatre Studies", "Chemistry and Biochemistry", "Geophysics" in "Proceedings of the Shevchenko Scientific Society", new volumes of the "Medical Collection".

Created in the 19th century and preserved until the 21st century, the book collections and some rare copies are thorough sources for research on the history and culture of Ukraine, publishing, and librarianship. The library's collections contain valuable and useful materials for comprehensive research on the history of Ukrainian book printing, and the history and development of culture, education, and science. The library researches the collections and engages students and postgraduates to work with publications of the 19th – early 20th centuries. The study of the collections as a whole or individual copy will allow us to imagine more realistically the historical processes that took place in the Ukrainian lands of this period, to create a true picture of the historical identity of the Ukrainian people. The Scientific Library participates in the meetings of the historical student group, where we offer thematic literature reviews. One of the most relevant forms of popularisation is conducting classes, lectures, and excursions for students based on the materials of the rare books collection. The department's collections are used by students of various faculties in their educational and research work. The fruitful cooperation between the library and the faculties results in the creation of interesting, creative, and useful projects.

Conclusions

The publications of the Shevchenko Scientific Society have scientific and cultural value and are recognized by the Ukrainian and world community. The book *Heritage of the Shevchenko Scientific Society* is a valuable source for studying the history of the Ukrainian nation, its customs, traditions, culture, science, and language. The Scientific Library of the Oles Honchar Dnipro National University is proud of the solid scientific achievements of the world-famous Ukrainian organization and uses various forms of popularisation. In today's environment, it is important to disseminate information about the society's fruitful activities and highlight its contribution to the history of national cultural heritage.

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LUCHKA L. M.

Наукова бібліотека, Дніпровський національний університет імені Олеся Гончара (Дніпро, Україна), e-mail: Luchka64@i.ua, ORCID 0000-0002-1792-2349

Видання Наукового товариства імені Тараса Шевченка як історичні джерела досліджень книжкової спадщини України

Мета статті полягає у дослідженні історії різногалузевої видавничої справи ґрунтовної української організації XIX ст. - Наукового товариства імені Тараса Шевченка (НТШ). Об'єктом є наукова книжкова спадщина товариства за 150 років, що є потужним потенціалом освітнього процесу та патріотичного виховання молоді. **Методика.** Відповідно до поставлених завдань розроблені та використовуються аналітико-синтетичний, системно-структурний, порівняльний та статистичний методи наукових досліджень. В даній роботі проаналізовано фонди рідкісних і цінних видань наукової бібліотеки Дніпровського національного університету імені Олеся Гончара (ДНУ), а саме – колекція видань другої половини XIX – початку XX ст. Наукового товариства імені Шевченка. **Результати.** Під час дослідження проаналізовано цілісну колекцію наукового доробку НТШ XIX – початку XXI ст., яка зберігається в університетській книгозбірні ДНУ імені Олеся Гончара. Цінними за змістом є видання XIX – початку XX ст. і колекція книг канадської філії НТШ другої половини XX ст. Особливу увагу приділено вивченню джерел з історії України як пам'яток національної книжкової спадщини. Висвітлено підбірку сучасних видань товариства за тематикою. **Висновки.** Одним з важливих напрямків діяльності наукової бібліотеки є розкриття та поширення інформаційного простору щодо фондових колекцій. Книжкова спадщина НТШ імені Тараса Шевченка є унікальним першоджерелом з вивчення історії формування національної самосвідомості українців.

Ключові слова: наукова бібліотека; фондові колекції; книжкова спадщина; Наукове товариство імені Шевченка

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SVERDLYK Z. M.

Kyiv National University of Culture and Arts, Ukrainian Research Institute of Archival Affairs and Records Keeping (Kyiv, Ukraine), e-mail: zsverdlyk@gmail.com,
ORCID 0000-0002-2104-0920

BOIKO V. F.

Ukrainian Research Institute of Archival Affairs and Records Keeping (Kyiv, Ukraine),
e-mail: vitaminzik5@gmail.com, ORCID 0000-0002-5725-9641

KULESHOV S. H.

Ukrainian Research Institute of Archival Affairs and Records Keeping (Kyiv, Ukraine),
e-mail: posena@ukr.net, ORCID: 0000-0003-1950-9651

Activities of State Institutions of Ukraine in the Return of Cultural Property and Documentary Archival Collections

Objective. The purpose of this publication is to investigate the activities of the State institutions of Ukraine in identifying and returning historical, cultural property, library collection, and archival documents to Ukraine. **Methods.** The research is based on the method of system analysis and synthesis, historical method, structural-functional analysis, and problem method. **Results.** Based on archival documents, legislative and regulatory acts, and published research, the article analyzes the activities of state institutions of Ukraine in the process of returning cultural and historical property as well as archival and library collections to Ukraine. The chronological framework of the research is stipulated by the establishment of the National Commission for the Return of Cultural Property to Ukraine after Ukraine's independence and a significant narrowing in the early 2000s of the state policies on the return of historical and cultural heritage. **Conclusions.** The results showed that during the existence of the National Commission for the Return of Cultural Property to Ukraine and the State Service for Monitoring the Movement of Cultural Property Across the State Border of Ukraine, the Department for the Control of the Movement of Cultural Property did a wide range of multi-vector work. The foundations were laid for future long-term intergovernmental cooperation in the field of search, record-keeping, return of historical and cultural property, library collection, archival documents, and collections.

Keywords: memory; historical property; archival collection; library; library collection; archival institution; archival document; historical and cultural heritage

Introduction

Huge collections of archival documents of Ukrainian political, cultural, and religious figures, which for various reasons turned up in public or private collections of other countries, have been the subject of discussions on the possibility of their return to their homeland after the proclaimed independence of Ukraine. The topic of preservation and return of historical and cultural property has recently become extremely relevant. First of all, this is due to the update of Ukrainian legislation and the compliance of its individual clauses with the generally accepted world principles of restitution, return, exchange, and donation. A significant amount of historical, cultural property, library collection, and archival documents that reflect the history and culture of the Ukrainian people were returned to Ukraine from other countries.

Through documents, archival institutions relay the events to the present, which happened in the distant and not-so-distant past. As for libraries, one of their functions is preservation and access to library and archival collections returned to Ukraine. As an example, we can offer a personal library collection of the outstanding scientist. His research can help to reconstruct the intellectual biography of the creator and, due to the contents of the book and archival collections, reproduce the periods of the scientific biography of the scientist, his various research interests,

participation in international academic institutions and forums, the creation of scientific institutions by this person, as well as long-term contacts with outstanding scientists, state, church and cultural figures of many countries of the world. An important role is played by the interaction between libraries and state archives in the context of cooperation in ensuring the preservation and organization of intellectual and physical access to library and archival funds returned to Ukraine.

The purpose of this publication is to investigate the activities of the State institutions of Ukraine in identifying and returning to Ukraine historical, and cultural property, in particular library collections and documentary archive collections. Pursuant to the purpose, the main objectives of the research were to analyze a set of unpublished archival documents, determine the legal succession of institutions responsible for the search, discovery, and return of cultural values to Ukraine, identify key areas of their activities, and summarize the achievements of these institutions.

Methods

In order to achieve this purpose, a set of best-fit scientific methods has been applied by the authors of the research. This has made it possible to systematize, interpret, and synthesize scientific information in the context of the issues addressed in the article.

The method of systematic analysis and synthesis considers the return of cultural and historical property, in particular library and archival collections being an urgent problem today. This scientific approach allowed the authors to conclude that this problem is one of the important aspects of public life in any state.

The purpose of the historical method is to study the formation of state institutions that dealt with the return of cultural property to Ukraine. The use of the historical method allows us to identify the degree of importance of preserving the historical and cultural heritage of Ukraine as a state; to analyze the chronology of the transformation of state institutions that dealt with this issue; to determine the prospects for further actions in the direction of returning to Ukraine its historical and cultural heritage, which under certain circumstances appeared overseas.

Structural-and-functional analysis is a method that considers the structure and functions of government agencies involved in the preservation, use, and return of historical, cultural heritage and valuable library and archival collections. The method allows us to analyze the organizational principles of state policy and structural changes in the bodies of state executive power of Ukraine, which influenced the process of international cooperation in the direction of return and restitution of cultural property.

The application of the problem method became the basis of the study. The problem method led to the conclusion that the return of historical and cultural heritage in Ukraine has not been completed yet. Transformation of the system of public authorities, changes in the powers of executive authorities, responsible for the implementation of information and cultural policy, are hampering the processes of international cooperation for the return of historical, cultural values and valuable archival collections to Ukraine.

Results and Discussion

Various aspects of the problem of returning cultural property to Ukraine, including library and archival collections, are laid down in the scientific works by V. Akulenko, S. Kot, M. Kulinich, M. Palienko, I. Tatiivska, V. Tykhenko et al.

Thus, Viktor Akulenko in a number of his studies addressed, first of all, the issue of compliance by the Ukrainian side with the norms of international law on preservation and the main stages of the return of cultural property (Akulenko, 2010).

Serhii Kot considered a similar topic in a number of articles, drawing attention to the legal status of cultural values, their movement and loss, ways of search, and possibilities of their return (Kot, 2011; Kot, 2015; Kot, 2017).

Maryna Palienko touched upon the problem of the presence of archival collections of documents belonging to the representatives of the Ukrainian emigration on the territory of foreign countries (Palienko, 2006; Palienko, 2011).

Volodymyr Tykhenko was the first to raise the issue regarding the activities of the National Commission for the Return of Cultural Property to Ukraine (the State Service for Monitoring the Movement of Cultural Property Across the State Border of Ukraine – since 2000) (Tykhenko, 2018; Tykhenko, 2020). The scientist analyzed in detail the archival documents stored in fund 72 of the Central State Archive of Foreign Ukrainica and noted that with the creation of the Commission in 1992, Ukraine had begun not only to establish but also to actively implement a State policy for the restitution of cultural property.

Mariia Kulinich covered the stages of the Ukrainian policy implementation in the process of returning the archival Ukrainian property from abroad and, primarily, on the role of state institutions and scientific academic institutions in this process (Kulinich, 2013; Kulinich, 2014; Kulinich, 2015).

Inesa Tatiivska drew attention to the legislative, regulatory, and legal aspects of the activities of state institutions of Ukraine in the return and restitution of cultural property. The author also analyzed in detail the domestic and international law on the illegal import or export of artifacts of the national culture of Ukraine (Tatiivska, 2014; Tatiivska, 2018).

We witness significant scientific achievements on the problems of the presence of an array of Ukrainian cultural values in foreign countries, the possibility of their return to Ukraine, and the legal basis of this process. Still, activities of the National Commission for the Return of Cultural Property to Ukraine (hereinafter – the Commission) and other state institutions that were engaged in the identification and return of cultural heritage of Ukraine, which for various reasons were residing in other countries, are inadequately treated in historiography.

To coordinate the search process, to establish contacts with foreign countries, to discuss possible ways of bilateral cooperation on the return/restitution of cultural property to Ukraine, the Cabinet of Ministers of Ukraine adopted in December 1992 a Resolution “On the establishment of the National Commission for the Return of Cultural Property to Ukraine” (Verkhovna Rada of Ukraine, 1992a), and in June 1993 – the Resolution “On approval of the Regulations on the National Commission for the Return of Cultural Property to Ukraine” (Verkhovna Rada of Ukraine, 1993a). The main tasks of the newly established institution were the following: restoration and preservation of national spiritual heritage by returning objects of cultural value to Ukraine, coordination of activities in this direction of interested institutions and organizations, development of legal grounds for the legality or illegality of objects of cultural value in other countries (Verkhovna Rada of Ukraine, 1993a).

One of the priorities of the Commission’s leadership was to establish close interstate cooperation with countries that have preserved the cultural values of Ukraine or whose cultural values could be located on the territory of Ukraine. To this end, the representatives of the Commission sent a draft Resolution of the Cabinet of Ministers of Ukraine “On the Standard Regulations on the Ukrainian part of the bilateral Intergovernmental Committee for Promoting the Return of Cultural Property” to the Deputy Prime Minister of Ukraine I. Kuras. According to this Regulation, the Intergovernmental Committee was supposed to be established on the basis of a

bilateral agreement with the relevant foreign country. The agreement was to consist of two parts: the Ukrainian and the foreign ones. The Ukrainian part of the Intergovernmental Committee ensured the fulfillment of the obligations of the Government of Ukraine arising from the relevant international agreements, organized work with a foreign country on the identification and record-keeping of cultural values to be returned (Ukrainets, 2010, p. 284).

The Cabinet of Ministers of Ukraine also adopted other Resolutions on the formation of Ukrainian units of bilateral intergovernmental committees on various aspects of intergovernmental cooperation (Verkhovna Rada of Ukraine, 1993b; Verkhovna Rada of Ukraine, 1996a). It should be noted that in pursuance of the order of the Cabinet of Ministers of Ukraine of October 12, 1995 No. 17810/2 it was necessary to agree on proposals for the staff of the Ukrainian part of the intergovernmental Ukrainian-Russian, Ukrainian-German, Ukrainian-Polish committees for the return of cultural property. Accordingly, the following candidates were nominated to the Ukrainian part of the Intergovernmental Ukrainian-Russian Committee: V. Akulenko, O. Diachenko, S. Zaremba, S. Kot, P. Kiryakov, V. Lozytsky, O. Nestiulya, L. Miliaeva, V. Ulianovsky, O. Fedoruk, G. Chmil. The Ukrainian-Polish commission includes O. Belashov, B. Voznytsky, Ia. Isaievych, I. Lisevych, N. Martynenko, M. Mozdyr, O. Matsiuk, M. Kovalsky, L. Krushelnyska, and O. Fedoruk. Subsequently, the Government in its order of May 31, 1996 No. 1179/46 approved the composition of the working groups on the restitution of cultural property (Ukrainets, 2010, p. 286).

The approval of all these documents contributed to the improvement of Ukraine's international status, and ensured its involvement in world trends of constructive dialogues on various issues and the maintenance of long-term partnership, including the return of cultural values.

The Federal Republic of Germany (FRG) became one of Ukraine's partner countries. Under Articles 16 and 17 of the Intergovernmental Agreement on Cultural Cooperation signed on February 15, 1993 (Verkhovna Rada of Ukraine, 1993c), there were negotiations, meetings of delegations on the return/restitution of those cultural values that were exported during the Second World War and then in subsequent years to Germany. After all, according to far from complete estimates, Hitler's troops in Ukraine looted 151 museums, which lost more than 300 thousand exhibits; libraries – about 51 million books; archives – 46 million cases. Inventory lists of museums and art galleries, as proof of ownership, were also destroyed or taken away by the Nazis (Akulenko, 2018). Since during the Second World War Ukrainian culture suffered huge and irreparable cultural losses, the establishment of a peaceful long-term dialogue with the country, where Ukrainian cultural values are mainly located, was an important step.

The talks between the delegations of Ukraine and Germany in Munich on November 3-4, 1994 demonstrated the desire of both parties to reach an agreement and establish long-term intergovernmental contacts. According to the report of the negotiations, “the Ukrainian delegation offered the German side an option of parity exchange of displaced cultural values. In the absence of such an opportunity – the creation of appropriate value criteria for the gradual... implementation of the program with the mandatory requirement of compensation to Ukraine for the destroyed cultural property. ... The German side ... is ready to cooperate at the level of specific pilot programs” (TsDAVO Ukrainy, 2012a, p. 4). These included, first of all, the preparation and holding of joint exhibitions, the signing of bilateral agreements on cooperation between the cultural institutions of the two countries, the restoration and renovation of Ukrainian architectural structures at the expense of the German side, and so on.

However, the meetings of the intergovernmental delegations of Ukraine and Germany on February 27-29, 1996 in Berlin demonstrated a number of existing problems in relations between the two countries on the issue of search and restitution of cultural property: “The German side has

consistently sought the return of its own cultural property located in the vaults of Ukraine, without taking into account that Ukraine during the war suffered ... a total theft of cultural property” (TsDAVO Ukrainy, 2012a, p. 1).

Pursuant to the terms of the signed bilateral agreement and arrangements, following the meetings of the Ukrainian-German delegations, the German side returned, among other things, documentary documents – 173 books from the Kyiv Historical Library (including books from the former library of Metropolitan Flavian in Kyiv Pechersk Lavra), which were discovered by Ukrainian experts in Munich, documents of the Central State Film, Photo and Sound Archives of Ukraine (about 2,000 negatives). The positive act concerning Ukraine was the transfer of 200,000 German marks (DEM) to the government of Ukraine for the restoration of the Dormition Cathedral of the Kyiv Pechersk Lavra, restoration of some decorative and applied art objects from the funds of the National Art Museum of Ukraine, which were returned after the war from Germany in a crushed form (Malezhyk & Khomenko, 2014, p. 349).

Agreement on the return of the cultural property, signed in February 1992 with the Russian Federation, Azerbaijan, Belarus, Armenia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Uzbekistan (Verkhovna Rada of Ukraine, 1992b), provided for the establishment of an Intergovernmental Committee to establish a mechanism and practical work on the return of cultural and historical values, to determine the categories of cultural and historical values to be returned. Thanks to the painstaking and hard work of the members of these commissions, documentary archival documents (correspondence, manuscripts) belonging to the famous Ukrainian artist O. Dovzhenko were transferred to the Central State Archives Museum of Literature and Arts of Ukraine (hereinafter – the CSAMLA Ukraine) from Moscow (TsDAVO Ukrainy, 2012j). Negotiations on this lasted during 1993–1997.

Thanks to the agreements and negotiations of Ukrainian diplomats, members of the Committee with representatives of Great Britain, the archival documents of the poetess H. Mazurenko were returned and transferred to the National Museum of Literature of Ukraine in 1993 (TsDAVO Ukrainy, 2012k). Although she was born in St. Petersburg, she was educated in Katerynoslav and in 1919 joined the army of the Ukrainian National Republic, where she became a communication agent. Later she emigrated to Great Britain and already there she created a number of collections of poetry, some of which she illustrated herself. The return of these archival documents is extremely important for Ukraine because their study complements and deepens the previously unknown pages of culture, history, and art.

Despite the fact that the bilateral Agreement on Cooperation in the Return of Cultural Property between Ukraine and Poland was signed in June 1996 (Verkhovna Rada of Ukraine, 1996b), a whole set of documents of the Prosvita Society (Enlightenment society) was returned from Poland to the Central State Historical Archive of Lviv in July 1993 (TsDAVO Ukrainy, 2012l). It should be noted that the Prosvita Society, founded in the western Ukrainian lands in the second half of the 19th century, was the organization that united the most famous figures of culture and science. Gradually expanding its publishing and educational activities, the Society opened branches throughout Europe.

In the summer of 1994, documentary documents related to the life and work of Ukrainian poetess Lesia Ukrainka were returned from the United States to the Museum of Eminent Ukrainian Culture Personalities (TsDAVO Ukrainy, 2012d). Also, in the fall of 1994, negotiations continued on the return from the United States of the editions of works by Ukrainian art critic, public and cultural figure V. Sichinsky (TsDAVO Ukrainy, 2012e) to the Khmelnytsky Universal Library named after M. Ostrovsky. His works on the history of Ukrainian art, as well as heraldic, iconographic, and bibliographical studies, are written in Spanish, Italian, Polish, English, and other languages. Owing to the fruitful work of the Committee’s representatives, the documents and

personal archive of the Ukrainian archaeologist, scientist Yu. Shumovsky (TsDAVO Ukrainy, 2012f) were returned from the USA.

During 1994–1999, negotiations continued on the Movement of documentary archival documents of the writer V. Barka from the USA to the Institute of Literature of the National Academy of Sciences of Ukraine (TsDAVO Ukrainy, 2012g). At the same time, during 1995–1998, intergovernmental negotiations took place on the Movement of archival documents of the famous Ukrainian filmmaker, choreographer V. Avramenko (TsDAVO Ukrainy, 2012i) from the United States to the Korsun-Shevchenkivsky State Historical and Cultural Reserve.

The return to Ukraine of such a large number of the library collection and archival documents from the United States was the result of an agreement signed in March 1994 between the Government of Ukraine and the United States Government on the protection and preservation of cultural heritage (Verkhovna Rada of Ukraine, 1994). The document provided for the establishment of a Joint Commission on Cultural Heritage. Each party was to appoint one or more members to the Commission. The decisions of the Commission required the consent of the members of both parties. The parties were required to cooperate in ensuring that the Commission would have access to the property and information necessary for the performance of its functions. Under the Resolution of the Cabinet of Ministers of Ukraine (Verkhovna Rada of Ukraine, 1997), adopted later, the Ukrainian part of the commission was represented by: L. Novokhatko, V. Bondarenko, T. Izhevskaya, O. Fedoruk, V. Cherniavsky, Yu. Shcherbak.

The Czech Republic was also an important partner of Ukraine in the return of documentary archival documents. Article 15 of the Treaty of Friendship signed in 1995 (Verkhovna Rada of Ukraine, 1995) stated that the Contracting Parties shall assist each other in preserving and recognizing the cultural and artistic heritage of the peoples of the other Contracting Party, including the protection of historical and cultural monuments, research and study of archival documents, related to the history of both countries. Accordingly, in the period from 1994 to 1997, negotiations were held on the Movement of the documents from the private archives of the famous Ukrainian teacher S. Siropolko (TsDAVO Ukrainy, 2012b) from the Czech Republic to the Central State Archives of Supreme Bodies of Power and Government of Ukraine. During 1994–1998, negotiations continued on the Movement of documentary archival documents by O. Olzhych and O. Oles from the Czech Republic to Shevchenko Institute of Literature of the National Academy of Sciences of Ukraine (TsDAVO Ukrainy, 2012c).

During 1995–1996, the possibilities of moving archival documents and part of the private archive of the writer, and researcher L. Kraskovska to the Central State Archive-Museum of Literature and Arts of Ukraine from the Czech Republic were discussed at the official level (TsDAVO Ukrainy, 2012h).

The fruitful activity of the Commission in the search and return of documentary archival documents from the life and activity of famous Ukrainians was also embodied in a number of projects, state programs, national seminars, and round tables developed by its staff. Thus, the generalized “Cultural values of Ukraine: Losses. Ways of Return” National program, developed in 1999, aimed to coordinate the search, study, and description of cultural values found in other countries, lost by Ukraine (TsDAZU, n.d.b, pp. 1–14).

This range of issues was also discussed at scientific and practical seminars and conferences: “Cultural values displaced during the war – the cultural heritage of World War II: documents. Search for the Lost”, 1993; “Problems of the return of national and cultural monuments lost or relocated during the Second World War”, 1994; “Legal aspects of restitution of cultural values: theory and practice”, 1996. The problems of return of cultural values also became the subject of a number of organized round tables and research projects, international symposia:

“Return of lost library values to Ukraine: problems, prospects”, 1994; “Non-coercive options for restitution: the sharing of controversial cultural values (legal, scientific and moral aspects)”, 1997.

Despite the active and productive work of the Commission in the search and return of cultural values, establishing fruitful intergovernmental dialogues with different countries, replenishment of Ukrainian archival institutions, museums, and libraries with important archival documents, we may observe a gradual narrowing of its powers since 1996. Thus, the Decree of the President of Ukraine “On Changes in the System of Central Executive Bodies of Ukraine” signed on July 26, 1996, lowered the status of the Commission – from now on it was subordinated to the Ministry of Culture and Arts of Ukraine (Verkhovna Rada of Ukraine, 1996c). This meant a certain narrowing of its powers, the ability to organize and coordinate the process of identifying and returning cultural property.

Subsequently, in December 1999, by a Decree of the President of Ukraine “in order to improve the structure of executive bodies and increase the efficiency of public administration”, the National Commission for the Return of Cultural Property to Ukraine was abolished and its functions were transferred to the Ministry of Culture and Arts of Ukraine (Verkhovna Rada of Ukraine, 1999). As far back as February 2000, the State Service for Control of the Movement of Cultural Treasures across the State Border (hereinafter – the Service) (Verkhovna Rada of Ukraine, 2000b), continued to carry out the tasks of the Commission. However, according to S. Kot, a well-known Ukrainian scientist and researcher, the liquidation of the National Commission for the Return of Cultural Property to Ukraine and the combination of its functions with the State Service for Control of the Movement of Cultural Treasures across the State Border of Ukraine was a wrong decision. Only a few people could be engaged in returning Ukrainian cultural values, while the work of the previous institution and the activities of the entire staff of its employees were aimed precisely at fulfilling the above tasks (Kot, 2010, p. 369).

The newly established Service, in accordance with the Regulation (Verkhovna Rada of Ukraine, 2000a), approved by the Cabinet of Ministers of Ukraine in June 2000, operated within the Ministry of Culture and Arts of Ukraine and was subordinated to it. The analysis of the document showed a certain change in the vector of the institution’s activity: from now on more attention should be paid not to the search and identification of cultural values, but to generalization of the practice of application of legislation on export, import, and return of cultural values, development of proposals for its improvement (Article 3, Paragraph 4), performance in accordance with the legislation of control and supervisory functions for the export, import and return of cultural property (Article 3, Paragraph 3), as well as the implementation of necessary measures for the return of stolen, illegally exported and evacuated and unreturned cultural property, compiling their registers and catalogs (Article 3, Paragraph 18).

Oleksandr Fedoruk was appointed the head of the Service (until 2004), then he was superseded by the Honored Artist of Ukraine, Candidate of Art History V. Kornienko (2004–2005, 2007), later by the Candidate of Historical Sciences, Senior Researcher Yu. Savchuk (2008–2011). However, in March 2011, in order to optimize the system of central executive bodies, the Service was liquidated by a Resolution of the Cabinet of Ministers of Ukraine (Verkhovna Rada of Ukraine, 2011).

During its existence, the Service has developed priority areas of state policy on the return, import, and export of cultural property. First of all, it is a legislative activity: for the period of 2000–2007, 2 draft laws were developed and submitted to the Verkhovna Rada, 9 resolutions of the Cabinet of Ministers, 6 orders of the Ministry of Culture and Tourism, and 10 orders of the Service itself. The reason for active legislation was the actualization of Ukraine’s approximation in the adaptation of national legislation on national values to generally accepted international practice (TsDAZU, n.d.a, p. 9).

We can observe that the coordination of the Service's activities with the State Border Guard Service of Ukraine, the Security Service of Ukraine, and the State Customs Service was constantly deepening. State expertise was conducted on cultural property seized by law enforcement agencies and customs. 64,252 units of cultural values were accounted for in the amount of UAH 5,977,421 by the year 2008. They were deposited in more than 500 museums, libraries, and archives. Thus, in addition to objects of religious worship and works of art, in 2007 rare documents related to the life of the Ukrainian poet Taras Shevchenko were returned to Kyiv from New York (TsDAZU, n.d.a, p. 23–24).

Just as information is being added and previously unknown pages of the lives and activities of unjustly forgotten Ukrainians, especially foreign ones (Sverdlyk & Klynina, 2020), are being opened, the National Treasury of library collection and archival documents on the works of Ukrainian artists is also being constantly replenished. Owing to the fruitful work of the Service staff, the creative heritage of L. Morozova, V. Vynnychenko, M. Butovych, M. and V. Krychevsky, M. Morgun, P. Hansky, V. Hrozny, part of the legacy of Serge Lifar, V. Lutsiv, archives of Yu. Kosach, U. Samchuk, P. Kurinny, V. Korotych, was returned to the archives of the Ukrainian Free University in Munich.

In 2005, the "Personal Archive (Mission of the Ukrainian Insurgent Army Abroad)" from Canada was moved to the Central State Archive of the Supreme Bodies of Power and Government of Ukraine. The work of the Ukrainian sculptor from the USA P. Kapshuchenko was returned to the Museum of Hetmanship.

In 2006, the Ukrainian Institute of America donated to Ukraine the works by the artist O. Hryshchenko, which were deposited in the National Art Museum. At the same time, 25 boxes of archival documents of Hetman P. Skoropadsky and his family were transported from Lypynsky East European Research Institute (USA) with further storage in the funds of the Central State Historical Archive of Ukraine.

In 2007, the famous artist P. Ossovsky donated 52 of his works to Kirovograd Regional Art Museum, which became the basis of the gallery "World and Fatherland" (TsDAZU, n.d.a, p.25). In the same year, the Kyiv-Mohyla Academy received a book collection and archival documents of Harvard University professor Omelian Prytsak; works, archival documents, books by Academician of the Royal Canadian Academy of Arts Leo Mol (Leonid Molodozhanin) to the Kharkiv Art Museum and the National Museum of Taras Shevchenko; more than 220 valuable publications on art history were returned from the Federal Republic of Germany to Ukrainian libraries and museums (TsDAZU, n.d.a, p. 37).

In 2009, T. Skrypka, the curator of the archives-museum of the Ukrainian Free Academy of Sciences in the USA, returned archival documents and personal belongings of the Kosach family to the funds of the Lesia Ukrainka Research Institute.

The collection of Academician Omeljan Pritsak, which, according to his wish, was donated by his heirs to the National University "Kyiv-Mohyla Academy" (hereinafter – NaUKMA) may serve as a perfect example of a unique library collection and archival fund of personal origin. Omeljan Pritsak's collection was initially donated by his wife L. Pritsak on October 10, 2006 to the public organization "Kyiv-Mohyla Foundation of America", and then by its president I. Vyslotsky on October 11, 2006 transferred to NaUKMA. The collection was systematized and scientifically described by T. Sydorchuk (Sydorchuk, 2011; Sydorchuk, 2019). She also arranged Omeljan Pritsak Memorial Library as a structural subdivision of the Scientific Library of the National Academy of Sciences. The scientific and artistic heritage of the scientist includes a library fund (over 20 thousand copies of scientific literature and periodicals), an archival fund (over 20 thousand items of documents), and an art fund (about 300 items of paintings, graphics, decorative and applied arts).

The scientist's personal library fund consists of manuscripts, old prints, encyclopedic reference publications, scientific monographs, collections, convolutes, scientific periodicals in all European languages, and more than twenty Eastern languages, chronologically covering the 16th-20th centuries. The collection contains 26 books of the 16th-17th centuries, and 370 books of the 18th-19th centuries. The basis of library collection is the largest and most complete collection of oriental sources in Ukraine today. The oldest printed book in the collection is an oriental monument – the first Arabic edition of the work by the famous Arab geographer, cartographer, and traveler Al-Idrisi "The Book of the Traveler Tired of Wandering ...", which was published in Rome in 1592. One of the oldest books also includes the first grammar of the Turkish language, published in 1612 in Leipzig. The collection includes 42 copies of handwritten books in Arabic, Persian, and Ottoman-Turkish languages dating from the 16th-18th centuries. These are poetic collections, theological treatises, dictionaries, grammars, prayer books, treatises on astronomy, a collection of samples of refined style in correspondence, a historical and genealogical collection with lists and genealogies of sultans, viziers, and Crimean khans, etc. The collection of convolutes, which were systematized by the scientist, is valuable.

Due to its unique characteristics, O. Pritsak's personal library collection should be included in the State Register of National Cultural Heritage. The same applies to his fund of personal origin, on the condition that the norm of entering collections of archival documents into this register is adopted.

In 2010, the concept was developed and the first stage of the "Cultural Values of Ukraine" new information system was implemented, which consisted of 8 registers of cultural values: lost during and as a result of World War II (libraries); lost during and as a result of the Second World War (museums); returned to Ukraine; related to the history of the Ukrainian people outside Ukraine; which are on the national wanted list; which are wanted at the request of other states; confiscated cultural values; for which a certificate for the right to export (temporary) cultural values from the territory of Ukraine has been issued (Tykhenko, 2020, p. 179).

Throughout the existence of the Service, exhibition, scientific and journalistic work continued, cultural projects and presentations were implemented, celebrations and public discussions of various aspects of the return of Ukrainian cultural values, including documentary archival documents, took place.

In 2011, after the liquidation of the State Service for Control of the Movement of Cultural Property Across the State Border, the Department for Control of Movement of Cultural Property across the State Border of Ukraine (hereinafter – the Department) was established in the Ministry of Culture of Ukraine. According to I. Tatiivska, who headed the newly formed department, cooperation with the Ukrainian diaspora was suspended with the liquidation of the State Service for Control of the Movement of Cultural Property across the State border of Ukraine. Due to the economic crisis, expenditures on financing the activities of the Ministry of Culture of Ukraine to establish contacts with the Ukrainian diaspora in order to find cultural values, and create conditions for their return to Ukraine, were limited, which did not allow them to continue constructive cooperation and foreign missions with the aim of searching for cultural values and conducting professional research (Tatiivska, 2016, p. 220).

Herewith, the Department continued to be involved in the search and return of cultural property to Ukraine, as well as in monitoring the import and export of cultural property. Thus, in 2014, the Ministry of Culture received information from the Ukrbureau of INTERPOL about its joint activities with the law enforcement agencies of Italy to establish the location of the painting by the artist J. Hormens. According to the Italian side, this work of art was moved from Ukraine by Nazi troops during World War II and could be located in Italy. According to the Khanenko Museum, the work mentioned by Italian law enforcement officers is highly likely to be the same

painting that was lost by the museum during the Nazi occupation of Kyiv in 1943. Therefore, the Ministry of Culture officially provided Ukrbureau of INTERPOL with relevant documents that could identify the “Italian” work of art (Tatiivska, 2014, p. 327).

Another important, long-lasting, and difficult action was the so-called “issue of the return of Scythian gold.” The fact is that the collection of Scythian gold jewelry from the exhibition “Crimea – the golden island in the Black Sea” was on display at the Allard Pierson Museum (Amsterdam) under the agreements between the museum and a number of Ukrainian museums, some of which are located in the Autonomous Republic of Crimea. The completion of its exhibition coincided with the implementation of the Russian Federation’s illegal occupation of the peninsula in 2014. The Netherlands did not recognize the annexation and naturally, the question arose as to whom to return the exhibits of the collection. The order of the Ministry of Culture of Ukraine determined that for the period of illegal occupation of Crimea, the collection should be returned for temporary storage on the mainland of Ukraine. The main custodian of all museum objects of the exhibition was the National Museum of History of Ukraine. In December 2016, the District Administrative Court of Amsterdam ruled that the exhibits of the Crimean museums from the “Crimea – the golden island in the Black Sea” collection should be returned to Ukraine. However, already in March, this court began to consider the appeal of the museums of the Russian-annexed Crimea to the decision to return the collection of “Scythian gold” to Ukraine (Ukrinform, 2020). From this moment, long-term litigation on the resolution of the issue began. At the end of 2020, there was no final decision on the case of “Scythian gold”.

Herewith, methodological work continued on the elaboration of clear and specific standards for the implementation of inspections of cultural property. As early as 15 November 2019, the Ministry of Culture of Ukraine approved by order of the Ministry of Culture the Guidelines for the State Examination of Cultural Property (Verkhovna Rada of Ukraine, 2019), which were the result of long scientific and organizational, analytical work of specialists of departments of the Ministry. As stated in Paragraph 1 of the General Provisions, Guidelines “... developed to ensure the implementation of the Law of Ukraine “On export, import and return of cultural property” the Procedure for State Expertise of Cultural Property, equal treatment of the procedure for the State examination of cultural property and presentation of the results”.

At present, we see a number of pressing unresolved issues facing the Department for the Control of the Movement of Cultural Property. First of all, it is a revision of the Ukrainian legislation in the field of museum activity in order to prevent a recurrence of the situation with the “Scythian gold” and to speed up the process of resolving it. It is also important to address the issue of providing funding for the Department, necessary for the fruitful and effective work to find and conduct the necessary examinations of cultural property. Quantitative expansion of the employees of the Department is also on the agenda and is a necessary condition for full-fledged activity in the matter of finding and preserving the Ukrainian national cultural heritage.

In this vein, we would like to highlight that the issue of training highly qualified specialists in this field, who would have the appropriate educational level to ensure a professional search and a legally justified opportunity to return the displaced cultural values, is being simultaneously actualized. To do this, it is necessary to improve the system of higher education in Ukraine and adapt it to European standards.

The solution of the pending problems should begin as soon as possible, because, as recent events have shown, the topic of the return of cultural property, legally correct and definitively established by Ukrainian legislation, is not only still relevant, but it is also exacerbating. And this, in turn, has a negative impact on both the international image of our state and the preservation of the historical memory of the Ukrainian people.

Conclusions

Analysis of the longstanding activities of the National Commission for the Return of Cultural Values to Ukraine, the State Service for the Control of the Movement of Cultural Values across the State Border of Ukraine, the Department for the Control of the Movement of Cultural Values regarding the search and return of cultural values from the territories of other countries gives us the conviction that their existence was not in vain. Despite a certain curtailment of state initiatives in searching and returning the cultural values in recent years, these state institutions have done a wide range of multi-vector work.

First of all, the foundations have been laid for long-term intergovernmental cooperation in the field of search, record-keeping, and the return of library collection and documentary archive collection. The documents were returned to the National Archives Foundation; they gave impetus to scientific research on previously unknown pages of Ukrainian history; and they deepened intergovernmental cooperation among the ministries, departments, and scientific and cultural institutions concerned; helped disseminate knowledge about Ukraine worldwide; became one of the factors in the restoration of forgotten names in the historical memory of the Ukrainian people.

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SVERDLYK Z. M.

Київський національний університет культури і мистецтв, Український науково-дослідний інститут архівної справи та документознавства (Київ, Україна),
e-mail: zsverdlyk@gmail.com, ORCID 0000-0002-2104-0920

BOIKO V. F.

Український науково-дослідний інститут архівної справи та документознавства (Київ, Україна), e-mail: vitaminzik5@gmail.com, ORCID 0000-0002-5725-9641

KULESHOV S. H.

Український науково-дослідний інститут архівної справи та документознавства (Київ, Україна), e-mail: posena@ukr.net, ORCID: 0000-0003-1950-9651

Діяльність державних інституцій України у справі повернення культурних цінностей та документальних архівних колекцій

Мета. Метою цієї публікації є дослідження діяльності державних інституцій України щодо виявлення та повернення в Україну історичних, культурних цінностей, бібліотечних фондів та архівних документів. **Методика.** В основу дослідження покладено метод системного аналізу та синтезу, історичний метод, структурно-функціональний аналіз, проблемний метод. **Результати.** На основі архівних документів, законодавчих і нормативно-правових актів, опублікованих досліджень проаналізовано діяльність державних інституцій України у процесі повернення в Україну культурних та історичних цінностей, архівних і бібліотечних фондів. Хронологічні рамки дослідження зумовлені створенням Національної комісії з питань повернення культурних цінностей в Україну після здобуття Україною незалежності та значним звуженням на початку 2000-х років державної політики щодо повернення історико-культурної спадщини. **Висновки.** Результати дослідження показали, що за час існування Національної комісії з питань повернення в Україну культурних цінностей та Державної служби контролю за переміщенням культурних цінностей через державний кордон України, Департаменту контролю за переміщенням культурних цінностей був проведений широкий обсяг багатовекторної роботи, закладені підвалини для майбутньої довготривалої міждержавної співпраці у сфері пошуку, обліку, повернення історико-культурних цінностей, бібліотечних фондів, архівних документів та колекцій.

Ключові слова: пам'ять; історична власність; архівний фонд; бібліотека; бібліотечний фонд; архівна установа; архівний документ; історико-культурна спадщина

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YANTO A.

Department of Library and Information Science, Universitas Padjadjaran (Bandung, Indonesia),
e-mail: andri.yanto@unpad.ac.id, ORCID 0000-0001-7041-0134

PRIJANA P.

Department of Library and Information Science, Universitas Padjadjaran (Bandung, Indonesia),
e-mail: prijana@unpad.ac.id, ORCID 0000-0003-3290-0938

NURSARI T.

Universitas Padjadjaran (Bandung, Indonesia), e-mail: tita19002@mail.unpad.ac.id,
ORCID 0009-0001-5315-3460

The Contribution of Special Libraries in Promoting Social Inclusion in Indonesia

Objective. The majority of special libraries fulfill the information needs of their work environment to support the development and improvement of the duties and functions of the institution and its human resources. However, several service innovations have been carried out by creating social inclusion-based service programs for the general public. One is the Center for Library and Dissemination of Agricultural Technology (PUSTAKA) of the Ministry of Agriculture, Indonesia. This research aims to provide an overview of how the PUSTAKA special library can be involved in creating service innovations for the public through social inclusion programs. **Methods.** The method used is a qualitative method with a library research approach. **Results.** The study results illustrate that PUSTAKA has extended its reach to communities with limited agricultural collections and information access. The library has also become a maker space for entrepreneurship awareness and creativity, enhancing the potential of the community related to agriculture. PUSTAKA serves as a knowledge hub for agriculture, boasting vast agricultural resources. Furthermore, the library uses information technology to provide virtual services, expanding its reach and promoting agricultural literacy in remote areas. PUSTAKA's multifaceted approach to serving the community highlights its commitment to agricultural education and inclusive social services. **Conclusions.** The research concludes that PUSTAKA as a special library has implemented social inclusion in contributing to the community by improving the skills of farmers, promoting agricultural literacy, and extending access to agricultural collections and information.

Keywords: social inclusion; library transformation; special library; information services

Introduction

The library contributes to providing access to the resources it owns and collaborates with various community components in the literacy movement. The library's presence is expected to enhance the knowledge and skills of the community. This aligns with the primary goal of a library, which is to make the community lifelong learners (Lusiana, Yanto, & CMS, 2023). The existence of libraries in Indonesia is closely related to the overseeing institution of the library. One example is the libraries that operate under government ministries or agencies to serve the readers associated with their overseeing institutions.

The majority of special libraries fulfill the information needs of their work environment to support the development and improvement of the duties and functions of the institution and its human resources. However, several service innovations have been carried out by creating social inclusion-based service programs for the general public. One such special library is the Center for Library and Dissemination of Agricultural Technology (PUSTAKA) of the Ministry of Agriculture, Indonesia. The Center for Library and Dissemination of Agricultural Technology (PUSTAKA) of the Ministry of Agriculture is one of the special libraries that provides information for the public, particularly for the farming community. The literacy movement has become a

national collective effort that involves multiple stakeholders to create a literate society, as stated by Suharso et al. (Suharso, Yanto, Rohman, Wiratningsih, & Saefullah, 2018).

PUSTAKA has also established Reading Gardens as a socially inclusive library facility by implementing programs that actively involve the community in response to and in support of socially inclusive library policies to enhance the quality and well-being of society. Special government institution libraries also have a responsibility to provide information access across various scopes (Sembiring & Wijayanti, 2020).

Lusiana et al. (2022) mention that TBM (Reading Gardens) serves as a complete and up-to-date information hub for developing knowledge, skills, and behaviors/attitudes. TBMs have evolved into learning centers, and some have taken on the role of empowerment centers for the community (Lusiana, Yanto, Anwar, & Komala, 2019). TBMs are institutions that facilitate personal and community development, especially in promoting a reading culture among the public (Yanto, Rodiah, & Lusiana, 2016). TBM provides reading materials as a source of community learning. The existence of this reading is expected to support lifelong community learning and can add insight in applying various practical skills directly, such as farming (Dwiyantoro, 2019).

Social inclusion-based literacy programs conducted by the special library PUSTAKA can play a role and serve as a model for other government institution libraries (Sembiring & Wijayanti, 2020). PUSTAKA has developed programs aligned with the Ministry of Agriculture's mission to achieve advanced, self-sufficient, and modern agriculture with the goal of sustainable prosperity and sovereignty for farmers (Sutarsyah, Rufaidah, & Suryantini, 2021). These programs are in line with PUSTAKA's core responsibilities of managing libraries and disseminating information on agricultural knowledge and technology. The information collected indicates that PUSTAKA has made efforts to provide agricultural information in digital form available over the internet for readers, farmers, and the general public in need of agricultural information. This research aims to provide an overview of how the PUSTAKA special library can be involved in creating service innovations for the public through social inclusion programs.

Methods

The method used in this study is library research. According to Zed (2008), library research is a method that involves collecting data by understanding and studying theories from various literature related to the research. There are four stages of library research in this study, including preparing the necessary tools for literature search, preparing a working bibliography, organizing time, and reading or taking notes on research materials. The research materials include journals related to social inclusion services in special libraries and various reports related to socially inclusive activities in special libraries. All the obtained library materials are analyzed thoroughly to strengthen the propositions developed in this study.

Results and Discussion

The development of internet-based communication technology and digital technology has enabled the public to access a vast amount of information quickly. Almost all types of information are available in various forms, including text, images, and videos. However, many community members still need help selecting and accessing information that suits their specific needs. One such group is farmers and those interested in agriculture who need help accessing specialized information. In this case, the role of special libraries is so important in providing and disseminating information for communities with specific needs. Now, the role of special libraries is not only felt

by certain communities, but society in general. The social inclusion concept helps special libraries contribute more to society.

Special libraries have helped people increase their abilities and awareness regarding social issues that are rarely paid attention to. They have special programs to attract people to get involved in various programs that can provide more insight and skills to the community. Social inclusion has become a concern in several parts of the country, which has become a concern in improving social justice for society. In social inclusion activities, the use of technology is very useful for improving services and increasing access so that the programs implemented can have more impact.

Technology-based literacy activities are also carried out by PUSTAKA. Information literacy activities are carried out to support the Ministry of Agriculture's program in realizing advanced, independent and modern agriculture. All information literacy activities that have been carried out virtually can be watched on the Youtube channel PUSTAKA Ministry of Agriculture's. Like the activities carried out by the special library in China, namely, the Human Library, through a web-based project, StoryAd (jchumanlibrarieshub.asia or human.asia), involves the public to create stories about social issues such as disabilities, gender identity issues, and mental illness, which are then published on the website. In the next stage, story readers can invite the main characters of the story to meet face-to-face through a workshop.

Chan (2019) found that the StoryAd model turns audiences into partners and collaborators through the stories they collect. Through the workshops, participants demonstrated increased open-mindedness and positive attitudes toward themselves and were open to other people's points of view. In America, medical libraries achieve social inclusion through social justice by implementing various programs providing health information to the HIV/AIDS community and communities suffering from mental illness (Martin, 2019). Libraries network with community-based organizations to further advance social justice by increasing information literacy in underserved populations. The library also developed special mechanisms to access HIV/AIDS community-based information.

In Indonesia, PUSTAKA, a specialized library focused on agricultural information and the dissemination of agricultural technology, has extended its reach to communities with limited access to agricultural collections and information. This outreach is achieved by establishing a library lab in Balubangjaya, Bogor, called Taman Baca Pustaka. PUSTAKA can serve the dual purpose of promoting literacy and increasing reading interest among the community while simultaneously expanding the dissemination of advanced, self-sufficient, and modern agricultural technology to the people of Bogor (Sembiring & Wijayanti, 2020).

This expansion has blurred the boundaries of functions and user coverage for special libraries. Socially inclusive libraries offer an opportunity for PUSTAKA to broaden its functions and services to a wider audience according to the information it manages, which is related to agriculture (Sembiring & Wijayanti, 2020). Here are various social inclusion activities conducted by PUSTAKA as a specialized library within the community:

Providing Community Skills Training

PUSTAKA's services go beyond offering digital information; they also provide socially inclusive services as a means of transforming the library. PUSTAKA in Bogor plays a significant role in enhancing the theoretical and practical knowledge of the community regarding agriculture. Previous research has shown that specialized libraries are transforming by expanding their service coverage and functions (Sembiring & Wijayanti, 2020).

In addition to being a center for knowledge with facilities, services, and various print and digital collections, PUSTAKA also acts as a cultural center and community activity hub (Sutarsyah, Rufaidah, & Suryantini, 2021). PUSTAKA's role in providing training and workshops in the Laboratory of Social Inclusion-Based PUSTAKA, Taman Baca PUSTAKA Darmaga,

encourages farmers and the community to apply agricultural science and technology. Hydroponic plant collections are educational tools to promote sustainable home gardening, especially for Women Farmers' Groups (KWT), enabling them to utilize their surroundings for sustainable food production.



Fig. 1. Training Activities on Hydroponic Plants for KWT

Source: pustaka.setjen.pertanian.go.id (PUSTAKA News, 2020c, 2020a)



Fig. 2. Vegetable Harvesting by KWT Group

The Laboratory of Social Inclusion-Based PUSTAKA, Taman Baca PUSTAKA Darmaga, has benefited the local community. This Laboratory become the activity center for the community, it provides a place for the community completed with library materials and other facilities to encourage them to develop community potential related to agriculture by some activities, such as trainings, workshops, reading, and other activities.



Fig. 3. The Launching of Laboratoty of PUSTAKA

Source: pustaka.setjen.pertanian.go.id (PUSTAKA News, 2020b)

The Locals views the laboratory as not just a place for reading books but also as a recreational center for urban agriculture due to its attractive and modern agricultural garden. Urban farming communities/Women Farmers' Groups use the Laboratory of PUSTAKA as a venue for community activities searching for literature to support their knowledge and understanding of farming (Lusiana et al., 2023). According to Lusiana et al. (2023), literacy programs at TBM can

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help improve people's life skills by providing empowerment, training, and mentoring, which have a positive impact on individual abilities and skills.

In social inclusion activities, the Laboratory of Social Inclusion-Based PUSTAKA also serves as a central hub for the production and distribution of seeds to ensure the availability of plant supplies in each KWT member's home. This focus on urban farming aims to intensify the use of local resources for quality and diverse household food production, contributing to local food security (Junaidi, 2022). The agricultural literacy activities carried out by urban farming communities need to be replicated by the government to enhance the literacy and agricultural knowledge of the wider population.



Fig. 4. Training on Post-harvest for the Community by PUSTAKA
Source: pustaka.setjen.pertanian.go.id (PUSTAKA News, 2022)

This picture shows that PUSTAKA collaborated with private companies to hold technical guidance (bimtek) activity called "Training on Standard Operating Procedures (SOP) for Postharvest Honey Potatoes". The utilization of the Laboratory of PUSTAKA, as mentioned by Suhendra (2022), serves as a maker space that contributes to entrepreneurship awareness, fosters a creative environment, and allows for the prototyping of innovative farming practices by KWT members. Makerspaces are understood as places providing various resources for patrons to develop creative ideas. Similarly, the Laboratory of PUSTAKA, as part of the Social Inclusion-Based Library program, offers a place for the community with library resources and other facilities to encourage the development of the community's agricultural potential.

As a Center for Agricultural Knowledge

PUSTAKA's role as a center for agricultural knowledge is evident, with a rich collection of agricultural resources dating back to 1842. The collection includes printed and electronic works, as well as various digital resources, both from Indonesia and abroad. PUSTAKA also subscribes to online journals to support its users (Sutarsyah, Syaikh, & Junaidi, 2021). PUSTAKA's digital collection is comprehensive and accessible online, thanks to the iTani portal, a repository of agricultural knowledge. PUSTAKA's vast collection of information, both in print and digital formats, also includes antiquarian books. Four distinct areas with unique functions complement PUSTAKA's offerings: (1) PUSTAKA Juanda 20, housing print and electronic collections, as well as antiquarian books; (2) the Digital Library of Agricultural Knowledge (P3D); (3) the Museum of Soil and Agriculture; and (4) Taman Baca Dramaga (Sutarsyah, Rufaidah, & Suryantini, 2021).



Fig. 5. Dissemination of Agricultural Information to the Public by PUSTAKA
Source: pustaka.setjen.pertanian.go.id (2023a)

Providing Information Technology-Based Library Services

Information technology and communication technologies can provide information over long distances. PUSTAKA utilizes this capability to expand its digital information services with virtual services. PUSTAKA launched the Virtual Literacy (VL) program in March 2020, focusing on agricultural literacy based on interactive communication to bring PUSTAKA's services to audiences in remote locations, tagged with the slogan "Library Comes to You" (Sutarsyah, Rufaidah, & Mulyandari, 2020). The Virtual Literacy program is expected to enable farmers to effectively use virtual information services, improving their understanding of agricultural practices and empowering them as entrepreneurs.



Fig. 6. Introduction to Organic Rice Cultivation through Virtual Literacy by PUSTAKA
Source: pustaka.setjen.pertanian.go.id (2023b)

The Virtual Reality program implemented by PUSTAKA is divided into four categories: (1) Virtual literacy for Ministry librarians; (2) Virtual literacy for researchers, extension workers, and policymakers in the Ministry of Agriculture; (3) Virtual literacy to support Strategic Development Command programs; and (4) Virtual literacy between Ministries and Agencies. Through virtual reality programs, farmers receive training in various aspects of agriculture and gain access to funding and guidance from planting to marketing, enabling them to achieve optimal profits.

Conclusion

In conclusion, PUSTAKA has extended its reach to communities with limited access to agricultural collections and information, contributing to the community by improving the skills of farmers related to crop pest management, from planting to post-harvest. The library has also become a maker space for entrepreneurship awareness and creativity, enhancing the potential of the community related to agriculture. PUSTAKA serves as a knowledge hub for agriculture, boasting a vast collection of agricultural resources. Furthermore, the library uses information technology to provide virtual services, expanding its reach and promoting agricultural literacy in remote areas. PUSTAKA's multifaceted approach to serving the community highlights its commitment to agricultural education and inclusive social services.

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YANTO A.

Кафедра бібліотекознавства та інформатики, Університет Паджаджаран (Бандунг, Індонезія), e-mail: andri.yanto@unpad.ac.id, ORCID 0000-0001-7041-0134

PRIJANA P.

Кафедра бібліотекознавства та інформатики, Університет Паджаджаран (Бандунг, Індонезія), e-mail: prijana@unpad.ac.id, ORCID 0000-0003-3290-0938

NURSARI T.

Лауреат премії LPDP (Бандунг, Індонезія), e-mail: tita19002@mail.unpad.ac.id, ORCID 0009-0001-5315-3460

Внесок спеціальних бібліотек у сприяння соціальній інтеграції в Індонезії

Мета. Більшість спеціальних бібліотек задовольняють інформаційні потреби свого робочого середовища, підтримуючи розвиток і вдосконалення обов'язків і функцій установи та її людських ресурсів. Проте кілька інновацій у сфері послуг було здійснено шляхом створення програм обслуговування для широкої громадськості, що базуються на соціальній інтеграції. Однією з них є Бібліотечний центр розповсюдження сільськогосподарських технологій (PUSTAKA) Міністерства сільського господарства Індонезії. Це дослідження має на меті надати огляд того, як спеціальна бібліотека PUSTAKA може бути залучена до створення інноваційних послуг для громадськості через програми соціальної інклюзії. **Методика.** Використано якісний метод бібліотечних досліджень з описовим підходом. **Результати.** Результати дослідження ілюструють, що PUSTAKA робить свій внесок у розвиток громади з обмеженими сільськогосподарськими колекціями та доступом до інформації. Бібліотека також стала мейкерським простором для підприємницької обізнаності та креативності, підвищуючи потенціал громади, пов'язаний із сільським господарством. PUSTAKA є центром знань з сільськогосподарської тематики, маючи у своєму розпорядженні величезні ресурси по сільському господарству. Крім того, бібліотека використовує інформаційні технології для надання віртуальних послуг, розширюючи охоплення та сприяючи підвищенню сільськогосподарської грамотності у віддалених районах. Багатогранний підхід PUSTAKA до служіння громаді підкреслює її відданість сільськогосподарській освіті та інклюзивним соціальним послугам. **Висновки.** Дослідження дійшло висновку, що PUSTAKA як спеціальна бібліотека впровадила соціальну інклюзію, зробивши свій внесок у розвиток сільськогосподарської освіти в регіоні.

Ключові слова: соціальна інтеграція; трансформація бібліотеки; спеціальна бібліотека; інформаційні послуги

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MYKYTENKO N. O.

Ivan Franko National University of Lviv (Lviv, Ukraine),

e-mail: nataliya.mykytenko@lnu.edu.ua, ORCID 0000-0003-4975-4404

KOTLOVSKYI A. M.

Ivan Franko National University of Lviv (Lviv, Ukraine), e-mail: kotland@ukr.net,

ORCID 0000-0001-6320-0235

The Specifics of the Elective “School of Leadership” Using Repositories of Online Resources

Objective. Modern online library resources play an important role in the organisation and conduct of the School of Leadership elective. The purpose of this study is to consider the peculiarities of conducting the elective “School of Leadership” for applicants using online resource repositories. **Methods.** A comprehensive approach to the study of the problem led to the use of such theoretical research methods as the analysis of philosophical, pedagogical, psychological and sociological literature to identify the specifics of leadership and leadership competence, the analysis of repositories of online resources, synthesis, comparison, generalization of various scientific approaches to the basic concepts of the study and determination of the specifics of the organization and conducting the elective “School of leadership”. **Results.** The work clarifies the essence of the concepts “leadership competence”, “elective”, “elective class”, discloses the peculiarities of organization and conduct, main tasks, content modules, organizational and pedagogical conditions of the elective “School of leadership”. The work describes the knowledge and skills that students will be able to improve and develop thanks to a properly planned and organized elective using the resources of online repositories. Particular attention is paid to the features of ensuring the effectiveness and efficiency of the elective for the formation of students’ leadership competence and the content of the elective “School of leadership”, which depends on the achievement of the set goal, aims and tasks for the development of student-leaders. **Conclusions.** The main results that were obtained within the framework of this scientific research should be considered the substantiation of the concept of “elective” and the description of the specifics of the organization and the conducting of the elective “School of leadership” for students. The results of this scientific research, as well as the conclusions formulated on their basis, are of practical value for scientists, teachers of educational institutions, psychologists and other specialists who are engaged in the study of leadership problems and the formation of leadership competence and the search for effective methods, means and forms of work for the development of applicants’ leadership potential.

Keywords: leadership; leader; leadership competence; leadership potential; elective; libraries; repository; online resources; applicant

Introduction

In the modern conditions of the development of society, technology and science, there is a need for erudite, qualified, effective and goal-oriented workers-leaders who have pronounced organizational competences, an inner desire for social activity, who are able to unite people around them to achieve their goals, are ready to long and intense work in order to create favorable conditions for further development. Moreover, it is not enough for modern specialists to possess only developed professional knowledge, skills and qualities, but also it is necessary to have developed leadership competencies and qualities that enable them to quickly adapt to environmental changes, find the right solutions in various difficult situations, be self-confident, persistent and determined. In view of this, the development of applicant’ leadership competence is a necessary requirement and need of modern times. One of the ways to develop the students’ leadership competence is electives. In the modern scientific literature, special attention is paid to the issues of formation of leadership abilities, qualities and competencies of applicants, more in a theoretical plan than in a practical one. The practical aspects of leadership development remain outside the attention of researchers, in particular, consideration of the specifics of conducting

electives, trainings, special courses, lectures, etc. as effective means of forming students' leadership competence.

Nelia Lebid claims that leadership competence is a set of personal characteristics of a human being and his professional abilities, which under certain external and internal conditions ensure his influence on the results of the work of other people who are subordinate to him (Lebid, 2016, p. 45).

Liudmyla V. Lishtaba emphasizes that leadership competencies are skills and abilities that provide an opportunity to influence others (Lishtaba, 2016, p. 120).

Diana A. Volkivska (2014) believes that leadership competence consists in the ability to predict, i.e. notice the slightest signs of changes, emerging trends, as well as quickly react to changes and show flexibility in order to quickly respond to new demands of the environment, to align, i.e. to reconcile one's own values and needs with values and the needs of other people in order to form a team and its effective and coordinated activity and to act, that is, to create conditions for achieving the goal and persistently move towards it.

As for the means of forming leadership competence, the researcher O.D. Pavlyuk pays special attention to the training and believes that the purpose of the training is to expand students' ideas about leadership as a way of organizing and managing a small group, to develop leadership qualities of students and to activate their personal leadership potential in the process of developing self-management and group management skills. According to the researcher, the main tasks of the training are students' acquisition of knowledge about the nature and essence of leadership and leadership qualities, their identification of their own leadership potential and individual leadership style, development of students' leadership qualities and individual leadership style, assessment of students' leadership qualities using psychodiagnostic methods during training, development of students' skills in regulating their emotional state, self-analysis skills and working in a group (Pavlyuk, 2019, p. 29).

Tetiana O. Kononova emphasizes that a special place in the field of leadership formation is occupied by electives and optional courses aimed at forming a general idea of the essence of leadership, the importance of leadership competencies in professional activity, its components and functions. According to the researcher, it is necessary to use active forms and methods of learning in optional classes, including business games, lectures-discussions, brain-rings, analysis of specific situations, etc., because such methods and forms of work give the greatest effect (Kononova, 2014, p. 170).

Mykhailo M. Fitzula (2006) claims that it is important to develop such students' leadership competencies in elective classes as the ability to make decisions and avoid unfavorable situations or, on the contrary, master the methods of psychological influence. It should also be taken into account that the elective can consist not only of students of the same group, but also of students from parallel groups, different courses and faculties. This opens up opportunities for leadership, competition, and opportunities for multifaceted communication and collaboration. Therefore, in elective classes, it is important to have the opportunity to freely exchange ideas, joint practical and independent tasks, experiments or projects.

Nataliia Logvinenko notes that optional classes not only form students' interest and their positive attitude to the educational process, but also encourage students to open up, show their "self", develop leadership potential, get rid of categorical forms of thinking, open their consciousness to new ideas and perspectives, develop the ability to apply leadership skills and abilities in practice, use effective methods of getting out of stressful, conflict and crisis situations, use tactics of reasonable persuasion, increase team effectiveness, organize training within the organization, manage emotional intelligence. In addition, elective classes teach students to constantly move forward, make decisions in difficult situations, see perspectives, achieve goals

and solve set tasks, establish cooperative relationships, adapt to changes, interact with bearers of other leadership styles during decision-making, their implementation, form a team, manage personnel and changes, etc. (Logvinenko, 2011, p. 45).

The intrinsic value in the educational process have online resources. Students can use materials about leadership gained either from educational institutions or platforms supported by businesses. Efforts to establish communication with professional organizations, for example The International Leadership Association, provide the students with an access to valuable toolkits and open new opportunities for future career.

As we can see, the problem of leadership has been and continues to be one of the most researched topics among many scientists, because society needs leaders and organizers who possess the skills of effective personnel management, are capable of empathy, and are ready to carry out activities based on personally oriented interaction.

Aim. Today, many libraries around the world and in Ukraine in particular provide a variety of online services. Each university library is represented on the web, where any user can get acquainted with the services it provides. These include an electronic catalog of the library's collections, online search, ordering and delivery of literature, video lessons and lectures, own full-text databases, use of social networks, and an e-archive of full-text documents posted in open access repositories. About 100 institutional repositories of Ukrainian universities are represented in the Webometrics ranking "Transparent Ranking: Institutional Repositories from Google Scholar" (Eurosvita, 2023). These resources contribute to the development of leadership competencies and the acquisition of leadership, communication, teamwork, public, personal and other skills necessary for career development. Therefore, these resources should be actively used during the School of Leadership elective.

The purpose of this study is to consider the peculiarities of conducting the elective "School of Leadership" for applicants using online resource repositories. It is worth noting that modern library online resources play an important role in organizing and conducting the elective "School of Leadership". Today, many libraries in Ukraine provide a variety of online services.

The objectives of this article are as follows: 1) analysis of scientific approaches to the problem of determining the essence of leadership competence and the elective as an effective means of its formation; 2) identifying the specifics of the organization and holding the elective "School of leadership" for applicants using repositories of online resources.

Methods

The basis of the methodological approach in this work is a complex systematic study, which is based on a qualitative combination of theoretical research methods. In particular, analysis, synthesis, generalization, interpretation, abstraction, as well as descriptive, comparative, comparison method, and comparative-historical method were applied for a detailed examination of the essence of elective classes and features of conducting the elective "School of leadership" for applicants namely by means of repositories of online resources.

Results

In the conditions of the intensive European integration process in Ukraine, the problem of forming a strong, creative, leadership personality becomes extremely important, because any link in the social sector needs such a specialist who is able to unite people around him to achieve the set goals, to create favorable conditions for further development. Accordingly, any educational institution today faces the task of developing the student as a leader and professional in his field,

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teaching him to make decisions on his own, developing his leadership abilities and independence (Bespartochna & Skrebkova, 2022, p. 18). However, at the current stage, a large number of students have hidden leadership potential, but they do not reveal it for various reasons. As a result, there is a decrease in interest in other people, there is a lack of interaction, cooperation and partnership skills, and a lack of motivation. For this reason, it is necessary to develop and implement in practice a training system that prepares leaders (Yemchuk & Chubrei, 2022, p. 123).

We strongly believe that one of the effective means of forming students' leadership competence is elective classes, in particular the elective "School of leadership". First of all, it is worth noting that an elective (lat. facultatis – optional, from lat. facultas – opportunity, ability) is an educational course, a subject that is optional for students of an educational institution to attend in order to expand and deepen their knowledge. Elective classes are one of the forms of organizing the educational process, which are held outside of classes for students to deepen their knowledge of various subjects, which depends on the requests, inclinations and abilities of students (Logvinenko, 2011, p. 46). The elective is based on the principle of voluntariness, but despite this, attendance at the elective is mandatory for enrolled participants.

It is worth noting that the main tasks of electives are the following:

- development of abilities and personal qualities of students;
- development of leadership qualities and abilities of applicants;
- deepening and expanding professional knowledge of students;
- development of creative abilities, creativity, independence and organization of students;
- formation of students' interest in science and self-improvement;
- development of organizational skills – that is, the student must be able to organize personal educational and professional activities;
- formation of stress resistance and the ability to achieve set goals.

For high performance and efficiency of electives, it is necessary to organize electives only taking into account the following principles:

1) the principle is aimed at the freedom and independence of the student, the student's right to his own choice and self-expression, in such classes the student should feel free and aware of himself as a future specialist-leader. This is a kind of democracy, which involves the rule of trust, politeness, freedom of thought and free expression of students' own assumptions in classes;

2) the principle of revealing personal factors – creative abilities, talents, leadership qualities, that is, the student must reveal himself as a person to the full extent;

3) the principle of expanding the spheres of communication – communication in a new team, exchange of ideas, information, the opportunity to analyze the work of other students, correct, give advice and even give an assessment. After all, communication promotes the exchange of additional educational information, broadens the horizons of students, enriches their emotional and sensory sphere during contact with other people.

As for the elective "School of leadership", it is aimed at forming a general understanding of the essence of leadership, the importance of leadership competencies in professional activity, their components and functions. The task of this elective course is to deepen students' knowledge about themselves, their psychological characteristics, their awareness of their actions and thoughts, strengthening positive personality qualities, acquiring skills of adequate behavior in certain social situations, practicing organizational and communication skills that characterize the personality of a group leader, as well as forming a strategy of leaders' actions to transfer acquired knowledge and skills to the entire student body.

The content of the elective involves the presence of several content modules. Such modules may include: leadership and power; similarity and difference; structure and dynamics of

leadership; leader's legitimacy; signs of a potential leader; the means by which a special socio-psychological role or "myth" of the leader is created; psychological foundations of leadership; the meaning of human existence and professional activity from the standpoint of philosophical and historical culture; moral foundations of professional activity; formation of special skills of influence on communication partners; ways of influencing people, etc.

The specified content modules provide consideration of a wide range of issues, among which the main ones are: the difference between leadership and management; the essence of the concepts "leadership", "leadership competence", "leader"; leadership as a qualitatively new level of management; leadership assessment criteria; leadership and charisma; types of leadership; basic theories of leadership and types of leaders; the main roles, functions, qualities and skills of a leader; portrait of a modern leader; world leaders whose work inspires youth, etc.

Thus, during elective classes, students must acquire knowledge about the characteristics of leadership, power and management; differences between a leader and a manager; basic theories of leadership; basic requirements for leadership qualities of a manager; variety of leadership styles; effective communication algorithm; features of conducting business negotiations; basics of conflict and stress management.

For example, the first class of the elective "School of leadership" should be organized in the form of an interactive lecture and using video materials that reveal the essence and content of the leadership phenomenon, the historical origins of leadership, theories and concepts of leadership; division, types and criteria of leadership; basic principles of leader behavior. In groups, you can discuss the following important questions: What is leadership for you? Is it an innate ability or can it be developed? Is it easy to be a leader? Why do we need leadership? Other classes should be made practical, in which the participants of the elective will learn about the basics of leadership and will work on developing and improving the main components of leadership competence, performing various exercises and tasks. In addition, in practical classes and in the process of independent work, students should learn to form requirements for leadership qualities; distinguish leadership from management; analyze leadership styles; to reveal one's own leadership potential; conduct an analysis of resources and limitations for building leadership potential; use techniques, methods of acquiring authority in the team; use technologies to strengthen leadership positions in emotionally tense, problematic and conflict situations; to have self-analysis skills; have an active communication style, be able to establish and maintain partnership relations; take into account the consequences of management decisions and actions from the standpoint of social responsibility; to design the organizational structure of the institution, to distribute powers and responsibilities based on their delegation; analyze and design interpersonal, group and organizational communications.

As you can see, the elective program covers the concepts of the social and psychological content of leadership, power, authority, charisma, group dynamics, problems of the effectiveness of group activity and group cohesion, features of effective management, group management, use of decision-making mechanisms, management of conflicts and conflict situations. At the elective "Leadership School" it is necessary to use active methods and forms of work, for example, business games, discussions, round tables, seminars-workshops, competitions, webinars and verbal methods, such as a story, a conversation, an explanation, a narrative, a discussion, a polemic, a discussion, etc. (Bratko, 2022, p. 71).

An unrestricted access to repository of online materials and information about leadership is provided by Oxford University Press and the International Graduate School of Leadership (the Philippines). In 2022, OUP published over 22,000 open access articles, and retains the second highest mean lifetime citation rate for OA articles among major competitors, demonstrating the reach, quality, and impact of our publishing (www.academic.oup.com). IGSL Library has an

ebook lending platform offering content across all subject areas with a growing collection of more than 200 000 titles from major publishers worldwide. The largest B2B content and free ebook offers for professionals can be found on TradePub.com, Leadr. The members of TradePub enjoy free unlimited access to free research, white papers, reports, case studies, magazines, and eBooks. The Manager's Toolkit offered by Leader contains popular ebook's and pdf resources that are full of practical, action-orientred steps managers can take to lead their teams (www.insights.leadr.com).

The International Leadership Association is a global community of leaders, educators and leadership resedearchers that advance the study and practice of leadership. By becoming a member of ILA students can be equipped with resources that will propel them towards new heights of excellence. ILA's book series offer the best contemporary thinking about leadership from diverse range of scholars, educators and practitioners (Building Leadership Bridges). They enjoy free access to numerous journals, blogs, videos pertaining to the study and practice of leadership (www.ilaglobalnetwrk.otg).

Though students are unlilely to be enrolled on training programs offered by some companies. But they can use some mobile applications/ For example, in 2012 Vital Learning released a mobile application, Vital Learning Pocket Coach for Supervisors, launching a new trend in delivering and consuming training content (www.vital-learning.com/about-us).

It is worth noting, that libraries also play an important role in building students' leadership competence by providing access to knowledge, information, and resources that can contribute to the development of students as future leaders. Libraries give access to information, they contain extensive collections of books, journals, scholarly articles, electronic resources and other sources of information. This provides students with access to current knowledge and research in a variety of fields, which is the foundation for developing their expertise and leadership skills. Libraries help students develop research skills, including locating information, evaluating sources, analyzing data and writing literature reviews. These skills are critical for leaders as they must make informed decisions and manage projects.

Furthermore, libraries usually provide quiet spaces for study and research, as well as spaces for group work. This fosters self-management and teamwork skills, which are important for future leaders. Librarians can assist students in finding the right resources, teaching information literacy, and even advising on research. This helps develop communication and counselling skills that are important for leaders. Modern libraries also provide access to digital resources and technology to help students develop skills related to data processing and the latest information technology.

For example, the Scientific Library of the Ukrainian State University of Science and Technology (USUST) is a modern library aimed at meeting the information needs of the university community in educational, research, pedagogical and managerial practice by providing resources and services and creating information products (<https://library.ust.edu.ua/uk>).

The library finds ways to provide quality service to its readers. The issue of the lack of modern Ukrainian-language educational publications and the provision of quality distance learning is relevant today. This can be solved with the help of Open Educational Resources (OER). For this purpose, the scientific library of the Ukrainian State University of Science and Technology (USUCT) conducts extensive educational work to encourage other universities to join this movement. The website of the scientific library presents a series of video lectures for Ukrainian universities "Open Education and Open Educational Resources: Importance for Ukrainian Higher Education" (Scientific Library of the Ukrainian State University of Science and Technologies, 2023). The library's website provides access to the open online course "Using Open Educational Resources in Teaching" from the Politecnico di Milano (Italy) https://www.pok.polimi.it/courses?search_query=OER101/. Over the past two years, together

with the authors-teachers of USUCT, the library staff has been actively involved in the preparation of textbooks and manuals using the Creative Commons license. The use of online services and information provided by the USUCT Scientific Library will be useful for future leaders and teachers who organize the elective “School of leadership”.

Within the framework of conducting the elective “School of leadership” it is necessary to first of all provide such organizational and pedagogical conditions under which the process of forming the leadership competence of applicants would take place most effectively. Such conditions include the following:

the need to implement the interaction of state and public institutions in the formation of socially significant personal qualities of students;

1) creation of a complete system of effective communication in the activities of teaching staff and students of education in an educational institution;

2) ensuring the inclusion of students in a real system of social relations within public organizations and study groups of an educational institution;

3) correspondence of the internal position to the system of pedagogical influences;

4) creation of a positive spiritual and moral climate in the educational institution in general and in each student group, an atmosphere of mutual assistance, responsibility for the performance of professional and official duties;

5) emotional adaptation of students in an educational institution, confidence in their abilities and the importance of their chosen professional path.

Adhering to the above-mentioned organizational and pedagogical conditions, participants of the elective “School of leadership” get the opportunity to improve:

- leadership skills to defend one’s point of view and position;
- mastery of planning and organizing one’s activities;
- the art of working independently and in a team, interacting as a whole;
- organizational skills,
- the ability to assess and use one’s own potential and the potential of the team.

Moreover, having created the above conditions, participants of elective classes will be able to:

- identify the characteristics of the leader’s behavior;
- work on using their leadership qualities and abilities;
- learn about their role in the team, effective interaction with other team members;
- learn about their strengths and weaknesses in order to use them when solving various situations;

• try out a variety of behavioral strategies and understand their own work and leadership style;

- realize one’s hidden possibilities and one’s own potential;
- become a leader who inspires others to action thanks to his own example;
- work on self-improvement and develop their uniqueness.

Results and Discussion

The task of any educational institution is to promote the development of students’ leadership competence and their creative potential, self-realization of the individual, to form readiness for personal self-improvement and self-development. In view of this, the problem of developing a purposeful system of work for the development and activation of the leadership potential of young people is particularly acute today. As it was mentioned, one of the effective

means of developing students' leadership competence is elective classes. The conducted research allows us to state that the organization and implementation of the elective "School of leadership" is a complex task that requires thorough preparation, strong knowledge of the teacher and taking into account a number of features.

The effectiveness of elective classes and the formation of leadership competence on them largely depends on the teacher. Important in this aspect is the degree of competence of the teacher himself, the ability to rationally apply and combine forms and methods of education. In this case, the creative abilities and individual approach of the teacher occupy almost the first place. That is why experienced teachers should conduct and organize electives. It is even advisable to invite teachers from other educational institutions to conduct electives.

According to the researcher N. Logvinenko (2011), in the conditions of elective classes, a necessary condition is correctly selected ways of pedagogical influence on the formation and development of cognitive interests, both professional and general. And therefore, the leading role of the teacher in the formation of leadership competence in elective classes is undeniable. Actually, individualization and methodical support depend on the professionalism and training of the teacher, on which the effectiveness of independent work of students depends. The teacher acts not only as a leader, but also as an instructor, consultant, organizer, who is faced with the task of interest, motivation and encouraging students to take action (p. 46).

In addition, it was found that available repositories of online resources with unlimited access aid learning providing up-to-date and cutting edge materials. A wide range of topics, issues and cases curated by academic, educational institutions and businesses give an extensive insight into leadership. Moreover, "School of leadership" should teach a young person to demonstrate and develop basic leadership qualities and competently use their leadership potential; to improve the skills and abilities of possessing charismatic influence, principles of flexibility, basic technologies of self-motivation and management.

The results obtained within the scope of this scientific research, as well as the conclusions formulated on their basis, can be used as an effective scientific base for further study of the problem of leadership competence formation in elective classes in modern educational institutions. In addition, the materials of this article can be used by scientists who deal with the problems of studying the specifics of conducting the elective "School of leadership" for students, teachers and various other specialists who study issues related to the phenomenon of leadership, the formation of leadership competence and the development of leadership potential of applicants.

The prospect of further research of this issue is, first of all, the implementation of a deeper study of electives as a means of forming the leadership competence of student youth in a modern educational institution, as well as an experimental verification of the effectiveness of the elective "School of leadership".

Limitations. The study includes some methodological limitations and limitations of the researcher. To the methodological limitation belong lack of available and reliable data and lack of prior research studies on the topic. To the limitations of the researcher belong longitudinal effects, cultural and other type of bias.

Conclusions

The carried out scientific study of the features of conducting the elective "School of leadership" for applicants provides grounds for formulating the following conclusions.

It was determined that the elective "School of leadership" is aimed at forming a general understanding of the essence of leadership, the importance of leadership competencies in professional activity, their components and functions. Its main task is to deepen the knowledge of

students about leadership and leadership competence, to stimulate creative and social activity and initiative of young people, to form students' responsibility for the changes taking place in their lives and in their further successful professional career. Having in-depth online resources about leadership at students' finger-tips equips them with requisite expertise and fosters prospective qualification in administration, management, governorship, etc.

The process of organizing and conducting the elective "School of leadership" should be aimed at creating favorable conditions for the self-realization of each student, revealing his or her leadership qualities and leadership potential, activating and improving the individual experience of each young person, making him or her aware of his or her own characteristics and resources, helping everyone to set individual goals in education and social life to improve themselves as a leader and their environment. It is also important to use all available resources to effectively organize and conduct this elective. One of these resources is online library resources that provide access to a large amount of diverse information that can be used to successfully organize the School of Leadership elective and develop students' leadership competencies (Kolesnykova, 2023; Kolesnykova, Gorbova, & Shcherbatiuk, 2022).

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МЯКІТЕНКО Н. О.

Львівський національний університет імені Івана Франка (Львів, Україна),
e-mail: nataliya.mykytenko@lnu.edu.ua, ORCID 0000-0003-4975-4404

КОТЛОВСЬКИЙ А. М.

Львівський національний університет імені Івана Франка (Львів, Україна),
e-mail: kotland@ukr.net, ORCID 0000-0001-6320-0235

Специфіка роботи факультативу «Школа лідерства» з використанням репозиторіїв онлайн-ресурсів

Мета. Сучасні бібліотечні онлайн-ресурси відіграють важливу роль в організації та проведенні факультативу "Школа лідерства". Мета дослідження полягає у розгляді особливостей проведення факультативу «Школа лідерства» для здобувачів освіти з використанням репозиторіїв онлайн-ресурсів. **Методика.** Комплексний підхід до дослідження проблеми зумовив використання таких теоретичних методів дослідження, як аналіз філософської, педагогічної, психологічної та соціологічної літератури для виявлення специфіки лідерства та лідерської компетентності, синтез, порівняння, узагальнення різних наукових підходів до основних концепцій вивчення та визначення специфіки організації та проведення факультативу «Школа лідерства». **Результати.** У роботі з'ясовано сутність понять «лідерська компетентність», «факультатив»,

«факультативне заняття», розкрито особливості організації та проведення, основні завдання, змістові модулі, організаційно-педагогічні умови факультативу «Школа лідерства». У роботі описано знання та вміння, які здобувачі освіти зможуть вдосконалити та розвинути завдяки правильно спланованому та організованому факультативу. Особливу увагу приділено особливостям забезпечення ефективності факультативу для формування лідерської компетентності студентів та змісту факультативу «Школа лідерства», від якого залежить досягнення поставленої мети, цілей і завдань для розвитку студентів-лідерів. **Висновки.** Основними результатами, які були отримані в рамках даного наукового дослідження, слід вважати обґрунтування поняття «факультатив» та характеристику специфіки організації та проведення факультативу «Школа лідерства» для студентів. Результати цього наукового дослідження, а також сформульовані на їх основі висновки мають практичне значення для науковців, викладачів освітніх закладів, психологів та інших спеціалістів, які займаються дослідженням проблем лідерства й формування лідерської компетентності та пошуком ефективних методів, засобів і форм роботи для розвитку лідерського потенціалу здобувачів освіти.

Ключові слова: лідерство; лідер; лідерська компетентність; лідерський потенціал; факультатив; бібліотеки; репозиторій; онлайн-ресурси; абітурієнт

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LAPO P. M.

Nazarbayev University (Astana, The Republic of Kazakhstan), e-mail: piotr.lapo@nu.edu.kz,
ORCID 0000-0003-0444-2810

About Social Communications of Nazarbayev University Library

Objective. The purpose of the article is a systematic analysis of social communications of Nazarbayev University Library based on an analysis of the structure of the social communication as a system and the factors determining its formation and development. **Methods.** For a comprehensive analysis of such a complex phenomenon of social life as social communication, its interpretations in the Western and post-Soviet traditions, as well as such a concept in sociology as social space (social field), which defines the mission of the library as an institution of society are considered. **Results.** It is noted that the purpose and goals of social communication of an academic library are determined by the mission of the library as an institution of society in specific social time and space, as well as the mission of the university with which the library is affiliated. **Conclusions.** Typically, an academic library has three main areas of social communication: 1) the university community; 2) the professional library community at the national, regional, and international levels; 3) the public community with which the library interacts to popularize reading, promote universal values and ethical standards, develop critical thinking, media and information literacy (culture).

Keywords: academic librarianship; library; social communication; social functions of library; humanistic mission; history of librarianship

Introduction

In the Western tradition, the concept of “*social communication*” is primarily considered at the level of individuals and defines the individual’s use of verbal (spoken) and non-verbal (look, facial expression, gestures) language to communicate in social situations to share information about his/her feelings, thoughts, plans, etc. with other people and to create and develop relationships and cooperative partnerships with them. As for Western academic libraries, the term “*library social communications*” is generally used to summarize the media and social networks a library utilizes to inform its users about its resources, services, and events. The difference between the interpretation of the concept of “*social communication*” in the Western and post-Soviet traditions is reflected in such common concepts as “library mission” (a concept characteristic of the Western tradition and included in the post-Soviet library terminology only in the late 1990s) and “social library functions” (a concept characteristic of the Soviet and post-Soviet tradition, especially regarding a public library, and has not become popular in Western library terminology). It is reasonable to assume that the communication component of library activities in the West is considered based on serving, first, the individual and ensuring his/her rights, and serving, first, society and its interests, represented by state ideology, expressed in the form of the social functions of libraries in the Soviet and post-Soviet states. For example, Jesse H. Shera, a guru of the US librarianship, wrote: “Though the library serves mainly the individual, the ultimate objective is the betterment of society; therefore, the librarian must not only know the cognitive system of the individual, but also the communication network of society” (Shera, 1965). In the publications of Soviet school’s theorists of librarianship, “the communicative component of library activity is viewed through the prism of: a) the main social functions of the library; b) public purpose libraries; c) institutional characteristics of the library; d) communication processes occurring in various social fields; e) types of activities aimed at receiving and transmitting socially and professionally significant information” (Dolgoplova, 2020, Neshcheret, 2019). While Western libraries’ interpretation “social communication” is mostly social media used in library services, the post-

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Soviet libraries' interpretation of "social communication" is "movement of meanings in social time and space" (Sokolov, 2002).

The new role of the librarian and the mission of the library proclaimed by R. David Lankes can be considered as a noticeable stage in the convergence of the above-mentioned interpretations. "To be a librarian is not to be neutral, or passive, or waiting for a question. It is to be a radical positive change agent within your community" (Lankes, 2013). "A new mission for librarians: to improve society through facilitating knowledge creation in their communities" (Lankes, 2011). The approach proposed by R. David Lankes became an impetus for Western library practitioners to take a fresh look at their professional activities (Smith, 2019).

Historically, the library has acquired the qualities of a social and communication institution of society with the growing emergence of public, open for all, libraries. With the development of information and communication technologies and the increasingly aggressive competitive environment in the field of information services and computer social networks, the library is forced to devote more and more time and efforts to its development and improvement as a social and communication center and as a subject of social communication (Tueva, 2014). It is noted that the process of self-awareness and self-identification of libraries as a center of social communications and its functions in specific social time and space occurs over a long period of time. It is still a relevant subject for research, practical experiments, and innovations for the mass (public) library. As for the understanding of the academic library as a center of social communications, many theorists and practitioners of librarianship seem to have this issue initially clear - its purpose is to meet professional needs and requests from specialists of the institution with which it is affiliated. "Part of, or aligned with, institutions of higher education, academic libraries tend to acquire comprehensive collections, do little weeding of them over time, and seek to accelerate the pace of scholarly dialogue in research and teaching" (Lankes, 2011). At the same time, R. David Lankes notes, "Academic libraries, like all libraries, must shape themselves and their services to the specific communities they serve" (Lankes, 2011).

The purpose of this article is to study the social communications of Nazarbayev University Library and the factors influencing their formation and development.

Methods

The methodological basis of the study is analytical methods, as well as literature review and theoretical principles set forth in the works of contemporary librarianship and social communication researchers. The systematic, structural functional, activity and institutional approach has been used in the study.

Results and Discussion

Considering an academic library as one of the centers of social communications of students, teachers, and researchers of the university with which it is affiliated is a common view.

At the same time, to maintain the relevance of the library to a specific social time and space and to predict the actual future directions of the development of the library, it is also necessary to consider its immanent properties as an institution of society that has been performing certain social functions for four millennia. *Social space (social field)*, interpreted as a space providing the basics of life for individuals and social communities, a space for the formation, development, strengthening and preservation of their human potential, is considered today as an actual object of study in social sciences (Ivanov, 2015). In the structure of the social field specific zones or areas are distinguished: healthcare, medicine, education, culture, housing, and communal construction

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(in the aspect of housing and dacha construction), insurance, pension services, social protection, etc. In accordance with such the purpose of the social field as the formation, development, strengthening and preservation of its human potential the *mission of libraries in society* is “(1) to promote the development of human nature (his/her intellectual, spiritual, emotional, cultural, and esthetic intelligences) and (2) culture of interpersonal relations (the level of which determines the degree of sustainable development of society) (Lapo, 2021).

In a library as a communicative system, all levels and sides of its communications must be combined into a single structure. It is necessary to move from the description and analysis of the parts that make up the communication process - user service, modern information and communication technologies, the system of external relations with authorities and other information, documentation, and communication institutions to the structuring of all the main elements of communications for further modeling of the holistic structure of their relationships (Karaschuk, 2017). There is an established view of academic libraries as just information centers for study and research. But what distinguishes any library from an information center is that the library is as a unity of its three essences: 1) it is a cultural institution responsible for developing individual's culture of reading, thinking, communication, media and information culture (literacy), legal culture (copyright, right to access information), etc. (specifically to university libraries: creating a culture of academic integrity, etc.); 2) it is an information center providing complete, reliable and relevant information to the user's request and consulting information services; and 3) it is a social communication center creating a culture of interpersonal communication, dialogue and joint activities) (Lapo, 2021).

It should also be noted that depending on the role (mission) performed by a particular university, the social communications of its library may be different.

Nazarbayev University (NU), established in Astana, the capital of the Republic of Kazakhstan, in 2010, is the country's flagship academic institution with aspirations to become a global-level research university. Its mission is to be a model for higher education reform and modern research; to contribute to the establishment of Astana as an international knowledge, innovation, and medical hub; and to prepare students for a world of increased volatility, uncertainty, complexity, and ambiguity¹. Nazarbayev University is intended to become the engine of transformation of the higher education system in the country. NU leadership adheres to the view that a modern university must stimulate social change and is responsible for its students and the society in forming of which the university participates. NU seeks to engage more actively with society, taking a more analytical and critical approach to the context in which it operates, from which they receive their funds, and contribute to in turn. The university, as a social institution, instigates sustainable transformation, addresses social inequalities and ceases perpetuating and reproducing the very conditions underlying these challenges.

The NU mission and purpose define both the mission and role of its library, the important priorities of which are the promotion of best practices of the international and national librarianship and up-to-date technologies among Kazakhstani academic libraries and participation in the promotion of the NU values in the country and at the regional and international levels.

Speaking about NU Library as a social communication system, it can be highlight three of its main communication spaces. The first is, of course, primarily the NU academic community (its students, teachers, researchers, administrators, and staff). The communication of NU Library with the NU academic community is realized through the wide range of information and library services that the library offers to its users². The library team is committed to constantly improving its

¹ <https://nu.edu.kz/about>

² <https://library.nu.edu.kz/wps/portal>

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services providing physically and virtually. In June of 2023, the new Alma+Primo library services platform produced by Ex Libris company was implemented in the library. The NU Library devotes a lot of time and efforts to promoting academic integrity among students, with this activity's broader goal to develop moral and ethical values and attitudes among NU students. Since the library has a rich and unique collection of printed and electronic textbooks, scientific monographs and journals, the library's users are also researchers from a few universities and research centers in Astana. These users have the status of "temporary reader" and can use printed and electronic (network) information resources of the library only in its reading rooms. Temporary users visit the library usually during a year based on memorandum of understanding concluded between NU and the organization with which such library users are affiliated.

The second important communication space of NU Library is the library professional community, represented at the national, regional, and global levels. To realize its mission of sharing advanced international and national experience in the field of librarianship among academic librarians in Kazakhstan, NU Library annually holds the Eurasian Academic Libraries Conference (EALC) and the seminar-training "School of Library Technologies". Additionally, the library provides consulting services to other libraries and is used by them, as well as by students at Kazakhstani universities with library specialties for internships. At the national level, NU Library interacts with the Association of University Libraries of the Republic of Kazakhstan (ULAK)³. The Association was officially registered on October 22, 2012, but only last year it began to work actively as a united team of experts from various university libraries, and in cooperation with the Ministry of Science and Higher Education of the Republic of Kazakhstan. On the Ministry's request, a working group was created under the ULAK auspices to develop a Program for the Modernization of Information and Library Provision for Higher Education in the country and a Roadmap for the implementation of the Program for 2022-2024. To implement the roadmap, 6 committees were created within the Association, including the Committee on Library Regulatory Documentation; the Committee on Library Education, Training and Advanced Training of Library Staff; the Committee on Information Resources and Access and others. A memorandum of cooperation between the Association and the Ministry of Science and Higher Education was signed in January 2023. NU Library staff took part in the working group to develop the above-mentioned documents and they are members of the Association's committees.

At the regional level NU Library actively collaborates with librarians and teachers of library disciplines at universities in Central Asia, as well as with the National Libraries of Uzbekistan and Tajikistan. NU librarians regularly make presentations about their experience and achievements at the annual international conference "Central Asia: Internet and Information and Library Resources in Science, Education, Culture and Business"⁴, held by the National Library of Uzbekistan named Alisher Navoi in various cities of the country. Together with librarians and teachers of library disciplines from universities in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, NU Library staff prepared project applications for the international Erasmus+ program and conduct activities to involve librarians in the implementation of the Sustainable Development Goals under the auspices of the International Federation of Library Associations and Institutions (IFLA).

Partnership with the Scientific Library of the Ukrainian State University of Science and Technologies (Dnipro, Ukraine) in conducting international conferences in Astana (EALC) and in Dnipro (Ukraine International Conference "University Library at a new stage of social

³ <http://ulark.kz/>

⁴ https://www.natlib.uz/bbs/content/94_519

communications development" – UniLibNSD) is also important professional communication of NU Library at the regional level.

Regarding the global level of interlibrary interaction, it should be noted that NU Library is a member of the International Federation of Library Associations and Institutions (IFLA). The library actively participates in various IFLA projects, for example, in the Library Map of the World⁵, publishing reports on its activities aimed at implementing the Sustainable Development Goals on the project website. NU librarians are regular participants in international conferences held in a few countries around the world.

The third important communication space of NU Library is public communities such as readers' clubs in Astana city which unite people with different professional backgrounds and ages. The library provides the readers' clubs with a venue to meet and discuss books they read. In cooperation with professors and students of the NU Graduate School of Education the library conducts literary events for children in Astana city and in Kazakhstan, usually for children from so called socially vulnerable families. The goal of the collaboration of NU Library with city reading clubs, and initiation, together with the NU Graduate School of Education, of events for children and dedicated to the International Day of Children's Literature, the implementation of projects to promote media and information literacy among librarians and students of secondary schools in Akmola region are aimed at the development of a cultural and enlightened society, in which citizens are critical thinkers and have a habit of reading high quality fiction. Such citizens can be considered as the hope and guarantee of a successful future for libraries and sustainable development of humanity.

Conclusions

Social communication of an academic library should be a complete system, with different levels and areas of interaction. The purpose and goals of social communication of an academic library are determined by the mission of the library as an institution of society in specific social time and space, as well as the mission of the university with which the library is affiliated. Typically, an academic library has three main areas of social communication: 1) the university community; 2) the professional library community at the national, regional, and international levels; 3) the public community with which the library interacts to popularize reading, promote universal values and ethical standards, develop critical thinking, media and information literacy (culture).

Improving the quality of human potential of the country and region, development of the intellectual, spiritual, and emotional intelligence of people by providing high-quality and effective information and library services to students, teachers and researchers of Kazakhstani universities is seen as the ultimate goal of this direction of the NU Library activities.

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⁵ <https://librarymap.ifla.org/>

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LAPO P. M.

Університет Назарбаєва (Астана, Республіка Казахстан), e-mail: piotr.lapo@nu.edu.kz,
ORCID 0000-0003-0444-2810

Про соціальні комунікації Бібліотеки Університету Назарбаєва

Мета. Метою статті є системний аналіз соціальних комунікацій бібліотеки Університету Назарбаєва на основі аналізу структури соціальної комунікації як системи та факторів, що визначають її формування й розвиток. **Методика.** Для всебічного аналізу такого складного явища суспільного життя, як соціальна комунікація, розглянуто її інтерпретації в західній та пострадянській традиціях, а також таке поняття в соціології, як соціальний простір (соціальне поле), що визначає місію бібліотеки як інституту суспільства. **Результати.** Зазначено, що мета і завдання соціальних комунікацій академічної бібліотеки визначаються місією бібліотеки як інституту суспільства в конкретному соціальному часі та просторі, а також місією університету, з яким бібліотека афілійована. **Висновки.** Зазвичай академічна бібліотека має три основні напрями соціальної комунікації: 1) університетська спільнота; 2) професійна бібліотечна спільнота на національному, регіональному та міжнародному рівнях; 3) громадськість, з якою бібліотека взаємодіє з метою

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популяризації читання, просування загальнолюдських цінностей та етичних норм, розвитку критичного мислення, медіа- та інформаційної грамотності (культури).

Ключові слова: академічне бібліотекознавство; бібліотека; соціальна комунікація; соціальні функції бібліотеки; гуманістична місія; історія бібліотечної справи

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MEDVED M. M.

Scientific Library, Uzhgorod National University (Uzhgorod, Ukraine),

e-mail: maria.medved@uzhnu.edu.ua, ORCID 0000-0001-8275-9026

Representative Virtual Material Collections about University Scientists: The Experience of the Uzhhorod National University Library

Objective. The research is aimed at studying practical experience of creation and application of the representations of virtual material collections about the scientists of the Uzhhorod National University, as one of the important popularization mechanisms of the university science. **Methods.** Using our own developments, we attempted to familiarize the library community with the specialized methodology of representation work of the scientific library of the Uzhhorod National University during quarantine restrictions and martial law in Ukraine. Using the comparative analysis, the efficiency of the representations of virtual material collections, created by the library as publicizing the development of university science and culture of the region and the interest of remote users in them has been proven. **Results.** The substantiation of the obtained results is based on the characteristics of the Uzhhorod National University library during remote work of the institution, aimed at increasing the interest of virtual users in the content of the library. The efficiency of using the method of representations of information products of libraries during the period of difficult physical access to the library funds of Ukraine has been confirmed. Analysis of the expansion of the library's information services and the practical recommendations regarding the active popularization of scientists and prominent figures of the Zakarpattia region are considered as one of the methods of reorienting the work of the library and its services in accordance with today's challenges. **Conclusions.** The important role of library support in the popularization of science and culture of the region, as an important factor of practical library assistance to society during the times of trials for Ukraine, has been confirmed.

Keywords: Scientific Library of the Uzhhorod National University; library innovations; representations of virtual materials; virtual exhibitions

Introduction

Despite the difficult events in the life of Ukraine, the period of the COVID-19 pandemic and the Russian-Ukrainian war, the library industry of Ukraine still experiences a rapid rise of innovative implementations. The tendency of introducing new methods in the work of libraries is caused by the urgent need for access to information. Education, employment relationship, a variety of online services through Internet communication channels have become a need of society. Information flows are produced each second, and their absorption is confirmed by the requirement of time. Today, Ukraine needs special informational support provided by the institutions and organizations. Among the variety of information resources, a significant part is produced by the libraries, which are entrusted with an important mission not only to preserve the cultural and scientific heritage of mankind, but also to promote their dissemination. A number of library scientists around the world study creation and presentation of library content in social networks, among which virtual exhibitions occupy an important place. The role, meaning and justification of the advantages of Facebook are studied on the example of the American public and scientific and university libraries (Aharony, 2012), the accents of advantages and disadvantages of Facebook in the work of university libraries (Margaix-Arnal, 2008); the issue of creating and distributing the virtual book exhibitions through virtual notification (Argasiński & Woynarowski, 2019). The methods of expanded user access to online services and content creation based on the functioning of the dominant social media of the scientific libraries in Ukraine, as a positive consequence of the remote work of librarians, a study of the Ukrainian library specialists (Petrushka, Kozhushana, & Manach, 2022); innovative transformation of the library work and drawing attention to the changes

in the educational and research ecosystems of the institutions during the period of uncertainty caused by the COVID-19 pandemic (Kolesnykova, Gorbova, & Shcherbatiuk, 2022).

Purpose. As part of the study, it is aimed a) to analyze the presentation of virtual materials collections about the scientists and famous people of the Zakarpattia region, as a special digital content of the library of the Uzhhorod National University, distributed using Facebook, b) to determine the influence factors of the information product, as a new library service on remote user information requests.

Methods

Using the method of analysis of the communication interaction between the university library and the user audience on Facebook, it was attempted to present a specialized method of representing the virtual materials of the works of the scientific library of the Uzhhorod National University during the period of quarantine restrictions and the introduction of the martial law in Ukraine. Research methodology includes the methods of analysis, synthesis, comparison, grouping, generalization. Quantitative indicators of coverage (views), topics and user feedback were chosen as the criteria for evaluating the effectiveness of representations of Facebook virtual collections. The important factors of adapting the work of the educational library to the changes in the information requests of remote users during the period of remote work of the library were identified, and the effective possibility of Facebook to expand the framework of the demand for the information needs of society was confirmed.

The analysis of the thematic dynamics of interest in the content proved that the virtual collections of materials effectively reflect the development of scientific achievements and cultural values of the region and play an important role in popularizing the achievements of the academic community in combination with the popularization of the library collections of the educational institution.

Results and Discussion

Scientific library of the Uzhhorod National University (hereinafter SL UzhNU) is one of the well-known educational libraries in Ukraine. Historical events of the Carpathian region development made a special imprint on the culture and education of the Zakarpattia region, including the first opening of a university and its library in the region. Today the UzhNU library has the most powerful collection of printed publications in Zakarpattia (more than 1,600,000 copies) and a collection of electronic academic texts (more than 55,000 files of full-text documents). 16,000 students study at the Uzhhorod National University, among which, despite the state of war in the country, more than 1,600 are foreign students, representatives of India, Nigeria, Jordan, Ghana, Palestine, Bangladesh, Western Europe and other countries. 1,256 teachers, including more than 177 doctors of science, professors, about 700 candidates of science, associate professors teach future specialists. The scientific library is an important structural unit of the university and plays a significant role in the quality of the educational process and the support of scientific research at the university.

The uniqueness of the westernmost educational library of Ukraine lies in the value of its collections, including more than 20,000 rare books, the analogues of which are few not only in Ukraine, but also in the whole world. Valuable collections of manuscripts and books always increase interest in the library, and the opportunity to use them opens the way for both domestic and foreign researchers. SL UzhNU has passed a long and thorny formation path, and today it is boldly mastering the latest library technologies, focusing on the European library standards. The

library became one of the first libraries in Ukraine to implement an electronic library program in its work, which expanded its technological capabilities, and the use of new methods in serving modern users raised the image of the library.

The implementation of an innovative strategy in the development of the UzhNU library is primarily focused on advanced library technologies and practices. Despite the difficult political and economic conditions in the country, the library did not stop in its desire to meet the requirements of the time. The library structure is committed to the most productive capabilities of the team, therefore new departments have been identified in its structure, focused on using the best practices according to the requirements of the time, new plans have been developed, and new projects are being implemented. Unfortunately, raising the requirements to the level of the professional and informational skills of Ukrainian librarians does not correspond to their salary, on the contrary, during the period of the martial law in the country, it decreased somewhat, which causes staffing constraints when forming a group of leading library specialists and makes it difficult to replenish the team with IT specialists, whose support is extremely necessary for information development. And, even in spite of such difficulties, the library continues introducing innovations in its work: expanding the capabilities of the electronic catalog, applicating a number of online services, updating the web-site, bibliometric and scientometric support of university scientists, holding a number of scientific conferences and many other applications that successfully raise the library status.

According to Tetyana Kolesnykova, a leading Ukrainian scientist in the field of librarianship, among the complex of innovative library services and creative solutions to support the creation, organization of access, dissemination, control and effective presentation of the achievements of the university scientists in the global information space, there is an important lever among the support services of scientific developments. It is the dissemination of the results of scientific research by scientists in the national and global scientific information space (Kolesnykova, 2023). With the aim of popularizing the science of the university, the SL UzhNU started the creation of representative virtual collections of materials of the university's scientists, aimed at spreading the achievements of scientists in the global Internet space. The concept of *representation* or *electronic presentation/exhibition* means the demonstration of virtual images of specially selected printed works and information about their authors in Internet using WEB technologies. The main purpose of the presentations is to present the materials about the scientist's life path and scientific development, an overview of his work, and familiarization with the author's books and the possibilities of their use to remote users. The advantage of representative virtual collections of materials is that they include a number of complementary features, such as: various images, videos, sound recordings, animation elements, digitization of original documents, etc. A significant advantage of material representations is their independence from the time of exposure, because the audience has access to the exhibitions long after they start their journey in the global electronic space. In comparison, their physical counterparts have limitations in time space, because they depend on the institution's work schedule.

The first presentations of representative virtual collections by the UzhNU library took place in 2020, during the COVID-19 pandemic. They became a new challenge for the library as a separate project that was launched during the uncertainty associated with the period of the COVID-19 pandemic. The project was named "Virtual Book Exhibitions, Reviews, Presentations" (Scientific library of the Uzhhorod National University www.lib.uzhnu.edu.ua/node/61). It includes several thematic blocks, such as: New Arrivals, Literary Reviews, Thematic Exhibitions, Scientific Pride of the Uzhhorod National University, Dates and Events. After analyzing the concepts and typology of social networking sites, scientific library of the Uzhhorod National University reasonably chose Facebook, where the page Scientific library of the Uzhhorod National

University www.facebook.com/libraryuzhnu was already created. This choice was based on the main criteria and evaluations of Facebook, which became the quantitative indicators of coverage, placement, comments and topics after a diachronic analysis of functioning of the dominant social media of the largest scientific libraries of Ukraine, among which were the libraries of the highest-rated higher educational institutions of the state.

The beginning of the implementation of the project “Virtual Book Exhibitions, Reviews, Presentations” was the middle of 2019. It included an initial period of discussion of issues related to the meaning of representations and their role in expanding the library powers. Simultaneously with the implementation of the mentioned project, the SL UzhNU initiated and successfully held a number of annual scientific and practical Internet conferences, which combined the discussion of the experience of virtual materials presentation by the library, as one of the levers of expanding the online services of the libraries. A conference held on June 18-25, 2019, entitled “Using Web Technology Instruments as a Basis for Expanding Library Online Services in the Creation of the Modern Library Image” was the beginning of the activities. One of the discussion areas were the issues “The Role of Social Information Communications in the Development of Libraries of Higher Educational Institutions” and “Online Services as Promising and Alternative Means of Library Services Development.” Among the many speakers at that meeting, it was presented the report by the Head of the Department of Cultural and Educational Work of SL UzhNU Khrystyna Nastych, named “Social Network Facebook in Work of Scientific Library” <https://dspace.uzhnu.edu.ua/jspui/handle/lib/24408>.

At the II Scientific and Practical Internet Conference “Modern Tasks and Priorities of the Library Activities: The Path of Innovation,” which took place on June 15-19, 2020 on the basis of the scientific library of the UzhNU, its chief bibliographer Olena Tsunyak presented the report “Development of Electronic Library and Information Technologies as a Component of the Image of Modern Libraries (On The Example of the Experience of the Scientific Library of the Uzhhorod National University)” <https://dspace.uzhnu.edu.ua/jspui/handle/lib/29293>.

The next, III Scientific and Practical Internet Conference organized by the UzhNU library within the framework of the mentioned project, took place on October 21, 2021 under the title “New Model of the Library’s Information Image: Changing the Traditional Perception of its Purpose and Functions” <https://dspace.uzhnu.edu.ua/jspui/handle/lib/38025>. Several reports of the conference participants are devoted to the experience issues of virtual materials representation in the UzhNU library. They are: “The Essence and the Value of Virtual Book Exhibitions as a New Form of Library Information Space” <https://dspace.uzhnu.edu.ua/jspui/handle/lib/29178>, which was presented by Iryna Lopit, the Head of the Main Subscription Department of the SL UzhNU; the report of the Head of the SL UzhNU, Mariia Medved, “Communicative Rehabilitation of the Library during Quarantine Limitations: The Experience of the Scientific Library of the Uzhhorod National University” <https://dspace.uzhnu.edu.ua/jspui/handle/lib/38033>; the report of the Head of the Local Literature Sector of the SL UzhNU Marija Chorny “Social Networks as a Lever for Popularization of Rare Local Publications from the Collections of the National Library of the Uzhhorod National University” <https://dspace.uzhnu.edu.ua/jspui/handle/lib/38070>.

The goal of the project “Virtual Book Exhibitions, Reviews, Presentations” was to master the skills of creating and representing virtual materials as a new online service from the library, which will not only tell about the life and scientific achievements of the UzhNU scientists, but also present their printed works from the collections of the university library. Representations gained particular popularity as a remote work opportunity for library employees, because this method facilitated the work of librarians to form content remotely at the time of physical distancing of the team during the coronavirus pandemic. This became a challenge to the possibilities of library professionalism, the ability to organize the work of the team and not to lose the user audience. At

this time, a significant part of sociocultural work moved into the virtual plane: video presentations, virtual exhibitions, virtual bookshelves, online flash mobs and promotions, etc.

Let us focus on one of the efficient work methods of the library team during the period of uncertainty – the creation of representative virtual material collections about the scientists of the Uzhhorod University, which combined various contents produced by the library. According to the librarian-scientists, one of the traditional forms of library activity that experiences an era of modernization and adaptation to a remote way of service is virtual (electronic) exhibitions, which are currently one of the most efficient forms of providing users with information (Turovska & Smoliar, 2015).

The present is filled with many challenges for libraries, and it is these challenges that push the libraries to master new work methods. Adaptation to the new requirements of world informatization promotes searching the ways to provide modern users with information, which make up the priority of requests. Such a new project for the SL UzhNU was the creation of its own electronic product, which is represented by a whole series of representations united by one name, but which differ in thematic blocks. The first of them was a representative virtual collection of materials, united by the series “Scientific Pride of the Uzhhorod University.” The main task of the newly created project was the combination of two main criteria: informing about the research achievements of the university scientists and accompanying presentation of the literary sources from the library collection, the authors/co-authors of which are university scientists.

The second block was the presentation of a representative virtual collection of the series “Prominent Figures of Zakarpattia.” It combined materials about prominent public, religious and cultural figures of Zakarpattia (writers, poets, artists, sculptors, journalists, scientists).

The third block was the series “The History of the UzhNU,” representative virtual materials of which included archival evidence of the formation of the largest university of the region – the Uzhgorod National University, from the time of its foundation to the present. In the series, the materials were grouped according to the different headings, among which a significant number consisted of thematic materials about the scientific library of the UzhNU.

Work on the creation of electronic information products was preceded by the training of library employees, which, by coincidence, fell on the pre-war period. It was a series of educational trainings aimed at acquiring the skills of creating informational electronic products, which became representative virtual collections of materials about the university scientists. The training included several stages: preparation and presentation of various images, ability to create and edit video, accompanying material with sound recording, digitization of original documents, animation, use of fonts and colors. The involvement of the team in the new project was perceived differently, some with ease and interest, others – with precaution. Over the years, the staff of the scientific library of the UzhNU has developed a special practical method of learning innovations – “colleagues teach colleagues,” so everyone joined the proposal to prepare one resource from the department. The situation determined the leaders in the creation of virtual representations, who were included in the main representative group of the creation of virtual exhibitions.

Soon, electronic exhibitions of materials created by the library gained considerable popularity among the users, because their demonstration in Internet, using WEB technologies, provided the opportunity to present materials to remote users and thus expand the framework of popularizing both the names of the scientists and the opportunity to advertise their works, which the SL UzhNU also keeps in its collections. Analytical indicators of attendance of various blocks are shown in Tables 1; 2; 3. The block “Scientific Pride of the Uzhhorod University” received the highest number of views. The number of views became the main argument for the interest of the remote audience in the representative materials about the scientists of the Uzhhorod University and interest in the library collections. The most important goal of the project, the librarians were

focused on, was successfully achieved, because it became the popularization of the scientific achievements of the Uzhhorod National University. The significance of virtual library exhibitions during a period of uncertainty is being explored by many library scientists, for example, Croatian librarians in the city of Zagreb. Studying the work of their library, they were mostly focused on virtual exhibitions and their demand during the period of quarantine restrictions caused by the COVID-19 (Semenski, Ille, & Cej, 2021).

The scientific library of the UzhNU has developed its own mechanism for selecting material for multimedia presentations based on the following criteria:

- selection of candidates of the scientists (authority of the scientists, their scientific merits and developments, scientometric characteristics, state assessment, etc. were taken into account);
- selection of sources from the library collection of the scientist's authorship (thematic search of books by authorship, by the field of scientific interests of the scientist: search in electronic, alphabetical and systematic catalogs of the library, in bibliographic indexes and based on the use of methodological recommendations);
- digitization of found sources;
- the scientist's consent to disclose personal archive materials and professional growth (family photos, diplomas and award documents, use of photocopies of archival and personnel documents);
- accompaniment of a virtual presentation with multimedia means (sound recording, video editing, animation, fonts and colors, etc.).

The first and most successful attempt of representation was a virtual exhibition of materials from the series "Scientific Pride of the Uzhhorod University" – "Professor Andrii Holovatskyi." It was dedicated to the 80th anniversary of Andriy Holovatskyi, Doctor of Medical Sciences, Professor, Head of the Department of Human Anatomy and Histology of the Medical Faculty of the Uzhhorod University. Interest in the presented material is confirmed by 6.5 thousand views (as of August 1, 2023), 1.6 thousand of which were collected during the first days of the demonstration.

Already in 2020, the library represented 12 personal exhibitions about the UzhNU scientists, which had 15,183 views, taking into account the fact that for the period 2020-2023, the number of views as of August 1, 2023 was about 30 thousand. Among the variety of representations, the greatest interest of virtual users was aroused by the virtual representations: about professor-linguist, the Head of the Department of Ukrainian Language of the UzhNU Natalia Venzhynovych (2.2 thousand views); the Head of the Department, Candidate of Biological Sciences, Associate Professor of the UzhNU Fedor Kurtiak (1.8 thousand views); Professor of the Department of Biochemistry and Pharmacology of the UzhNU Ivan Hryh (1.4 thousand views) and others. Regarding one of the representations of virtual materials, as a confirmation of the importance of popularizing the names of the university's scientists, the library received a comment from the network user Nataliia Roman "...It is incredibly interesting to walk along the scientific paths of the past. I am pleasantly surprised. I am sincerely grateful to those who give us this opportunity."

During the period 2020-2023, the scientific library will represent 36 virtual collections of materials about the UzhNU scientists.

The scientific library takes care of preserving the history of its native land. This is proved by the popularization of the names of prominent figures of Zakarpattia, most of whom are recognized by the state for their contribution to the cultural sphere of Ukraine. During the mentioned period, about 20 representations of outstanding public, religious figures, notable artists (writers, poets, sculptors, journalists, scientists) of the Zakarpattia region continue their mission of enlightenment in the Internet space. Like, for example, a virtual exhibition of materials for the

290th anniversary of the birth of the bishop of the Mukachevo Greek-Catholic Eparchy, the enlightener of Zakarpattia in the 18th century, Andrii Bachynskyi; to the 100th anniversary of the birth of the Ukrainian writer, prominent Zakarpattian, laureate of the Shevchenko Prize Ivan Chendei; about the patriarch of the Zakarpattia school of painting Volodymyr Mykyta and others. Representations of virtual collections of materials also tell about modern artists, such as: a talented Uzhhorod journalist and researcher of the history of Uzhhorod – Tetiana Literati, an artist – Odarka Dolhosh, awarded with the title of “Honored Worker of Culture of Ukraine,” a cymbalist – Leontii Lenart, and others. User interest in the presented materials is also quite high. For example, the virtual exhibition of materials about the famous Zakarpattia’s scientist-archaeologist Eduard Balahuri collected more than 2 thousand views; the exhibition about the original Uzhhorod artist Dmytro Chechko, which represented his paintings, was viewed more than 1.2 thousand times.

The series “The History of the Uzhhorod University” became no less popular for viewing by Internet users. Today, 17 representations walk through the Internet space. They tell the history of the creation and formation of the largest university in Zakarpattia. Among them documentary materials of the opening of faculties and departments are presented, the names of the first heads of the university or its structural units, their biographies, scientific growth are mentioned. The library supplemented the mentioned series with the materials about its formation: “A Book For All Time: Ancient Bibles in the Department of the Old Prints and Manuscripts of the Scientific Library of the Uzhhorod University,” “Virtual Excursion to the Largest Library of Zakarpattia: Based on the Monograph of the National Library of the Uzhhorod University: From the Origins to the Present,” “Treasures of the Scientific Library of the Uzhhorod University: A Unique Edition of the Rare Book Department “Галичанинъ,” “Cyrillic Handwritten Monuments From the Collection of the Scientific Library of the Uzhhorod University,” “Miniature Books From the Collection of the Scientific Library of the Uzhhorod University,” “Rare Editions of Encyclopedic Dictionaries From the Book Collections of the Department of Foreign Literature of the National Library of the Uzhhorod University” etc.

The virtual collection is complemented by the several virtual tours of the UzhNU library, including videos about the opening of the museums of the private book collections of Olena Rudlovchak – a scientist, former Transcarpathian, world-famous literary critic. Her library was transferred by her heirs to the scientific library of UzhNU from Slovakia and the Book Museum of Professor Vasyl Nimchuk. According to the will of a well-known linguist, it is also kept as a separate collection in the scientific library of UzhNU.

The representative virtual material collections created by the SL UzhNU continue their spread around the world, they have no borders and time barriers, they carry stories about talented people of Ukraine, their service to the state. Pages of encyclopedias and reference books, bibliographic indexes, articles on Wikipedia testify to the uniqueness of these people, their own works remain for posterity to be useful to new generations. Among all this diversity, virtual collections will remain a bright confirmation of recognition and gratitude to the talented compatriots.

Like all libraries in the world, the scientific library of the UzhNU takes care of the support and distribution of its electronic representations. Given that virtual representations can be distributed through different platforms, the university library uses different ways of popularization. They are:

- website of the scientific library of the Uzhhorod National University;
- social networks;
- university repository.

The website of the library (<http://www.lib.uzhnu.edu.ua/>) archives and provides free access to view representative materials using the heading “Information and Bibliographic Resources,”

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which opens access to the sub-heading “Virtual Book Exhibitions, Reviews, Presentations.” In the section “Thematic Exhibitions”, along with the thematic material selections, representations of virtual exhibitions for the period 2019-2023 are included, the series “Prominent Figures of Zakarpattia” and “The History of the UzhNU.”

The series of representative virtual materials about the UzhNU scientists “Scientific Pride of the Uzhhorod National University” has a personal orientation and is distinguished by a special collection, with the date of the material presentation (year, month, time of day).

The library website helps to expand additional boundaries of representative virtual collections of materials in the heading “We are in Social Networks.” They present the pages of the scientific library of the UzhNU on Facebook, Twitter, Instagram, Telegram and YouTube. Facebook is still the most active.

The study is based on the analysis of the statistical dynamics of the creation and representation of virtual materials for the period 2019-2023.

Table 1

Series “Scientific Pride of the Uzhhorod University”:

Year	2019	2020	2021	2022	2023
Exhibitions		12	8	11	5
Views		15183	11689	2038	434

Table 2

Series “Outstanding Figures of Zakarpattia”

Year	2019	2020	2021	2022	2023
Exhibitions		4	3	6	5
Views		670	3236	1837	904

Table 3

Series “The History of the UzhNU”

Year	2019	2020	2021	2022	2023
Exhibitions	1	6	4	3	2
Views	640	2230	941	707	355

Having monitored the representations, we can say that the period of uncertainty, which is considered the period of the COVID-19 pandemic (2020) and the beginning of Russia’s military attack on Ukraine (2022), was the most successful in creating representative virtual exhibitions of materials. The years 2020 and 2021 became the years of the most active audience interest.

In terms of interest in the representation, the highest rating (as of August 1, 2023) was given to the series “Scientific Pride of the Uzhgorod University,” which had 29,344 views on Facebook.

Conclusions

The creation of information resources by libraries has become a challenge of the conditions of information access, which are successfully implemented by Ukrainian libraries. The experience of the scientific library of the Uzhhorod National University in presenting representative virtual exhibitions of materials is based on the additional opportunity to popularize the names of the most authoritative scientists and figures of the Zakarpattia region, the history of the university's development. Representations of the virtual exhibitions of materials have become an essential mechanism in popularizing and maintaining interest in the most authoritative names of Zakarpattia, as well as in their scientific work or educational activities. The formation of representations according to thematic characteristics of the collections reveals the importance of the development of science and culture of the region, popularizes the collections of the largest library in Zakarpattia, attracting an audience of thousands of virtual users to viewings, especially during quarantine and military events. Representations of virtual exhibitions of materials have become a successful project in the development of innovative technologies and the method of remote work of libraries.

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MEDVED M. M.

Наукова бібліотека, Ужгородський національний університет (Ужгород, Україна),

e-mail: maria.medved@uzhnu.edu.ua, ORCID 0000-0001-8275-9026

Репрезентативні віртуальні колекції матеріалів про вчених вишу: досвід бібліотеки Ужгородського національного університету

Мета. Дослідження спрямоване на вивчення практичного досвіду створення та застосування репрезентацій віртуальних колекцій матеріалів про вчених Ужгородського національного університету, як одного з вагомих механізмів популяризації науки університету. **Методика.** За допомогою власних напрацювань здійснена спроба ознайомити бібліотечну спільноту з профільною методикою репрезентаційної роботи наукової бібліотеки Ужгородського національного університету під час карантинних обмежень та воєнного стану в Україні. За допомогою порівняльного аналізу доведено ефективність репрезентацій віртуальних колекцій матеріалів, створених бібліотекою, як оприлюднення розвитку університетської науки та культури краю та зацікавленість ними віддалених користувачів. **Результати.** Обґрунтування отриманих результатів базується на характеристиці роботи бібліотеки Ужгородського національного університету під час дистанційної роботи установи, спрямованої на підвищення інтересу віртуальних користувачів до контенту книгозбірні. Підтверджено ефективність застосування методу репрезентацій інформаційних продуктів бібліотек за період складнощів фізичного доступу до фондів бібліотек України. Аналіз розширення інформаційних послуг бібліотеки та винесені практичні рекомендації щодо активної популяризації науковців та видатних постатей закарпатського краю розглянуто як один із методів переорієнтування роботи бібліотеки та її послуг відповідно викликам сьогодення. **Висновки.** Підтверджено важливу роль бібліотечної підтримки в популяризації науки та культури краю як важливого чинника практичної бібліотечної допомоги соціуму в період важких випробувань України.

Ключові слова: Наукова бібліотека Ужгородського національного університету; бібліотечні інновації; репрезентації віртуальних матеріалів; віртуальні виставки

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MARWIYAH

Sunan Kalijaga State Islamic University (Yogyakarta, Indonesia),
e-mail: marwiyah.mlis@uin-suka.ac.id, ORCID 0000-0002-2997-1404

LABIBAH ZAIN

Sunan Kalijaga State Islamic University (Yogyakarta, Indonesia),
e-mail: labibah@uin-suka.ac.id, ORCID 0000-0002-6772-5722

Reaching Users Through Social Media: A Case Study on the Use of Instagram by Islamic Higher Education Libraries in Indonesia

Objective. This research aims to identify the use of social media by Indonesian Islamic Higher Education Libraries to communicate with their users through their regular postings on Instagram and the users' responses to them. **Methods.** This research applies quantitative methods to uncover data concerning the number of Instagram posts made by State Islamic University (UIN) libraries and the users' responses (i.e. *like*, *comment*, *share*, and *save*), and then analyzes them using a qualitative approach to identify the users' responses. **Results.** UIN libraries reach users by posting information related to libraries on Instagram that can be classified into eight types of posts; greetings, announcements, library promotions, book donations, quotes, and others. The number of responses to these types of posts varies from each library but posting information related to library services will invite most responses from library users. The library of *UIN Sunan Kalijaga Yogyakarta* is the most active library in posting information on Instagram. **Conclusion.** Instagram is a good medium to reach library users in UIN libraries. However, the availability of policies regarding the use of Instagram in the library is needed since it influences the number of posts on Instagram. Timing (i.e. when is the best time to make an Instagram post?) is also important since it makes a post get more responses.

Keywords: social media; Instagram; academic library; Islamic higher education

Introduction

In the early development of information technology, the internet and computers, for so many institutions, are considered to be the most important tools for doing their main activities, including communication. For some reason, the rise of social media is also considered to have changed the way people communicate with each other. Nowadays information can be easily shared and accepted throughout the world (Oyetola, Aderibigbe, & Oladokun, 2023). As a tool to connect humans with humans, social media is a set of technology that makes two-way communication possible (Koulouris, Vraimaki, & Koloniari, 2020). It, therefore, can be effectively used for supporting institutional activities. Further, the development of the internet and information technology has caused a trend to adopt various internet-based systems, tools, and applications, including social media, for doing promotion activities, and also for learning activities (Lam, Ho, & Chiu, 2023). Social media channels contribute to propagating materials on a global scale (Lee, 2019). Although social media is basically a communication platform, in its development, it is also used for various purposes, like information sharing, promotion/marketing, even for politic campaign (Gunitsky, 2015). This situation is also shown in some researches, for example, research on the use of social media for political purposes in Croatia (Bagić Babac & Podobnik, 2018) and India which encourage reluctant teenagers to participate in the discussions of social, economic, and political issues (Amoncar, 2020). In more or less the same way, research done in Indonesia also shows the important role of social media with its valid information in encouraging millennial generation to take part in political issues discussions (Hamid, Abror, Anwar, & Hartati, 2022). In the world of business, social media platform is taken as opportunity to build efficient relationship with customers (Chuang, 2019). Social media platform is also used in the world of health, like

what is done in China during the Covid-19 pandemic era, in which it is helpful to restrict the spread of corona virus (Koulouris et al., 2020).

In the world of education, a great number of educational institutions also make use of social media. In China, various types of library use social media to promote library services and resources (Xin & Yingxi, 2022). Meanwhile, many Indonesian universities use social media for many purposes, such as promoting library accesses and services (Prisca Cahyani & Asri, 2018), getting library users informed of the new source and material, sharing information about the library, socializing the library programs, library campaign, and sharing information of social and cultural activities (Suharso & Pramesti, 2020). Social media even help students with up-to-date information which is not related to library services (Chizwina, Rabatseta, Bangani, & Moyo, 2017). In addition, social media can also be used by a library to find out learning outcomes, to examine how the information shared in social media helps students learn better, on the assumption that a library is always concerned with information useful for students (Lam et al., 2023).

In the Covid-19 pandemic era, when most countries enact lockdown policies, many educational institutions, including academic libraries, use social media for communicating with their users. As we know, during the pandemic era, while they need library accesses for finishing their assignments, these users (students) cannot access onsite library services and collections. This is the reason why social media usage increases during the pandemic era, as can be seen in research on the use of Instagram by Library of UIN Sunan Kalijaga Yogyakarta (Marwiyah, Labibah, Sri, & Khusnul, 2021). Social media is a solution for facing “crisis moment” caused by the Covid-19 attack. As Erikson (Eriksson, 2018) says, social media has appeared to be an effective tool for risk and crisis communication in disaster, emergency situation. Social media also enable libraries to provide user-centric innovative services (Chiparausha, Onyancha, & Ezema, 2022). Social media also is potential tool to build effective relationship with customers as implemented in business sector (Chuang, 2019). As institutions to provide collection and information services, libraries also use social media for reaching their users and for promoting their services (Anwar & Zhiwei, 2020; Koulouris et al., 2020). There have been many studies dealings with this issue of how social media is used in a library to reach its users (Muhammad & Zhiwei, 2021; Oyetola et al., 2023). All this shows that social media can be used by libraries for reaching their users.

Seeing how social media is used during Covid-19 era, it is also important to identify the use of social media in the post-Covid-19 era, when academic activities, including library services, have been back to normal. Some questions raise; do libraries still use social media for reaching their users? do users still use social media as a means to get information and access library services? This research is aimed at seeing how Islamic Higher Education Libraries use social media to reach their users as well as to assist them to find out information in order that they stay connected to the libraries and benefit from the information posted in the libraries’ Instagram accounts, by seeing the users’ responses to the Instagram posts. Instagram is chosen here because Instagram, according to the survey of *We Are Social* (2023), appears to be the second most used platform (86,5%) after *WhatsApp* (92,1%) in Indonesia.

Methods

This research is intended to find out how Instagram is used as a means of communication between a library and its users. Many researches have been done on this theme using various approaches: 1) quantitative Big Data approach, 2) digital humanities approach such as cultural analytics that seek to make greater use of Instagram’s rich data, 3) small samples of Instagram data paired with qualitative approach such as content analysis, and 4) direct engagement with Instagram users themselves through interviews and ethnographic work (McIntosh, 2019). The approach used

in this research is small samples of Instagram data paired with qualitative approaches because this research does not only use quantitative data, but also sees the users' responses to the Instagram posts and interpret them quantitatively as well as qualitatively.

The Instagram accounts to be researched are the Instagram accounts of State Islamic University Libraries with greatest followers, they are, the Instagram account of Library of UIN Sunan Kalijaga Yogyakarta (UIN Yogyakarta) with 22.300 followers, *Library of UIN Syarif Hidayatullah Jakarta* (UIN Jakarta) with 13.500 followers, and Library of UIN Syarifuddin Zuhri Purwokerto (UIN Purwokerto) with 10.200 followers. The technique of data gathering used in this research is observation on Instagram posts and users' responses to them. The researchers will look at the Instagram posts made during one academic year (2022-2023) that starts from July 2022 to June 2023. This is the academic year in which teaching-learning activities and library services have been completely back to normal with its onsite and night services. The information to be observed is the sort of information posted in Instagram by the libraries and how the users respond to them through: *like, comment, share* and *save*.

Result and Discussion

The data on the use of Instagram in the three UIN libraries are divided into two big parts, they are, data of Instagram posts and users' responses to them on monthly basis and data of content-based users' responses.

1. Users' responses to the Instagram posts taken on monthly basis

As each library makes its own policy on how to use social media for sharing information of library activities, the use of Instagram by these three libraries affects differently, in term of Instagram usage pattern, number of posts, and responses given by the users. This can be seen in Table 1, Table 2, and Table 3 below. These tables show that these three libraries use Instagram in different intensity. Concerning the use of Instagram, Library of UIN Sunan Kalijaga Yogyakarta runs a policy that it makes an Instagram post on daily basis with information content as planned for each day. In addition, the library also makes Instagram contents based on the university academic schedule. As a result, this library uses Instagram more intensively in some particular months. This can be seen in the Table 1 below, which shows that in January, the library's Instagram post reaches its highest number, that is, 32 posts. This is because January is a month when students make preparation for graduation, like uploading their last assignments, which is a condition to fulfill their graduation requirements. For doing this, they need relevant information which is made available in Instagram by the library. Consequently, the users' response also reaches its highest number, that is, 6.582 *likes* and 108 *comments*. May is another month when students are busy with graduation preparation. In this month, the number of users' responses is also high, reaching 8.480 *likes* and 135 *comments*. Generally speaking, however, the users make positive responses to the 339 posts in this academic year, with 68.906 *likes* and 804 *comments*, 2.490 *shares*, and 5.992 *saves*.

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Table 1

Per Month Data of Instagram Posts and Users' Responses Library of UIN Sunan Kalijaga Yogyakarta

	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Post	29	29	29	30	26	28	32	30	30	21	29	26	339
Like	3.322	6.528	5.943	6.437	7.305	8.390	6.582	4.685	5.904	1.942	8.480	3.388	68.906
Comment	9	73	30	35	63	120	108	55	88	56	135	32	804
Share	108	336	175	150	152	542	178	155	232	55	282	125	2.490
Save	397	1.410	336	460	313	952	145	316	703	133	369	458	5.992
Total	3.836	8.347	6.484	7.082	7.833	10.004	7.013	5.211	6.927	2.186	9.266	4.003	78.192

In the meantime, Library of UIN Syarif Hidayatullah Jakarta does not make specific policy on the use of Instagram, so its use of Instagram for sharing information is based on demands. Nevertheless, its users make responses to its 339 Instagram posts, with 18.000 *likes*, 3 *comments*, 356 *shares*, and 428 *saves*. As can be seen in the following Table 2, the users do not make significant comments. The posts from July 2022 to March 2023 do not even get any comment. Overall, however, the users are active enough to make responses in the forms of share and save.

Table 2

Per Month Data of Instagram Posts and Users' Responses Library of UIN Syarif Hidayatullah Jakarta

	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Post	10	4	8	1	12	5	11	5	9	8	18	23	114
Like	749	851	1.467	68	1.544	533	2.495	675	2.984	1.752	2.207	2.675	18.000
Comment	0	0	0	0	0	0	0	0	0	1	1	1	3
Share	23	88	9	0	21	2	62	12	56	13	45	25	356
Save	14	43	17	0	27	2	216	1	39	16	29	24	428
Total	786	982	1.493	68	1.592	537	2.773	688	3.079	1.782	2.282	2.725	18.787

Library of UIN Purwokerto makes a policy on the use of Instagram that the library makes Instagram posts only for sharing announcement, on the assumption that important information will easily reach the users when it is shared in Instagram. Therefore, all of the Instagram posts made by this library contain announcement, with some additional posts of greetings for big days. This is the reason why this library does not make so many Instagram posts, as can be seen in the following Table 3. Despite its limited posts, numbering 29 posts only, the users make good enough responses, with 6814 *likes*, 26 *comments*, and 211 *saves*.

Table 3

**Per Month Data of Instagram Posts and Users' Responses
 Library of UIN Purwokerto**

	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Total
Post	4	5	4	2	6	0	0	0	0	0	2	6	29
Like	749	504	1577	418	2070	0	0	0	0	0	734	762	6814
Comment	3	1	13	1	2	0	0	0	0	0	1	5	26
Share	5	6	45	4	11	0	0	0	0	0	9	13	93
Save	13	12	117	0	44	0	0	0	0	0	16	9	211
Total	774	528	1756	425	2133	0	0	0	0	0	762	795	7173

Library of UIN Sunan Kalijaga Yogyakarta appears to be the most active library to make Instagram posts, reaching 339 posts. Library of UIN Syarif Hidayatullah Jakarta is in the second position, with 114 posts, followed by Library of UIN Purwokerto in the third position with 29 posts. This has something to do with the policies made by each library. Referring to the academic calendar, Library of UIN Sunan Kalijaga Yogyakarta makes regular Instagram posts with relevant contents. It is no wonder that this library appears to be the most active library to make Instagram posts and consequently have most responses from its users.

2. Content Based Users' Responses

The Instagram posts contents of each library varies and based on Instagram account of the three libraries, we found that posts made by the three libraries can be classified into eight sorts of post:

- 1) Greeting (for example, greeting for big days, graduation, etc.);
- 2) Announcement, that is, short information of daily library activities, like service hours, library activities, etc.;
- 3) Library Promotion (library activities and collections);
- 4) Library visit, that is, a documentation made when another institution makes a library visit;
- 5) Library activities (webinar, user education, etc.);
- 6) Book gift, that is, a documentation made when an academician or writer donates books for library collection;
- 7) Quotes taken from inspiring figures;
- 8) Others, that is a post content beyond these seven categories.

Library of UIN Purwokerto uses Instagram specifically for sharing announcements and this is a part of policy concerning the use of Instagram. While, the other two libraries use it for various purposes. As can be seen in the Table 4 below, Library of UIN Sunan Kalijaga Yogyakarta very often makes posts for the purpose of promotion, reaching 100 posts, and get most responses from the users, reaching 31.854 responses, consisting of 25.809 *likes*, 392 *comments*, 1.157 *shares*, and 4.496 *saves*. The posts of collection, like the manual to access library collections and how to upload last assignments to the library web, appear to be the most responded posts. This is because this sort of information is really important for the students as it is closely related to their learning processes, pushing them to interact with the librarians for clearer information. The posts containing announcement are also highly responded by the users, reaching 10.756 responses, because these

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posts give the users information of service hours change, new services, and even volunteer recruitment, which is interesting for the users.

Table 4

Content Based Users' Responses (Library of UIN Sunan Kalijaga Yogyakarta)

Types of Response	Content of the Post								Total
	Greeting	Announcement	Promotion	Library Visit	Library Activities	Book Gift	Quote	Others	
Post	59	51	100	44	48	27	8	2	339
Like	9.938	14.460	25.809	6.915	7.949	4.281	1.301	163	70.816
Comment	62	223	392	50	53	20	2	2	804
Share	121	950	1.157	81	104	45	30	2	2.490
Save	55	1.123	4.496	46	159	50	57	6	5.992
Total	10.176	16.756	31.854	7.092	8.265	4.396	1.390	173	80.102

In the case of Library of UIN Syarif Hidayatullah Jakarta, the most responded post is that of greeting, reaching 5.495 responses, consisting of 5.389 likes, 69 shares, and 37 saves, no comment is made. The posts of promotion are in the fourth place, with 2.822 responses. Interestingly, the number of saves is the highest number, that is, 281. Similar to what happens to Library of UIN Sunan Kalijaga Yogyakarta, the posts of promotion interest the users because they are packed in the forms of video or info graphic, containing steps to access electronic collections, which are so important for their learning processes that they make responses with *share* or *save*.

Table 5

Content Based Users' Responses (Library of UIN Syarif Hidayatullah Jakarta)

Types of Users' Responses	Content of the Post								Total
	Greeting	Announcement	Promotion	Library Visit	Library Activities	Book Gift	Quote	Others	
Post	26	16	16	20	33	4	0	0	115
Like	5.389	2.384	2.380	3.014	4.496	344	0	0	18.007
Comment	0	1	0	0	2	0	0	0	3
Share	69	63	161	11	55	4	0	0	363
Save	37	52	281	21	32	4	0	0	427
Total	5.495	2.500	2.822	3.046	4.585	352	0	0	18.800

In the meantime, Library of State Islamic University Purwokerto, which makes Instagram posts only for sharing announcement and greeting, also gets good enough responses from the users. They make responses with *likes*, *comments*, *shares*, and *saves*. For the post of greeting, they make 2.667 responses, outnumbering the responses for the post of announcement, which is 2.403. This is rather surprising, actually, because information contained in the post of greeting is not really important for the students, compared with that of announcement, which may contain emergency information, like information that the library is out of service. All this, however, indicates that the

users are basically active users who seek library information by accessing the library's Instagram account.

Table 6

Content Based Users' Responses (Library of State Islamic University Purwokerto)

Sort of Users' Responses	Content of the Post								Total
	Greeting	Announcement	Promotion	Library visit	Library Activities	Book Gift	Quote	Others	
Post	10	13	6	0	0	0	0	0	29
Like	2.641	2.302	1.870	0	0	0	0	0	6.813
Comment	6	7	13	0	0	0	0	0	26
Share	12	36	45	0	0	0	0	0	93
Save	8	58	145	0	0	0	0	0	211
Total	2.667	2.403	2.073	0	0	0	0	0	7.143

To compare the number of posting on Instagram and the responses that library users make in three UIN libraries we can see the table 7 below.

Table 7

No		UIN Yogyakarta	UIN Jakarta	UIN Purwokerto
1	Posting	339	114	29
2	Like	68.906	18.000	6.814
3	Comment	804	3	26
4	Share	2.490	354	93
5	Save	5.992	428	211
Total Response		78.192	18.785	7.144
Average rate		230	164	246

The table 7 above shows that Library of UIN Yogyakarta is the most active library in terms of posting information on Instagram compared to other two libraries. The highest number of posts makes the highest number of users' responses. In fact, it is not surprising, since the library of UIN Yogyakarta has policy on the use of social media to interact with users, primarily to post information related to library activities and library promotion. They, even, have schedule to post information on Instagram based on content and time (when to post and what to post). To implement the policy, the library of UIN Yogyakarta assigns two librarians to take responsibility to manage social media including making posts on Instagram regularly. In the case of UIN Jakarta, library staff will share information on Instagram only when they have library activities (such as user education) and important days like national days or graduation. Basically, they do not have a certain pattern or plan to post information on Instagram and consequently they only have few posts on Instagram. Meanwhile in UIN Purwokerto, the library has the policy concerning the use of social media by limiting the post only to announce important information for users and sharing information on the library activities and promotion on the library website. As the result, the library of UIN Purwokerto has the least number of posts. However, the users enthusiastically response

the posts as shown on table 7 on the average rate of the users' response in which UIN Purwokerto occupies the highest place with 246 responses. This shows that Instagram is a potential tool to reach library users as well as to promote library. Therefore, it is recommended for UIN Jakarta and UIN Purwokerto to manage the social media in more effective way to reach their users as UIN Yogyakarta has implemented by providing policy on the use of social media to promote library collections and services and applying the policy consistently.

Conclusion

Instagram is one of the important tools used by UIN libraries to reach their users through posting information for library users ranging from general information like greeting to information related to library promotion (library collections and services) and announcements. This research shows that library users respond to Instagram posts by giving like, comment, share and save mainly for information related to library services and access to collections. Instagram also enables librarians to build good communication with users. Therefore, it is important for library to have policies related to the use of Instagram or other social media platform consisting the schedule and the content of information to be posted on Instagram since timing (when is the best time to make an Instagram post) has impact on the number of post and response from users as indicated in this research.

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MARWIYAHДержавний ісламський університет Сунан Каліджага (Джок'якарта, Індонезія),
e-mail: marwiyah.mlis@uin-suka.ac.id, ORCID 0000-0002-2997-1404**LABIBAH ZAIN**Державний ісламський університет Сунан Каліджага (Джок'якарта, Індонезія),
e-mail: labibah@uin-suka.ac.id, ORCID 0000-0002-6772-5722

Робота з користувачами через соціальні мережі: тематичне дослідження про використання Instagram ісламськими бібліотеками вищої освіти в Індонезії

Мета. Це дослідження має на меті визначити, як ісламські бібліотеки закладів вищої освіти Індонезії використовують соціальні медіа для комунікації зі своїми користувачами через регулярні публікації в Instagram та реакцію користувачів на них. **Методика.** У цьому дослідженні застосовано кількісні методи для виявлення даних щодо кількості постів в Instagram, зроблених бібліотеками UIN, та реакції користувачів (тобто лайки, коментарі, поширення та збереження), а потім проаналізовано їх за допомогою якісного підходу, щоб визначити реакцію користувачів на них. **Результати.** Бібліотеки UIN залучають користувачів через публікацію інформації про бібліотеки в Instagram, яку можна класифікувати на вісім типів постів: привітання, оголошення, бібліотечні акції, дарування книг, цитати та інші. Кількість відповідей на ці типи постів варіюється від бібліотеки до бібліотеки, але публікація інформації, пов'язаної з бібліотечними послугами, викликає найбільше відповідей від користувачів бібліотеки. Бібліотека UIN Сунан Каліджага в Джок'якарті є найактивнішою бібліотекою з розміщення інформації в Instagram. **Висновок.** Інстаграм є гарним засобом для охоплення користувачів бібліотек UIN. Однак необхідна наявність політики щодо використання Instagram в бібліотеці, оскільки вона впливає на кількість постів в Instagram. Вибір часу (тобто, коли найкращий час для публікації в Instagram?) також важливий, оскільки він сприяє отриманню більшої кількості відповідей на допис.

Ключові слова: соціальні медіа; Instagram; академічна бібліотека; ісламська вища освіта

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UDC 027.021:070:655.41(477)**KHARYTONENKO O. I.**Mykhailo Drahomanov Ukrainian State University (Kyiv, Ukraine),
e-mail: o.i.kharytonenko@udu.edu.ua, ORCID 0000-0002-6544-6148**SAVENKOVA L. V.**Mykhailo Drahomanov Ukrainian State University (Kyiv, Ukraine),
e-mail: l.v.savenkova@npu.edu.ua, ORCID 0000-0001-8889-4026**BILORUSTSEVA T. M.**Mykhailo Drahomanov Ukrainian State University (Kyiv, Ukraine),
e-mail: t.m.bilorustseva@udu.edu.ua, ORCID 0009-0007-8843-9323**MARIENKO A. O.**Mykhailo Drahomanov Ukrainian State University (Kyiv, Ukraine),
e-mail: mariienko@npu.edu.ua, ORCID 0009-0003-7805-8675

Communication Aspects of Media, Publishing, and Editorial Activities of University Libraries

Objective. The communication aspects of media, publishing, and editorial activities of university libraries were studied based on their official websites and the experience of the Scientific Library of the Drahomanov Ukrainian State University. The objective of this study is to track new trends in the library's media and communication activities. **Methods.** The methods used were observation, description, analysis and comparison of the content of the websites of Ukrainian and foreign libraries, as well as questionnaires and interviews with university stakeholders related to media activities. **Results.** The survey showed that the interaction of libraries with the media in the areas of information, consulting, providing factual and bibliographic references, access to collections and a pool of experts in various fields, and various educational events is in high demand. The means of popularizing and distributing their own media content are also common to libraries and media. **Conclusions.** University libraries should intensify their work with media and publishers on parity and mutually beneficial terms. Since the library in modern conditions produces and offers its own media products to the general public, the mass audience, it should also use the work methods of publishers and editorial offices with different groups of readers.

Keywords: media activities of libraries; publishing activities of libraries; media products of a university library; media communications in a library

Introduction

The topic of expanding the functionality of the university library has been actively discussed in science for several decades. The fact that it has become an intermediary between many players in the information market and has taken its proper place in media production, publishing, and editorial is beyond anyone's doubt. In domestic science, the works of A. Boiaryn (2018), O. Voskoboinikova-Huzieva (2020), T. Dubas (2016), T. Kolesnykova (2019), Y. Zaklinska (2017), A. Ruban (2019), and others are devoted to this issue. Abroad, D. Tracy (2017), D. Bailey (2017), D.-M. Ordway (2023) paid attention to the understanding of the given topic.

As a result of studying the library's potential as a media and publishing actor, such a model of its perception of new realities was formed:

- The media activity of the library is related to the production of its own media product (official website, Internet resources, pages in social networks, blogs, scientific journals, newsletters, information sheets, resources for training and self-education) and communication

strategies (meetings, actions, interaction with media editors and publishers, different types of readers and authors);

- The publishing activity of the library consists of the production of printed and electronic publications (indexes, catalogs, collections, lists of literature, annals, methodological manuals, library guides – as, for example, on the website of the library of Sumy State University (Sumy State University Library, 2023), digitization of documents, creation, and support of mobile resources;

- The library's editorial activity consists of editing scientific journals, lists of literature, design of bibliographies, recommendations on search, use, presentation of pictorial elements taking into account the observance of copyright.

Today, after the challenges of the COVID-19, the full-scale invasion of the Russian Federation, in the conditions of constant and rapid development of technologies, new trends are emerging within this model that are worth monitoring and discussing.

Purpose: to identify and describe current trends in the media, publishing, and editorial activities of Ukrainian and European university libraries, to analyze innovations in their media communication experience.

Methods

In order to find out the current trends in the media, publishing, and editorial activities of Ukrainian and European university libraries, methods of observation, description, analysis, and comparison of the content of their official websites were used (in total, 43 sites of the libraries of Ukrainian higher education institutions were analyzed – from the list of "Libraries of universities of Ukraine" on the website of the M. Maksymovych NL of Taras Shevchenko National University, as well as 22 sites of European libraries). The study was conducted on the base of the Scientific Library of Drahomanov Ukrainian State University and considered its experience. Questionnaires and interviews were used as an additional survey method: university stakeholders answered a series of questions related to the interaction between the library of the Higher Education Institution and the media.

Results and Discussion

Traditions and innovations within the interaction of libraries with the media

A significant number of domestic libraries submit a section on interaction with the media, for example: "About us in the media", "Media about us", "Our library in the media", etc. However, they mainly provide peculiar reports on how the activities of the library or university, as well as their detached representatives, were covered in the media. Readers are offered either selections of the publications themselves or bibliographic lists with a description of such publications for specific years. Here, the media is perceived as a mirror that only reflects certain activities of the Institution of higher education.

In this context of interaction with the media, we would like to draw attention to the experience of the library of Vilnius University / Vilniaus universito biblioteka, Lithuania (Vilnius University Library, 2023), which is a good example of the formation of a specific culture of public communication. The section "For the media" contains some materials (logos in different color schemes, photos from the library's halls, photos of employees) that the library allows journalists to post when they mention it. All materials are licensed under Creative Commons. In this way, the library immediately positions itself as a subject of media interaction and arranges it from the standpoint of copyright compliance.

One more remark should be made given the legal innovations: according to the Law of Ukraine "About media" (Verkhovna Rada Ukrainy, 2023), which entered into force on 31.03.2023 (Chapter X of the "Final and Transitional Provisions"), the term "mass communication media" must now be replaced by "media". Therefore, most library website sections must be edited per this legal norm.

More and more often, university libraries, mostly foreign ones, understand interaction with media professionals more globally, and moreover, as a two-way and mutually beneficial process. The importance of this direction of library work is very aptly stated in Denise-Marie Ordway's recent professional publication "8 Ways Journalists Can Access Academic Research for Free" (Ordway, 2023), in which the author clearly demonstrates how beneficial cooperation can be for media workers and librarians. If we consider Ms. Ordway's conclusions and the book collections experience, we get several important vectors of cooperation.

First, it refers to the appeal of media persons to the library for factual or bibliographic references. Journalists could always turn to libraries to clarify specific data when writing their materials. However, in modern conditions, we can talk about the emergence of additional factors to strengthen such interaction, particularly the growing role of fact-checking in modern journalistic publications. Journalists often conduct investigations or in-depth studies of some topics. Therefore, they need expert advice on literature searches, as well as help in verifying factual data.

It is no less important to consider that society's attention to the development of technologies is increasing, and therefore the media's interest in monitoring scientific journals. Hence, the opportunity to provide journalists and editors with access to prepaid publications and scientific databases is considered as promising direction. In addition to scientific journals, popular scientific bulletins, express information sheets, press releases, and blogs, through which libraries present research materials to a broad audience of readers, will be helpful.

It should be remembered that the library acts as a communication center that introduces us to experts in the field of social communications or even more globally – to experts in various fields of science. Libraries often appoint some expert curators (expert coaches) from librarians who lead a particular branch or are fixed in certain specialties or disciplines and can orient readers in masses of literature. In addition, they are related to the university's branch units and have a close relationship with scientists and teachers of specific departments.

Therefore, the library acts as an original liaison between various units of the Institution of higher education and also stores the works of scientists. Unsurprisingly, the shortest path to an expert environment often lies precisely through the library. In some universities, the functions of communication and media cooperation units are partially taken over by the library for these reasons.

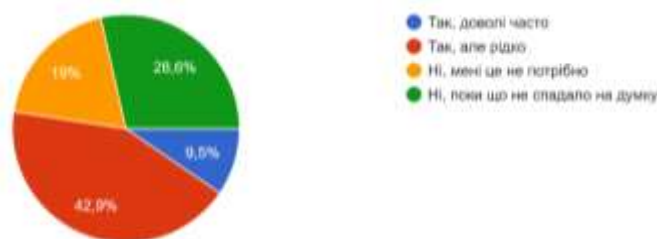
After all, one should remember that today's media stores their electronic archives, so they must understand the basics of library activities. Journalists and publishers conduct research and analytical work and may also need librarians' advice in this context. Science and information activities are sufficiently complex systems requiring training and discussion. Therefore, we must consider the consultative role of libraries, especially in matters of organization of scientific, informational, and analytical, library activities.

In order to find out how relevant the aforementioned vectors of interaction between libraries and the media are, we asked our university stakeholders a series of questions. These are our partners and graduates of the "Journalism" specialty, who currently work as editors, journalists, and copywriters in media and publishing houses. Both questionnaires and personal mini-interviews with respondents were conducted.

To the question "Have you ever turned to the library for factual or bibliographic information (for example, clarifying some data about certain persons, locations, publications,

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etc.)?" 19% answered unequivocally that they did not apply or need it, and 28.6% admitted that they had no such experience, as it had not occurred to them yet. Another 42.9% applied rarely, and only 9.5% - often. That is, 81% of respondents consider this practice acceptable to them.

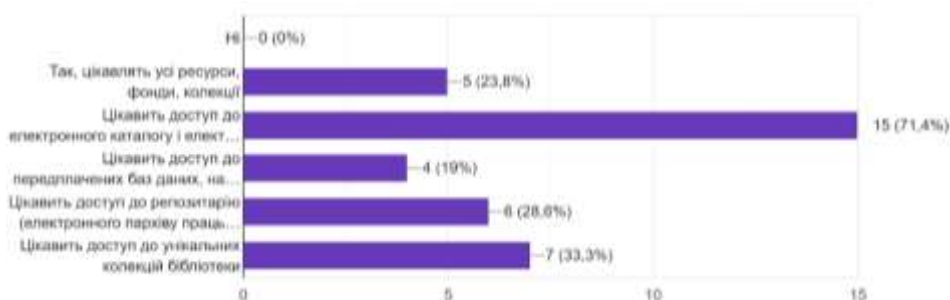


The answers to the following question ("Do you think it is appropriate to turn to the library for factual or bibliographic information in the future?") confirmed the previous result: 19% consistently give a negative result, while the share of those who will "think" about this possibility is as much as 42, 9%. It is quite possible to predict that if these services are properly positioned, the number of people willing to use the help will increase.



The third question was about the resources and services of the library that media people may be interested in: "Are you interested in the library (university library) access to its resources, funds, and collections, and to which ones?" Electronic catalog and electronic library collected the most significant number of votes – 71.4%. The library's unique collections can attract the attention of 33.3% of respondents. A significantly smaller number of respondents preferred scientific journals and databases (19%) and the repository of works of teachers of higher education institutions (28.6%).

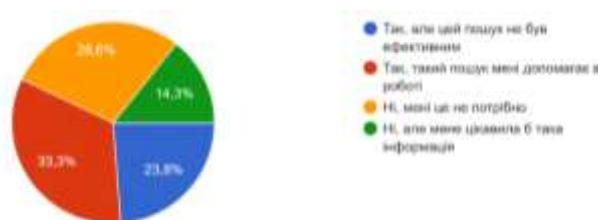
That is, science news is not yet a priority for the media.



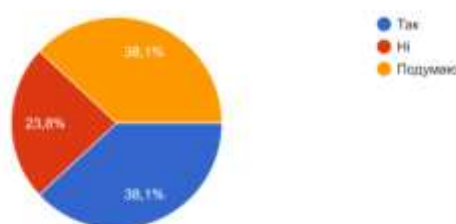
The next question was about finding and working with experts: "Have you ever looked for experts on a specific topic using the resources of libraries (in particular, university libraries)?" As in previous cases, 19% answered in the negative. Instead, 28.6% already had such a practice, and 52.4% agreed to consider such a prospect.



"Have you ever searched for information about science news on the websites of universities or university libraries?" 33.3% of respondents gave a positive answer to this question. They confirmed that they had done so and that such a search helped them in their work. 14.3% admitted that they did not have such a practice, but would be interested in such information. This potential audience is ready to receive information from this source and with whom you can work. Among the 52.4% of negative answers, 23.8% of the following should be highlighted: "Yes, I have searched, but this search was ineffective". Undoubtedly, such a statement can be regarded as a kind of incentive to improve the work of libraries with such content.

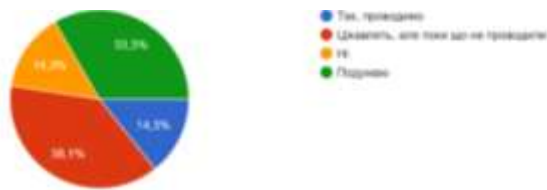


The answers to the question "Would you be interested in librarians' consultations on the current realities of organizing scientific, educational, and library activities?" can be considered a positive result in general. 38.1% of respondents are confident that yes, and another 38.1% have thought about the feasibility of this. So, 76.2% know the prospects for consultative communication between librarians and media professionals.

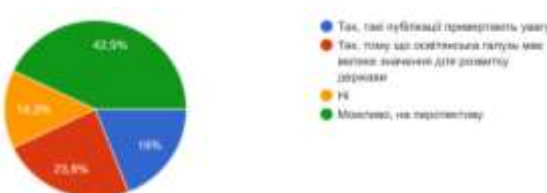


The answers to the next question revealed an interesting fact: even though media and publishers have always used the opportunity to meet with academic communities, only 14.3% of respondents answered in the affirmative to the question "Is your editorial office or publishing house interested in meetings with educators, scholars, students organized at the library?" Another 14.3% said they were not interested. However, 38.1% said they were "interested, but have not yet held such meetings", and 33.3% were willing to consider it. In general, this is again a large percentage of respondents – 71.4% – with whom it is possible to work in the future and create favorable conditions for joint activities with them.

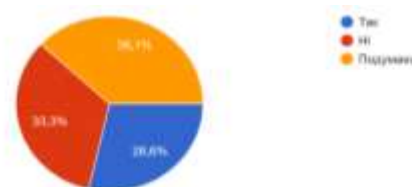
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Similarly, the next question – "Are you interested in covering important events of universities?" – highlights a considerable number of media professionals who are interested in the life of universities and university libraries because "yes, such publications attract attention" (19%), and "the education sector is of great importance for the development of the state" (23.8%). However, 57.2% showed their indifference to such topics by choosing either "no" (14.3%) or "maybe in the future" (42.9%).



The mirror question – "Do you see a library (in particular, a university library) as a means of promoting your resources and your media products?" – was answered positively by 66.7% (28.6% – "yes" and 38.1% – "I will think about it"). In fact, we can see that there is a formula for mutually beneficial interaction and enrichment, but a significant percentage of media professionals do not realize its effectiveness.



The respondents also had to ask a rather opportunistic question that is important for libraries: what are the grounds for granting access to closed collections, or subscription resources, or services of library staff to outsiders (not from the academic community)? Both in the survey and in the interviews, the vast majority of respondents (71.9%) found acceptable "non-contractual occasional calls to a hotline ("Virtual Help", "Ask a Librarian") or consultants". As an alternative, 38.1% of respondents consider it quite normal to sign a contract and 28.6% of respondents consider it quite normal to make an appointment at the library. In open-ended questions and during the direct dialog, it was noted that if information obtained from library collections is used in journalistic materials, the publication's authors should indicate this at the beginning or end of the publication.

Open-ended questions and interviews with the editors yielded several other productive ideas worth implementing in practice. For example, editors of specialized journals are convinced that it is possible to hold thematic academic webinars, discussions, etc., based on the material of publications in these publications (together with students and teachers). It was also noted that "libraries can be a good location for public events organized by the media". In the current context, the university pays much attention to developing of students' soft skills, youth civic engagement, and patriotic education, so social topics in media discussions could also be helpful.

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Another thesis of journalists, editors, and publishers attracts attention in the context of the conclusions in this part of the paper: "If universities and libraries become more open to journalists, it will help in their work". In fact, the surveys and interviews showed that respondents had not previously thought about the possibility of cooperation with university libraries, but primarily assessed the possibilities of such interaction positively. Therefore, the work of libraries to intensify joint activities with the media seems promising.

Current media and communication strategies for working with different groups of recipients

Daniel G. Tracy (2017) in his article "Libraries as Content Producers: How Library Publishing Services Address the Reading Experience" drew attention to one crucial aspect of the interaction between media and librarians. No one doubts how important it is for journalists and publishers to receive feedback from readers to learn about the peculiarities of perceiving certain information or how it is presented. Libraries, which are closest to these readers, could effectively provide this feedback, but do not fully realize this as an advantage.

How effectively libraries, including university libraries, can help media outlets survey readers is still an open question. It is quite possible for readers to agree to take surveys of library partners, participate in focus groups, etc. However, understanding readers' needs, tastes, expectations, and preferences is also essential in situations when feedback is needed to evaluate own media products, such as the information content, accessibility, usability of official website, and the conditions for using it. "Virtual Help" and "Ask a Librarian", which have archives of queries, are beneficial here. Such archives can be public or kept as internal documentation in reference and bibliographic departments. However, they are markers showing which services or resources are most in demand. The analysis of the published archives of the UDC suggests that the most popular service is the preparation of bibliographies by librarians. This is so obvious and unambiguous that, for example, the exceptionally well thought-out and structured VHD (virtual help desk) of the Mykhailo Kotsiubynskyi VSPU Library in the sections "Recent References" and "Popular Topics" contains only archives of thematic lists of sources. If we analyze the internal archives of the Drahomanov Ukrainian State University, this trend is only confirmed. Out of 171 requests in 2023, the first place is occupied by the specific of a list of references on a particular topic and the next large block of requests is related to organizational issues (work schedule, registration in the library, access to certain collections, obtaining a library card, signing a roundsheet, etc.) Traditionally, requests for UDC assignments occupy a somehow honorable place in this list. The rest of the requests are occasional, including the availability of a document in the collections, editing of bibliographic lists, clarification of source data, electronic delivery of a document, advice on registration in scientometric databases, acknowledgments, etc.



Taking into account the fact that students and teachers have different qualifications, experience with information, motivation, age, gender, etc., such one-sidedness of the most common requests shows only one thing: users do not fully understand what exactly they can ask, what questions they should address to the librarian. Obviously, the library's VHD would benefit if the reader immediately receives as much information as possible in this section's menu about what opportunities the library's website offers and what services they can use. For example, the project of redesigning the website of the National Library of the Drahomanov Ukrainian State University provides the sections "Order", "Ask About", and "Suggest", each of which contains a list of services and resources that the reader can use and which, accordingly, immediately catch the eye and become the subject of his or her interest. Consider that communication with the reader is a more dynamic process than informing. When looking for information, a person is usually motivated and assumes that this process can take a long time. When they are in a virtual communication environment, they expect "quick tips".

This example shows that the library offers its website, a media product, to the general public and checks its quality based on readers' reactions, just as publishers or media editors do.

As mentioned, libraries ensure that the information presented on their websites is accessible. However, another axiom of media professionals is becoming increasingly obvious to them: they need to consider the peculiarities of different groups of readers. They have different needs, experience, opportunities, motivation, etc. In addition, it should be noted that the university library used to work for a recipient audience, primarily associated only with the university. Now it produces media products (official website, social media pages) that are open and accessible to many readers.

It is already a well-established practice to present the sections "Student" and "Researcher" separately. Recently, the separation of the "Researcher" and "Teacher" sections has become increasingly popular. Undoubtedly, the processes of inclusiveness in education also play a role.

Most libraries have a "Barrier-Free" section on their websites. However, it should be realized that transferring the entire range of library resources and services to the barrier-free track at once and over time is difficult. This is due to the subject of display: a variety of programs for presenting content, a variety of needs.

Today, we see the following options for displaying barrier-free accessibility on a website:

1. Contacts of a librarian whom people with disabilities can contact if necessary;
2. Creation of an alternative website where information is presented taking into account the needs of people with disabilities. For example, in a larger font (or with a choice of fonts) for people with visual impairments, or in sign language videos or podcasts with voiceover. For example, we can mention the project of the library of the Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University (2023) and the website section of the Leibniz Information Center for Technology and Natural Sciences and the University Library (TIB – Leibniz-Informationszentrum Technik und Naturwissenschaften und Universitätsbibliothek) in Hannover (Technische Informationsbibliothek [TIB], 2023);

3. Creation of a multi-vector and structured section on barrier-free accessibility, which consider its various forms. For example, the library of Sumy State University (Sumy State University Library, 2023) in the section "Services and Facilities / Library without Barriers" provides the following list: a) physical (as equipped premises), b) informational (as adapted information to the possibilities of perception), c) social and civic, d) educational, e) economic.

Barrier-free accessibility is increasingly being considered as broadly as possible, including the interests not only of people with disabilities, but also of representatives of certain social groups whose membership or characteristics are tolerated in modern society (gender, race, age, etc.). For example, the Oxford Brookes University Library (2023) not only contains links to various

programs that can help with the perception of the material, but also provides information materials with a detailed justification for the need for a tolerance policy.

In this context, it is worth mentioning the practice of introducing "Easy Language" sections, where information is presented as simply as possible, using elementary vocabulary and syntax, explaining all terms and professionalisms. For example, the above website of the Leibniz Information Center for Science and Technology and the University Library of Hanover has such a feature.

The use of "easy language" in the media, libraries, and bookstores has already been legally supported in the United States and some European countries. There are some examples of its use in Ukraine. For example, in 2020, the PO "Krok" in Kolomyia launched the project "Easy Language for People with Intellectual and Mental Disabilities"; in 2021, "Tales of Transcarpathia. Easy Language» was presented in Uzhhorod. The websites of university libraries also mention resources for people with intellectual disabilities (for example, the library of the School of Social Sciences).

It is worth noting that the groups of recipients for whom easy language is intended are not only 1) people with mental disabilities, but also 2) migrants/international students who are just starting to learn the language and find it easier to perceive information through adapted texts; 3) people who have mental differences due to belonging to different social groups (racial, national, gender, age, etc.); 4) people who do not understand a particular topic; 5) people who are not used to reading complex texts or texts written in a complex language.

"Easy language" is close, but not identical to inclusion, because it is understood by absolutely everyone and the demand for it is driven by many more factors than disability.

In conclusion, we want to mention another trend in communication with readers. Libraries, and media of various types, have long since realized that the era of linear, unidirectional information is over. Modern communication practices involve a two-way process of information exchange, in which the consumer of information can simultaneously become its producer. This is the logic of social networks, which libraries are pretty active in. But not only them. Increasingly, libraries are taking care of sections that cover information support for disciplines: from the most straightforward version generated within the electronic catalog under the "Discipline" classifier to, for example, the "Course Materials" section in the KPI library (with an indication of the teacher and the number of sources) or the massive resource of the Oxford Library "Course Resource Guide", which includes experts, lists of literature, lists of resources of various content and purposes for each discipline. The most important thing is that the library can create such media products only in close cooperation with teachers, who turn from readers and recipients into content makers. Today, the library's task is to make it as easy as possible for teachers to fill their courses with literature, for example, by ordering the addition of sources in the same VHD. Such a project is currently under development at the National Library of the Drahomanov Ukrainian State University.

Conclusions

Since the library has long ceased to be a mere repository of other people's works and is now an active producer of its own media content, aimed not only at the academic community of its institution but also at the general public, it is important to monitor the trends that are constantly emerging in its publishing and media activities. The study has led to a number of conclusions.

Communication between university libraries and the media is gradually being transformed in the following areas:

- The sections "Media about us" and "For the media" should be supplemented with materials that journalists can use in their publications about the library and university without violating copyright, ethical norms and rules of institutions. Following the Law of Ukraine "On Mass Media", the titles of the sections should be edited to replace "mass communication media" with "media";

- It should also be realized that in modern realities the process of interaction with journalists and publishers can be bilateral and mutually beneficial: media professionals need to apply to the library for factual and bibliographic references, access to scientific journals, databases, newsletters and information sheets, organize various events together, find experts for their research using the library's resources, and consult on library, analytical, informational, scientific and educational activities;

- It is necessary to work more actively with the media community, as journalists and publishers are not fully aware of the opportunities and prospects for cooperation with university libraries.

In the context of media communication strategies for working with different groups of readers, libraries can

- cooperate with publishers and media in studying readers' requests, tastes, and preferences;
- take into account the opinions and reactions of library readers regarding the informational content and effectiveness of the library's own media products;

- apply publishing and media techniques for working with different groups of readers, consider the peculiarities of perception, in particular, pay more attention to barrier-free issues, justification of tolerance, and the use of "easy language".

- develop effective mechanisms for involving teachers in the resource provision of their courses as part of projects related to information support for disciplines.

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KHARYTONENKO O. I.

Український державний університет імені Михайла Драгоманова (Київ, Україна),
e-mail: o.i.kharytonenko@udu.edu.ua, ORCID 0000-0002-6544-6148

SAVENKOVA L. V.

Український державний університет імені Михайла Драгоманова (Київ, Україна),
e-mail: l.v.savenkova@npu.edu.ua, ORCID 0000-0001-8889-4026

BILORUSTSEVA T. M.

Український державний університет імені Михайла Драгоманова (Київ, Україна),
e-mail: t.m.bilorustseva@udu.edu.ua, ORCID <https://orcid.org/0009-0007-8843-9323>

MARIENKO A. O.

Український державний університет імені Михайла Драгоманова (Київ, Україна),
e-mail: marienko@npu.edu.ua, ORCID <https://orcid.org/0009-0003-7805-8675>

Комунікаційні аспекти медійної, видавничої, редакторської діяльності університетських бібліотек

Мета. Досліджено комунікаційні аспекти медійної, видавничої та редакційної діяльності університетських бібліотек на основі їхніх офіційних веб-сайтів та досвіду Наукової бібліотеки Українського державного університету імені Михайла Драгоманова. Метою було відстежити нові тенденції в медіа- та комунікаційній діяльності бібліотеки. Використано **методи** спостереження, опису, аналізу, порівняння контенту сайтів українських та зарубіжних бібліотек, а також анкетування та інтерв'ю зі стейкхолдерами університету, пов'язаними з медійною діяльністю. **Результати.** Опитування показало, що взаємодія бібліотек зі ЗМІ у сферах інформування, консультування, надання фактографічних та бібліографічних довідок, доступу до колекцій та пулу експертів у різних галузях, проведення спільних освітніх заходів користується високим попитом. Бібліотеки та медіа також обмінюються методами популяризації та розповсюдження власного медіаконтенту. **Висновки.** Університетським бібліотекам варто активізувати роботу з медіа та видавництвами на паритетних і взаємовигідних умовах. Оскільки бібліотека в сучасних умовах виробляє і пропонує власну

медіапродукцію широкому загалу, масовій аудиторії, вона також повинна використовувати методи роботи видавництв і редакцій з різними групами читачів.

Ключові слова: медіадіяльність бібліотек; видавнича діяльність бібліотек; медіапродукція університетської бібліотеки; медіакомунікації в бібліотеці

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TSYBENKO I. O.

State Scientific and Technical Library of Ukraine (Kyiv, Ukraine),

e-mail: tsyb2012@ukr.net, ORCID 0000-0002-6408-9011

ZHEREBCHUK S. V.

State Scientific and Technical Library of Ukraine (Kyiv, Ukraine),

e-mail: zerebcuksofia@gmail.com, ORCID 0000-0002-0212-7107

The Necessity of Implementation of RI's Module to the Ukrainian Research Information System

The **objective** of implementing an RI (Research Information) module to the Ukrainian Research Information System is to enhance the management, visibility, and accessibility of research-related information within the Ukrainian research ecosystem. The module aims to improve the efficiency of research administration, promote collaboration among researchers and institutions, and facilitate the dissemination of research outputs. In this article, the authors attempted to investigate the need for developing a comprehensive classification of national research infrastructures with the aim of implementing a separate module into the national CRIS system. The work is aimed at analyzing the possibilities and advantages of implementing the RI (Research Information) module in the Ukrainian Research Information System. **Methods.** Developing the national classifier, the experience and methodology of the EU were utilized, taking into account both legislative and technical peculiarities specific to the country. Additionally, the approaches of various Ukrainian research institutions in defining and classifying research infrastructures were studied, and the existing experience in CRIS systems related to this matter was also examined. **Results.** The research should highlight the existing challenges and limitations in managing research-related information within the Ukrainian research ecosystem. This could include issues related to data fragmentation, lack of standardization, limited accessibility, inefficient research administration processes, and low visibility of research outputs. Based on the research findings, a set of proposed features and functionalities for the RI module should be presented. These features should address the identified challenges, stakeholder needs, and lessons learned from international practices. The proposed module should aim to improve data management, collaboration, visibility, and efficiency in research administration. Besides, the authors are trying to figure out the role of the libraries into CRIS implementation process. The scientific library's expertise in research data management, data curation, user support, collaboration, and promotion makes it an invaluable partner in implementing a Research Information module into the current Research Information System. **Conclusion.** The research should provide a comprehensive understanding of the necessity and potential benefits of implementing an RI module to the Ukrainian Research Information System, guiding future decision-making and actions in this regard. In general, the need for developing an operational classifier for the national CRIS system is driven by the fact that such a step will provide structured frameworks for managing research activities, efficient allocation of resources, including financial resources, strategic planning, and collaborations.

Keywords: research infrastructure; CRIS systems; classification of research infrastructure; open science; open access; digital tools in science; libraries

Introduction

The research infrastructure classifier for a CRIS (Current Research Information System) system is an essential component that plays a critical role in enabling effective research management and decision-making process. The research infrastructure classification refers to the categorization of research resources, such as equipment, facilities, and services, into a hierarchical structure that helps to identify and manage these resources systematically (Biesenbender et al., 2019).

The classification of research infrastructure (RI) in a CRIS system enables the identification and tracking of available resources, which helps to ensure that resources are allocated effectively and efficiently. Also, by providing a comprehensive overview of the available

RI, a CRIS system with a robust classification system can support strategic planning, including identifying areas for investment and improvement. The RI classification could be used for supporting reporting and evaluation, by providing a structured framework for tracking and measuring research outputs, including publications, patents, and grants.

Also taking into account the EU experience, the research infrastructure classification is an essential component of a CRIS system, providing a structured framework for managing research infrastructure and enabling effective resource allocation, strategic planning, collaboration, and reporting. Even more, in EU the classification systems for CRIS appear with the administration purpose (Zendulková et al., 2022).

The objectives of this article is analyzing the possibilities and advantages of implementing the Research Information (RI) module in the Ukrainian Research Information System. Developed by the State Scientific and Technical Library (SSTL) of Ukraine, this module focuses on enhancing the management, visibility, and accessibility of research-related information within the Ukrainian research ecosystem. One of the key objectives of implementing the RI module is to improve research management in Ukraine. By integrating research-related information into a centralized system, the module enables more efficient tracking and monitoring of research projects, funding, and collaborations. This streamlines administrative processes, facilitates resource allocation, and enhances decision-making for research institutions, funding agencies, and policymakers.

Methods

For the purpose of this research, authors conduct a comprehensive analysis of the current Ukrainian Research Information System to identify its strengths, weaknesses, and areas for improvement. This analysis should involve assessing the existing infrastructure, data management processes, user requirements, and stakeholder expectations. Another method, used for this research is key stakeholder engagement, including researchers, research institutions, funding agencies, and policymakers, to gather their input, requirements, and feedback regarding the implementation of the RI module. This was done in our case through interviews and workshops. Based on the analysis and stakeholder engagement the functional requirements of the RI module was defined. This includes determining the types of research information to be included, data standards, metadata requirements, user roles and permissions, reporting capabilities, integration with existing systems, and user interface design.

Regarding to the importance of RI classifiers and their usage in CRIS systems there are several EU research projects presented a classification system for research infrastructures in CRIS systems based on the type of infrastructure, the research domain it supports, and its maturity level.

In our research, we use the experience of existing classification systems for research infrastructure in CRIS systems:

The Common European Research Information Format (CERIF) classification system is a widely used standard for classifying research infrastructure in CRIS systems. It includes categories for facilities, equipment, services, and expertise, and allows for the creation of hierarchical relationships between different types of infrastructure (EuroCRIS, n.d.).

The European Research Infrastructure for Science, technology and Innovation Indicators (RISIS) classification system is another widely used standard for classifying research infrastructure in CRIS systems. It includes categories for research infrastructure types, domains, and governance, and allows for the creation of relationships between different types of infrastructure.

The CLASS classification system developed by the Danish Agency for Science, Technology and Innovation is a national standard for classifying research infrastructure in

Denmark's CRIS system. It includes categories for research infrastructure types, domains, and access modes, and allows for the creation of hierarchical relationships between different types of infrastructure.

The Nordic e-Infrastructure Collaboration (NeIC) classification system is a regional standard for classifying research infrastructure in the Nordic countries' CRIS systems. It includes categories for research infrastructure types, domains, and geographical coverage, and allows for the creation of relationships between different types of infrastructure (Guideline for the ONLINE S3, n.d.).

Also, separately we used the experience of EU RI classification project for case study and adaptation of EU practice for Ukrainian infrastructures. In this context it should be mentioned the MERIL project (Mapping of the European Research Infrastructure Landscape) ((MERIL. (n.d.)) and CatRIS (Catalogue of Research Infrastructure Services) (<https://portal.meril.eu/meril/>).

Results and Discussion

Based on the EU experience we try to elaborate the functioning RI taxonomy for using first of all in Ukrainian CRIS – URIS. The Ukrainian Research Information System (URIS) is a national system designed to collect, store, and disseminate information about research activities and results in Ukraine. URIS provides a comprehensive view of research activities and results in Ukraine, including information on projects, publications, patents, and other research outputs. URIS is designed to be compatible with international research information systems, making it easier for Ukrainian researchers to collaborate and connect with the global research community and provides a wealth of data on research activities and outputs, making it a valuable resource for research evaluation and assessment. By providing a centralized platform for the dissemination of research information, URIS can enhance the visibility and impact of Ukrainian research both nationally and internationally. URIS has the potential to significantly enhance the research ecosystem in Ukraine by providing a centralized platform for the collection, storage, and dissemination of research information (Kaliuzhna & Auhunas, 2022).

Even though the system is already operational, URIS is under construction and RI module should become the one of important component. The system of RI classification should correspond the following tasks:

Data management. A classification system can help to manage research infrastructure data in a standardized and structured way, making it easier to input, retrieve, and analyze information. This can help to ensure data quality and consistency, and reduce errors and duplication.

Reporting. A classification system can enable more accurate and comprehensive reporting on research activities and outputs, by providing a standardized framework for categorizing and analyzing research infrastructure data. This can help institutions to meet reporting requirements for funders, government agencies, and other stakeholders.

Resource allocation. A classification system can inform resource allocation decisions in CRIS systems, by identifying areas where investment in research infrastructure may be needed. This can help institutions to allocate resources more effectively and efficiently, and to ensure that resources are directed to areas of greatest need and potential impact.

Collaboration. A classification system can facilitate collaboration between researchers and institutions, by providing a standardized way to identify and categorize different types of research infrastructure. This can help to foster partnerships and interdisciplinary research initiatives, and facilitate knowledge sharing across domains and institutions.

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Based on the EU practices and taking into account the existing researches we are thinking that RIs can be classified in different ways for URIS purposes, depending on the needs and goals of the specific system (using different classification groups).

In our classification model, we use hierarchy system laboratories - sets of instruments - scientific equipment. All these units classify by different way according to the different approaches:

1. RI classification based on specific scientific domains or disciplines. For example, you can have classifications like biological research infrastructure, physical sciences research infrastructure, social sciences research infrastructure, etc. This approach allows for a more focused categorization based on the specific needs and requirements of each domain.

2. RI classification based on its scale or size. This approach can include classifications like national research infrastructure, regional research infrastructure, institutional research infrastructure, and even individual research infrastructure. It helps in understanding the scope and magnitude of the infrastructure available in different contexts.

3. Functional Classification. This approach involves classifying research infrastructure based on their functions or purposes. For example, you can have classifications like experimental research infrastructure, computational research infrastructure, data storage and analysis infrastructure, or collaborative research infrastructure. This approach focuses on the specific roles and capabilities of the infrastructure. For instance, for the URIS we will use the classification below:

Equipment and Facilities

This category includes research equipment and facilities such as laboratories, observatories, and research vessels.

Data and Information Services

This category includes data repositories, archives, and information services that support research activities.

Research Networks and Collaborations

This category includes networks and collaborations between researchers, research institutions, and industry partners.

Research Support Services

This category includes services that support the research process such as project management, legal and ethical compliance, and funding acquisition.

Education and Training Services

This category includes services that provide education and training opportunities for researchers, students, and staff.

Outreach and Engagement Services

This category includes services that promote the dissemination of research results to the wider public and encourage engagement with stakeholders.

4. RI classification based on the level of accessibility or availability to different user groups. This can include classifications like open access research infrastructure, restricted access research infrastructure, or specialized access research infrastructure. It highlights the different levels of accessibility and helps researchers identify infrastructure that suits their needs.

5. RI classification based on its interdisciplinary nature or its ability to support research across multiple disciplines. This approach recognizes the importance of interdisciplinary collaboration and encourages the development of infrastructure that can facilitate such collaborations.

Interdisciplinary classification of research infrastructure involves categorizing infrastructure based on its ability to support and facilitate interdisciplinary research. Interdisciplinary research refers to the integration and collaboration of multiple disciplines or fields of study to address complex problems or research questions that cannot be effectively tackled within a single disciplinary framework.

The infrastructure classified under this approach is capable of accommodating and supporting researchers from multiple disciplines. It includes facilities, equipment, and resources that are relevant and applicable across different fields of study. For example, a shared laboratory space that can be used by researchers from biology, chemistry, and physics would fall under this classification.

The goal of interdisciplinary classification is to identify and classify RI that can support interdisciplinary collaborations and enable researchers from different disciplines to work together effectively. This classification recognizes the importance of infrastructure in fostering interdisciplinary research and helps researchers find and access the necessary resources for their interdisciplinary projects.

Interdisciplinary classification of RI refers to the categorization or grouping of research infrastructure based on their interdisciplinary nature and the diverse fields or disciplines they support. The example of how research infrastructure can be classified in an interdisciplinary manner could be:

Data and Computing Infrastructure

High-performance computing clusters

Data storage and management systems

Data visualization tools and software

Cloud computing platforms

Laboratory Facilities

Biotechnology laboratories

Material science laboratories

Chemistry laboratories

Biochemistry laboratories

Imaging and Microscopy Facilities

Electron microscopy

Confocal microscopy

Fluorescence microscopy

X-ray imaging

Genomics and Proteomics Facilities

DNA sequencing platforms

Genomic data analysis tools

Mass spectrometry

Protein structure determination

Environmental Monitoring and Analysis

Climate monitoring stations

Air and water quality monitoring

Ecological field stations

Remote sensing and GIS (Geographic Information System)

Simulation and Modeling

Computational fluid dynamics (CFD) simulations

Molecular dynamics simulations

Agent-based modeling

Systems dynamics modeling

Human Studies and Behavioral Research

Neuroimaging facilities

Cognitive psychology labs

Experimental economics labs

Social science research centers

Energy and Sustainable Technologies

Renewable energy research facilities

Energy storage and conversion systems

Advanced materials for energy applications

Sustainable manufacturing technologies

Bioinformatics and Biostatistics

Bioinformatics databases and software

Statistical analysis tools for genomics

Metagenomics analysis platforms

Computational biology resources

Advanced Instrumentation and Sensor Networks

Particle accelerators

Nanotechnology research facilities

Sensor networks for environmental monitoring

Advanced analytical instruments

This classification demonstrates how RIs can span multiple disciplines and fields of study, supporting interdisciplinary research and collaboration. Researchers from various domains can access and utilize these resources to address complex scientific questions and pursue innovative solutions to real-world problems.

6. Resource-Based Classification. This approach involves classifying research infrastructure based on the types of resources they provide. For example, classifications can include laboratory infrastructure, fieldwork infrastructure, computing infrastructure, or library and archival infrastructure. It focuses on the specific resources required for research and provides a more granular classification.

During the work under the project the several problems or challenges appeared:

1. Research infrastructures can be diverse and complex, making it challenging to create a comprehensive and standardized classification system. It is not enough to use one or even two criteria for operational classification system. It should be taken into account the complex of issues as well as the connections and link between different types of RIs.

2. Different research domains have different types of infrastructures, and a classification system must be flexible enough to accommodate this heterogeneity. That is mean that the classification system should adapt to the diverse infrastructures found in various research domains. The system should be adaptable and adjustable to accommodate the differences in infrastructures across research domains. It should not be rigid or limited to a specific set of criteria or assumptions.

3. Research infrastructures can change rapidly over time, and a classification system needs to be updated to reflect these changes.

4. Many research activities are cross-disciplinary, and it can be challenging to classify infrastructures that span multiple research domains.

5. Different disciplines and research communities often use different language and terminology, which can make it difficult to create a standardized classification system that is widely accepted.

6. In some cases, there may be limited or incomplete data available about research infrastructures, making it difficult to accurately classify them.

To address these challenges, a flexible and adaptable classification system that takes into account the diversity of research domains and infrastructures is needed. This may require collaboration between different research communities, as well as ongoing efforts to collect and update data about research infrastructures.

Also, it should be kept in mind that classification system is designed and developed based on the specific needs of the institution or organization managing the CRIS system. The classification system may be based on an existing standard or developed from scratch. Also, the classification system is planned to be regularly maintained and updated to ensure its relevance and accuracy over time. This may involve adding new categories or revising existing ones as new types of infrastructure emerge or as the needs of the institution or organization change. Researchers and other stakeholders can input data about research infrastructure into the CRIS system, using the classification system to categorize the infrastructure. They can also retrieve information about research infrastructure using the classification system to search for specific types of infrastructure.

One of the important demands for the RI module is an ability to generate reports and visualizations that provide insights into the types and distribution of research infrastructure across the institution or organization's research portfolio. This fact also taken into account during the elaboration of RI classification.

The library plays a crucial role in implementing a Research Information module into a Research Information System. From needs assessment to system integration, data management, user support, and governance, the library's expertise in research information organization and dissemination can greatly contribute to the success of the implementation process.

During the all cycle of implementation and usages of the CRIS the library staff may need to collaborate with researchers, faculty, and administrative departments to migrate and integrate existing research data into the new Research Information module. This could involve importing data from various sources, such as publication databases, institutional repositories, faculty profiles, and grant management systems. Libraries have expertise in metadata management and data standardization. So, during the first step (conduct a comprehensive needs assessment to understand the requirements and goals of integrating the Research Information module into the existing CRIS) only libraries are able to identify the specific functionalities, data sources, and workflows that need to be supported.

Besides, once the needs are identified, the next step is to integrate the Research Information module into the current CRIS infrastructure. This would involve custom development, configuration, or integration with existing library systems and databases.

The scientific library's expertise in research data management, data curation, user support, collaboration, and promotion makes it an invaluable partner in implementing a Research Information module into the current Research Information System. Therefore, the State Scientific and Technical Library of Ukraine's involvement ensures that the module is effectively designed, integrated, and utilized to support the institution's research activities.

Conclusion

The RI module in URIS can help decision-makers allocate resources effectively and efficiently by identifying gaps and priorities in research infrastructure and in the same time to evaluate the effectiveness of research infrastructure investments, by providing a basis for assessing the impact of different types of infrastructure on research outcomes. This can help to ensure that resources are directed to areas of greatest need and potential impact.

RI classifier will facilitate collaboration between researchers and research institutions by providing a standardized way to identify and categorize different types of infrastructure. This can help to foster partnerships and interdisciplinary research initiatives.

Also, the RI's module to the Ukrainian Research Information System will inform strategic planning by providing insights into the current state of research infrastructure and identifying areas where investment and development may be needed;

facilitate the sharing of knowledge and best practices by providing a common language and framework for discussing research infrastructure across different domains and institutions;

helps institutions and organizations manage and share information about their research infrastructure more effectively, improving their ability to plan, evaluate, and communicate the value of their research activities.

At the same time, the RI classification can be useful for URIS to organize and categorize research infrastructure data, and to facilitate analysis and reporting of research activities and outputs. It can also help to identify gaps in research infrastructure and guide decision-making on investment and resource allocation.

Scientific libraries have extensive experience and expertise in managing research data. They understand the complexities of research information, including publications, datasets, and other scholarly outputs. Their knowledge of data organization, metadata management, and data preservation ensures that the Research Information module is designed and implemented effectively.

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TSYBENKO I. O.

Державна науково-технічна бібліотека України (Київ, Україна),
e-mail: tsyb2012@ukr.net, ORCID 0000-0002-6408-9011

ZHEREBCHUK S. V.

Державна науково-технічна бібліотека України (Київ, Україна),
e-mail: zerebchuksofia@gmail.com, ORCID 0000-0002-0212-7107

Необхідність впровадження модуля «Дослідницька інфраструктура» до Національної електронної науково-інформаційної системи URIS

Мета. Метою впровадження модуля ДІ (Дослідницька інфраструктура) до Національної електронної науково-інформаційної системи URIS є покращення управління, видимості та доступності інформації, пов'язаної з дослідженнями, в українській науковій екосистемі. Модуль спрямований на покращення ефективності адміністрування досліджень, сприяння співпраці між дослідниками та установами, а також на полегшення розповсюдження результатів досліджень. У цій статті автори спробували дослідити потребу у розробці комплексної класифікації національних дослідницьких інфраструктур з метою впровадження окремого модуля в національну систему управління науково-дослідницькою інформацією (CRIS). **Методика.** При розробці національного класифікатора використовувалися досвід та методологія ЄС, з урахуванням законодавчих та технічних особливостей, властивих країні. Додатково були вивчені підходи різних українських наукових установ до визначення та класифікації дослідницьких інфраструктур, а також був проаналізований наявний досвід, що наразі використовується у CRIS системах з цього питання. Крім того, автори намагалися зрозуміти роль бібліотек у розробці та впровадженні CRIS систем. **Результати.** Дослідження повинно висвітлити наявні проблеми та обмеження управління інформацією, пов'язаною з дослідженнями, в українській науковій екосистемі. Це може включати проблеми, пов'язані з фрагментацією даних, відсутністю стандартизації, обмеженою доступністю, неефективними процесами адміністрування досліджень та низькою видимістю результатів досліджень. На основі результатів дослідження повинен бути представлений набір запропонованих функцій та можливостей для модуля ДІ. Ці функції мають вирішувати виявлені проблеми, враховувати потреби зацікавлених сторін та використовувати міжнародну практику. Запропонований модуль має на меті покращити управління даними, сприяти співпраці, видимості та ефективності в адмініструванні досліджень. **Висновки.** Дослідження має надати всебічне розуміння необхідності та потенційних переваг впровадження модуля ДІ до Української системи науково-дослідницької інформації, що буде сприяти майбутнім прийняттям рішень. Необхідність розробки робочого класифікатора для національної системи управління науково-дослідницькою інформацією обумовлена тим, що такий крок надасть структуровані рамки для управління науковою діяльністю, ефективного розподілу ресурсів, включаючи фінансові, стратегічного планування та сприятиме співпраці.

Ключові слова: дослідницька інфраструктура; CRIS системи; класифікатор дослідницьких інфраструктур; відкрита наука; відкритий доступ; цифрові інструменти в науці; бібліотеки

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KULYK M. M.

Scientific Library, Yaroslav Mudryi National Law University (Kharkiv, Ukraine),

e-mail: m.m.kulyk@nlu.edu.ua, ORCID 0000-0001-8439-0971

Challenges of Open Science: Problems of Metadata Research and Analysis of Scientometric Indicators of Scientists (Experience of the Scientific Library of Yaroslav Mudryi National Law University)

Objective. The scientific publication aims to analyze the development of open science based on international and national experience, as well as to show efforts of the National Law University in the direction of promotion of open science and management of metadata related to scientometrics indicators of scientists. **Methods.** To attain the indicated objective, theoretical methods of scientific research were used: literature analysis and systematic approach. **Results.** The result of this research is systematization of scientometrics services developed by the Scientific Library of Yaroslav Mudryi National Law University to inform scientists about their scientometric indicators that reflect publication activity in the two main international scientometric databases Scopus and Web of Science. **Conclusions.** It is important to promote open science in university repositories, which are one of the services that manage metadata.

Keywords: open science; metascience; metadata; university repository; scientometrics services; Scientific library of Yaroslav Mudryi National Law University

Introduction

The continuous development of open science requires innovative decisions, which are based on modern research of the international scientific community, namely: 1) open access (Schöpfel et al, 2023; Holley, 2018; Eve & Gray, 2020) and open science (Center for Open Science, n.d.), its promotion (Boyack, Smith, & Klavans, 2020); 2) definition of the concept of metadata (Qin & Zeng, 2022) and management of metadata (Metascience, 2023); 3) roles of universities (Robinson-Garcia, Costas, & van Leeuwen, 2020), repositories and the importance of academic libraries in the promotion of knowledge in relevant areas (Khosrow-Pour, 2019; Lo, Cho, Chiu, & Allard, 2019; Information Resources Management Association, 2020).

At the same time, the field of activity of university librarians in Ukraine still needs an understanding of the general picture of metadata formation and management.

The objective of the scientific publication is generalization and analysis of the development of metascience, metadata and presentation of the list of modern novation services and program products, which help to form and operate the metadata.

Methods

To achieve this goal, the following theoretical methods of scientific research are used: literature analysis and systematic approach to the generalized and analyzed contents of the presented topic.

That is why the author singled out two subsections in the "Results" section: "Analysis of specialized literature" and "Scientific Library of Yaroslav Mudryi National Law University on the way to open science".

Results and Discussion

Analysis of specialized literature.

Metascience is a scientific social movement that seeks to use quantification and experimentation to diagnose problems in research practice and improve efficiency. It draws together data scientists, experimental and statistical methodologists, and open science activists into a project with both intellectual and policy dimensions. Metascientists have been remarkably successful at winning grants, motivating news coverage, and changing policies at science agencies, journals, and universities. The social movement lens is useful for understanding the popularization and impact of the reproducibility crisis narrative and suggests ways the institutions of science are adapting to meet a changing political and technological landscape (Peterson & Panofsky, 2023).

Constant change, continuous innovation. Through partnerships, integrations, and support of cross-stakeholder initiatives in RightsLink for Scientific Communications (RLSC), we support Open Access (OA) funding workflows that serve everyone in the community — publishers, institutions, funders, and authors. We've been an active partner in the evolution of hybrid and pure OA publishing models, working with publishers to put the author and institution experience first, and manage shared infrastructure in a scalable and sustainable way (CCC. Metadata Challenges, 2023).

As the scholarly communications community continues its shift to full OA, stakeholders recognize that new strategies, inclusive policies, and a robust network of interoperable data and systems are essential for making critical infrastructure improvements, and much progress is underway. In that environment, a dedication to data stewardship across each stakeholder group, and the service providers supporting them, will lead not only to a smoother OA transition, but also to greater research integrity; data sharing; reliable, trustworthy metrics on research impact; and a responsive, equitable rewards and recognition system (CCC. Metadata Challenges, 2023).

Jamie Carmichael, Jessica Thibodeau, Roy Kaufman published the results of the study "The State of Scholarly Metadata: 2023" (Jamie, Thibodeau, & Kaufman, 2023; Copyright Clearance Center, 2023). Working with Media Growth Strategies, the authors interviewed representatives from institutions, publishers, funders, researchers, service providers, PID providers, and industry associations to capture a broad view of the current state of metadata and PIDs across the ecosystem.

«Many stakeholders we interviewed recognize that new metadata strategies, inclusive policies, and a robust framework of interoperable systems are essential for modernizing this element of scholarly communications. It's also clear that an ecosystem-wide commitment to improving data quality across all groups will facilitate the transition to open science while helping to preserve research integrity, expand discoverability, and improve impact measurement. If the industry works collectively to shrink these gaps by reexamining metadata policy and practice, stakeholders will undoubtedly feel less pain. Or, we can continue the current system of entropy, friction, and frustration. Together, we can decide our path».

Expansion of the areas of activity of the previously initiated projects, such as ORCID (ORCID, n.d.a), KUDOS (Kudos, n.d.) and new services OSF (OSF, n.d.), OPTIMETA (OPTIMETA, n.d.), etc., is aimed at improvement of the metadata management processes.

What is Data Management? Data management refers to the process of organizing, storing, protecting, and maintaining data throughout its lifecycle. Companies need physical and logical data management because they serve different but equally important purposes in managing data. However, often logical data management is an overlooked and underused data management style. Logical data management can add tremendous productivity and agility gains to existing data

management practices. Here is a quick overview of these two data management styles (“Data management overview”, n.d.).

In order to publish more research, faster, without compromising on quality, it’s more important than ever to invest in a robust research infrastructure – the tools and systems that enable researchers to spend more time doing research and less time managing it. Whether they are applying for a grant, identifying possible collaborators, searching for the right information, or submitting a manuscript, we can make their lives easier and more productive by providing them with equitable access to reliable, openly available, and user-friendly services.

Persistent identifiers (PIDs) – for people (researchers), places (their organizations), and things (their outputs and other research objects) – are essential to many of these services. Being able to correctly identify and connect a researcher with their institution(s), publications, and other works and routinely including that information in metadata improves search and discovery, facilitates credit and recognition, reduces errors, and enables other efficiencies. Open PIDs, such as DOIs (Digital Object Identifiers), ORCID iDs, and ROR (Research Organization Registry) identifiers have additional benefits. Not only are they free to end users, they are also fully interoperable, resolvable, and enable the creation of open, well-defined provenance information (Meadows, 2020).

The most important thing about PIDs is the metadata that is associated with them – that is, the information that can be retrieved when a piece of software, platform, or web application requests data from the PID provider’s API, which can, and often does, contain other PIDs. Metadata enables connections to be made between published articles, researchers, datasets, computer programs, institutions, grants, funders, and more (Phill & Meadows, 2021).

After working with multiple stakeholders to encourage ORCID adoption, it became clear very quickly that other open PIDs and open technologies are integral to creating a more efficient scholarly communication ecosystem for all. The more we can link PIDs together, the more easily we can gauge research activity (Meadows, 2023a).

Common PIDs (not all of which are open) that have already been identified in the RDA WG’s work include: ORCID or ISNI for researchers; ROR or ISNI for research organizations; Crossref DOIs for research articles; DataCite DOIs or Handles for research data; Crossref DOIs for grants; RAiD for projects; and DOIs, IGSN and RRID for samples and specimens.

While there are many similarities in approach and intention among the countries participating in the RDA group, there are also many differences among them. The research endeavor is global, but research policy and funding are largely executed on a national level — and, of course, other local needs must also be addressed in any national PID strategy (Meadows, 2023b).

To be the most effective, PIDs would not only be created for the people, places, and things associated with research, but would also be collected and used by funders, institutions, and publishers, at the earliest possible point in the process. For example, ORCID IDs for researchers would be captured by funders during grant application; grant IDs would be captured by institutions at the point of award; and so on (Meadows & Phill, 2021).

The PID-optimized Research Lifecycle is presented on infographic (Brown, Jones, Meadows, & Murphy, 2021).

Scientific library of Yaroslav Mudryi National Law University on the way to open science.

At the national level, the implementation of open science has begun in Ukraine from the creation of the National Repository of academic texts, academic repositories (including the repository of Yaroslav Mudryi National Law University (“DSpace at NLU”, n.d.).

At the legislative level in Ukraine, the national plan for open science (Cabinet of Ministers of Ukraine, 2022) is approved. The document is another step on the path of Ukraine's integration into the European research space. Its implementation ensures the realization of the Agreement between Ukraine, on the one side, and the European Union and the European Atomic Energy Community, on the other side, on Ukraine's participation in the Research and Innovation Framework Program "Horizon Europe" (2021–2025), which is complementary to the Framework Program on Research and Innovations "Horizon Europe". From now on, Ukraine joined the EU countries, which have an approved plan for implementation of the open science principles (Ministry of Education and Science of Ukraine, 2022).

The strategic priority of Yaroslav Mudryi National Law University ("Development strategy", n.d.) is to achieve the European, and in the future the world level in the main areas of its activities.

In order to develop integrative, competence-based, innovative approaches to educational and scientific activities, the Scientific Library of Yaroslav Mudryi National Law University (hereinafter, NLU) joins directions in the strategic support of educational and scientific tasks of the University, among which is the continuation of the implementation of the integration of NLU to open science with the help of open access and the creation of open resources (Pasmor & Kulyk, 2020) for specific educational areas, in particular, such resources as "Standardized electronic educational and methodological complex (SENMK)" (Scientific Library of Yaroslav Mudryi National Law University, n.d.d), "Digital projects" ("Digital projects", n.d.) etc. were created.

A special sector (hereinafter referred to as Scientometrics and Bibliometrics service), created as a structure in the library supporting publication activity of university scientists, plays an important role among the units of Scientific Library in the strategic support of the educational and scientific tasks of NLU (Kulyk, 2021). During the Russian military aggression on the territory of Ukraine, the above sector, despite certain difficulties, continues to perform the work provided for by the scientific and educational activities of NLU and its Scientific Library (Scientific Library of the Yaroslav Mudryi National Law University, 2023). Considering the legal specialization of our University (Kulyk, 2018), which is a humanitarian field of activity (Sooryamoorthy, 2021), the University has its own peculiarities (Barabash & Danilyan, 2021) in promoting scientific research, analysis and management of large metadata among institutions of higher education (Welch, & Li, 2021).

The need for analysis and management of large metadata in scientometrics required the creation and improvement of special programs that would help any organizations in measuring their scientometric indicators and performing a comparative analysis with other specialized institutions of higher education. To carry out analytical activities with metadata in the Scopus database, the ELSEVIER company has software tools: 1) keys API ("Elsevier developer portal", n.d.); 2) SciVal analytical system (SciVal, n.d.); 3) Scopus Data Fetcher ("*Elsevier API Query Tool*", n.d.) etc. The CLARIVATE company has similar analytical tools: 1) keys API (Clarivate, n.d.a); 2) analytical system InCites ("InCites Benchmarking & Analytics", n.d.); 3) Converis (Clarivate, n.d.b), etc.

The author of the book "Scientometrics for the Humanities and Social Sciences" (Sooryamoorthy, 2021) – the first ever book on scientometrics, which considers the historical development of both quantitative and qualitative data analysis in scientometric research, compares the three main scientometric platforms: Web of Science, Scopus, Google Scholar. Also, the author R. Suryamurt cites individual cases of scientometric research in the humanities and social sciences, explaining their research goals, data sources, and methodologies.

Although, during the last decade, there was a significant growth of available bibliographic data sources and metrics, Web of Science (WoS) and Scopus databases (DBs) still remain the two

major and most comprehensive sources of publication metadata and impact indicators. Therefore, they serve as the major tools for a variety of tasks: from journal and literature selection or personal career tracking to large-scale bibliometric analyses and research evaluation practices in all possible levels (Pranckutė, 2021).

Institutions of higher education (hereinafter, IHEs) of Ukraine received support from the companies ELSEVIER (Elsevier, n.d.) and CLARIVATE (Clarivate, n.d.c) and have the opportunity to use analytical capabilities of two scientometric platforms Scopus and Web of Science.

Internet resources on scientometrics, formed by specialists of the NLU Scientific Library before the beginning of the Russian invasion of Ukraine, were effectively used during this period to inform teachers about publication activity with the aim of increasing it in the international scientometric databases Scopus and Web of Science. This is a compilation with references to indicators for 35 departments ("Scientometric indicators", 2023), which reflects scientometric indicators in the author profiles of the academic community in the Scopus and Web of Science databases (Scientific Library of Yaroslav Mudryi National Law University, n.d.a). The employees of the Scientometrics sector record the specified metadata in consolidated tables for each of the 35 departments once per year, which allows one to carry out certain analytical activities and get an idea on the formation of the image of a scientist (Iatsyshyn et al., 2021).

Since the beginning of 2023, the number of scientific and pedagogical workers of Yaroslav Mydryi National Law University with publications in Scopus is equal to 377 authors, and on the Web of Science platform – 369 authors (data as of April 2023) (Yaroslav Mudryi National Law University, n.d.).

To display the indicators of the publication activity of the university's scientists, a resource was created on which the internal accounting of authors' publications by departments is carried out in Scopus (Scientific Library of Yaroslav Mudryi National Law University, n.d.b) and Web of Science (Scientific Library of Yaroslav Mudryi National Law University, n.d.c).

In order to solve problematic issues related to the arrangement of Publons author profiles, which have been transferred to the Web of Science platform since August 18, 2022, communication activities are carried out directly with the authors of publications indexed on the Web of Science platform by sending appropriate messages with a request to create an author profile, add and/or delete publications in the author's profile, confirm the author's profile and/or confirm publications in the author's profile, etc. with the provision of relevant recommendations, presentations and video instructions. Since August 18, 2022, 78 messages were sent followed by individual online/offline consultations.

In order to reliably display the indicators of publication activity in the author profile in the Scopus database, the employees of the Scientometrics and Bibliometrics sector edit the authors' profiles by sending requests to the Scopus service (118 requests were sent).

Conclusions

Unfortunately, not all IHEs in Ukraine have access to the SciVal analytical program (Ministry of Education and Science of Ukraine, 2021), which provides more analytical capabilities and settings. As for the access to the analytical software product InCites, it is provided to only one institution in Ukraine – the Ukrainian Institute of Scientific and Technical Expertise and Information, where scientists from other institutions can use this access (Nauka ta Metryka, 2020).

Technical component, which requires experienced engineering staff to set up free API services in their own software products, is becoming a challenge for academic libraries of humanitarian higher education institutions in Ukraine.

The number of members of the ORCID-Ukraine consortium is increasing in view of further opportunities (ORCID, n.d.d). Thus, 35 institutions of Ukraine have already joined the ORCID-Ukraine consortium (as of 28.08.2023) (ORCID, n.d.c), but out of more than 191 IHEs of Ukraine with a law orientation (Ocbira.ua, 2023), only one has become a participant in this project - the National University "Odesa Law Academy" (ORCID, n.d.b). This is connected with certain difficulties.

In conclusion, we note that the leadership of each organization (university or scientific institute) determines the choice of ways to integrate and adapt to modern innovative services and software tools for the formation and management of metadata in order to improve the image, subject to the existence of financial and technological capabilities and trained personnel of specialized structural units, which can be included in libraries. Among the available tools for working with metadata, there is offered an update of the software for university repositories, which makes it possible to present the work of scientists in the open access and for free, and to raise not only the image of the author, but also that of the organization where he/she works. High-quality technical and software configuration of the repository contributes to: 1) quick indexing of publications in the system Google Scholar; 2) increasing the visibility of publications and increasing their citation rate; 3) advancement in international rankings tracking the specified scientometric indicator; 4) receiving new opportunities in the international educational and scientific community.

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KULYK M. M.

Наукова бібліотека, Національний юридичний університет імені Ярослава Мудрого
(Харків, Україна), e-mail: m.m.kulyk@nlu.edu.ua, ORCID 0000-0001-8439-0971

Виклики відкритої науки: проблеми дослідження метаданих та аналіз наукометричних показників науковців (досвід Наукової бібліотеки Національного юридичного університету імені Ярослава Мудрого)

Мета. Наукова публікація спрямована на аналіз розвитку відкритої науки з огляду на міжнародний національний досвід, а також демонстрацію напрацювань Національного юридичного університету в напрямі просування відкритої науки та управління метаданими, пов'язаними з наукометричними показниками науковців. **Методика.** Для досягнення зазначеної мети використовувалися теоретичні методи наукового дослідження: аналіз літератури та системний підхід. **Результати.** В якості результатів цього наукового дослідження стала систематизація сервісів з наукометрії, які напрацьовані в Науковій бібліотеці Національного юридичного університету імені Ярослава Мудрого для інформування науковців про їх наукометричні показники, що відображають публікаційну активність у двох основних міжнародних наукометричних базах Scopus та Web of Science. **Висновки.** У підсумку зазначено про важливість просування відкритої науки в університетських репозитаріях, які є одними з сервісів, що здійснюють управління метаданими.

Ключові слова: відкрита наука; метанаука; метадані; університетський репозитарій; сервіси з наукометрії; Наукова бібліотека Національного юридичного університету імені Ярослава Мудрого

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DUGUIL A.

University of Perpetual Help System (Laguna, Philippines), e-mail: annaduguil003@gmail.com

PADILLA J.

University of Perpetual Help System (Laguna, Philippines)

RAMBUYON N. C.

University of Perpetual Help System (Laguna, Philippines),

e-mail: novieclairerambuyon@gmail.com

YAP J. M.

University of Perpetual Help System (Laguna, Philippines), Eotvos Lorand University (Budapest, Hungary), e-mail: yap.joseph@uphsl.edu.ph, ORCID 0000-0002-7852-1047

Professional Competencies and Job Performance of Select Academic Librarians in Laguna, Philippines

Objective. Academic libraries formulate missions, visions, goals, and objectives based on the aims of the parent organization. There are issues with how librarianship is introduced, particularly in post-generation Z, when individuals have misconceptions about the functions of librarians. This study examined the level of professional competencies and job performance of selected academic librarians in the 21st Century. **Methods.** Descriptive-correlation method of research was used to provide static pictures of situations as well as to establish relationship between different variables. The respondents of this study are selected academic librarians in region IV-A Philippines. **Results.** Findings revealed that majority of respondents were 31 years old and above and were female. Meanwhile, the majority of the respondents attained their bachelor's degree and had been in the service for 10 years and below. The academic librarians are highly competent in managing information technologies among three domains of professional competencies. The academic librarians achieve very high level of job performance maintaining high quantity of work, fulfilling job duties, consistent for high quality of work, respond to the needs of users, provide accurate resources, demonstrate responsiveness, are able to use technology, and actively participate in forums. The academic librarians aged 31 years old and above, with master's degree and have 11 years and above of service, higher level of professional competencies than their younger counterpart, with bachelor's degree and 10 years and below of service. The higher the respondents' level of professional competencies in all its dimensions, the higher the level of respondent's job performance. **Conclusions.** It can be concluded that the majority of academic librarians in this study were female, 31 years old and above. They had a bachelor's degree and 10 years or less of service. Academic librarians showed high competence in managing information technologies and consistently performed well in their job duties. Older librarians with a master's degree and over 11 years of service displayed higher professional competency and job performance compared to younger librarians with a bachelor's degree and less than 10 years of service. There was a positive correlation between professional competencies and job performance. Overall, academic librarians in this study exhibited strong professional competencies and high job performance.

Keywords: academic librarians; professional competency; job performance; Philippines

Introduction

The Commission on Higher Education (n.d.) and accrediting organizations set requirements for libraries in the Philippines. Standards have also been set by organizations that promote libraries, such as the Philippine Association of Academic and Research Librarians (PAARL). Congruently, the Professional Regulation Commission's (PRC) Board for Librarians (BFL) has produced a set of requirements for academic, public, special, and school libraries (Obille, 2007).

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Members of the Board for Librarians (BFL) and academic librarians agreed that professional competencies should be formalized into model statements based on the four domains of the Special Library Association (SLA) model known as the Competencies for Information Professionals of the Twenty-First Century. The National Competency-Based Standards for Librarians NCBSL was prescribed, adopted and promulgated on June 26, 2015.



Fig. 1. NCBSL Model

Visible abilities such as knowledge and skills may be somewhat technical competencies that are essentially required by the job and drive an individual's job performance (Vathanophas, 2007). Older employees were shown to have statistically significant higher job engagement than younger employees, which was discovered to be higher in absorption and dedication (Douglas & Roberts, 2020). Younger workers perform differently than older employees in a particular job. According to Ugwu (2017), only age, education, and job experience were determined to be significant of librarian's task-based performance.

Problem Statement

Librarians must comprehend the structure, organization, creation, management, dissemination, usage, and preservation of new and existing information resources in all formats. Having developed appropriate knowledge and skills, the librarian becomes an asset to the organization. But, how do we measure the librarians' competencies that reside outside of the National Capital Region? While this is not a comparative study, it explores the current status of professional competencies of librarians situated outside of Manila.

Specifically, it will answer the following sub-problems:

1. What is the profile of respondents in terms of:
 - a. Age
 - b. Sex
 - c. Highest educational attainment; and
 - d. Length of service as a librarian

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2. What is the respondents' level of professional competencies in terms of:
 - a. Managing information sources
 - b. Managing information services
 - c. Managing information technologies; and
 - d. Managing information organization
3. What is the respondents' level of job performance?
4. Is there a significant difference in the respondents' level of professional competencies when grouped according to their profile variables?
5. Is there a significant difference in the respondents' level of job performance when grouped according to their profile variables?
6. Is there a significant relationship between the respondents' level of professional competencies and level of job performance?

Theoretical Framework

This study is anchored on the Self-Determination Theory: How It Explains Motivation by Garraido (2023). The term self-determination was first introduced by Deci and Ryan in their 1985 book *Self-Determination and Intrinsic Motivation in Human Behavior*. People can become self-determined when they fulfill the needs for competence, autonomy, and relatedness.

Table 1

Self-determination Components

Competence	The necessity of having a sense of agency and being the one to take the initiative.
Autonomy	The need to have a sense of choice and be the initiator of an action
Relatedness	The requirement to develop mutual respect and reliance with people

This theory is aligned with the present study as it focuses on the four domains of professional competencies such as: managing information resources, managing information services, managing information tools and technology, and managing information organization that needs to be fulfilled to achieve a high level of competency which may lead to having a high level of job performance. Once competency is achieved, autonomy and relatedness will follow.

Methods

The researchers utilized the descriptive-correlation method of research to answer the specific questions. It describes the respondents' profile in terms of: age; gender; highest

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educational attainment; and length of service as a librarian, the professional competencies, and job performance of academic librarians. The self-made questionnaire was based on the National Competency-Based Standards for Filipino Librarians by the Professional Regulatory Commission (PRC).

The following statistical tools were used in the study: 1.) Frequency and percentage distribution were used to describe the profile of the respondents. 2.) Weighted mean was used to describe the respondents' level of professional competencies and level of job performance. 3.) T-test was used to describe the difference in the respondents' level of professional competencies and level of job performance when grouped according to their age, gender and length of service. 4.) Analysis of Variance (ANOVA) was used to describe the difference in the respondents' level of professional competencies and level of job performance when grouped according to their highest educational attainment. 5.) Pearson r Moment Correlation Coefficient was used to determine the relationship between the respondents' level of professional competencies and level of job performance.

This study involved one hundred twelve (112) out of 157 active academic librarians who are currently working in Laguna. The sample size was calculated using a Raosoft calculator with a 95% confidence level and a 5% margin of error. The researcher used a random sampling method as it covered only 112 selected academic librarians who represent the whole number of the population.

The researchers used Google forms to distribute the floating questionnaire. The data were completed after a month of data collection process, collected, tabulated, and statistically treated under the supervision of the researchers' statistician.

The results from the self-made questionnaire are tallied in an Excel file. The mean was computed to determine the numerical range to interpret the data.

Table 2

Professional Competency's Categorical Response and Verbal Interpretation

Assigned Point	Numerical Range	Categorical Response	Verbal Interpretation
4	3.25-4.00	Strongly Agree	Highly competent
3	2.50-3.24	Agree	Competent
2	1.75-2.49	Disagree	Low competent
1	1.00-1.74	Strongly Disagree	Least competent

This table is the basis for data interpretation after determining the mean of the four domains of professional competencies.

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Table 3

Job Performance's Categorical Response and Verbal Interpretation

Assigned Point	Numerical Range	Categorical Response	Verbal Interpretation
4	3.25-4.00	Strongly Agree	Very High
3	2.50-3.24	Agree	High
2	1.75-2.49	Disagree	Low
1	1.00-1.74	Strongly Disagree	Very Low

This table is the basis for data interpretation after determining the mean of the four domains of job performance.

Review of Related Literature

The development of National Competency-based Standards for Filipino Librarians is regarded as an essential component of the Continuing Professional Development of all registered and licensed librarians (CPD). Competency-based standards will describe the essential qualities necessary of a professional practicing librarianship. Professional competencies must be constructed into model statements that pertain to the four domains of the SLA model, which are categorized as follows: managing information resources; managing information services; managing information tools and technologies; and managing information organization (Verzosa, 2013).

Sutton and Collinge (2018) stated that there are some basic competencies that librarians of electronic resources must possess, including technical proficiency, understanding of the life cycle of e-resources, and the ability to do research and assessment, which relates to the competencies of academic and public electronic librarians.

Traditional skills are a strength of librarians. Yet, librarians should also be knowledgeable about non-traditional competencies. Contemporary LIS practitioners should be proactive; they should be strong communicators, competent, adaptable, and willing to support topics vital to librarianship practice. Indexing, abstracting, categorizing, and cataloging are examples of traditional skills. Non-traditional skills include technology, educational, and communication talents. It outlines the characteristics that a librarian in today's LIS business should have (Santos, 2018).

The study by Friday and Onuh (2022), found that librarians gained 21st-century librarianship abilities such as emailing, word processing, internet browsing, digital literacy, and social networking. Yet, Anthonia et al. (2021) discovered that information professionals such as librarians have a significant need for interpersonal, leadership, and information technology abilities in 21st-century libraries. Furthermore, Adomi and Solomon (2019) discovered that the majority of librarians from chosen colleges had a high level of customer service competency in terms of information and communication technologies, as well as professional and interpersonal competency.

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According to the study by Mandal and Dasgupta (2019), librarians can offer better service to the material available online by employing their search abilities. Participating in training programs, seminars and conferences and even other forms of continuing education is the key to developing their ever-changing professional ability. In light of the continually changing nature of their professions, the study shows that younger libraries are already professionals in current technologies, retaining their professional competence. Competence is an ever-evolving issue since it must adapt to societal changes. While working on information, technology, and services, library and information professionals have the same societal developments to contend with. Also, knowledge and skill should be relevant to the demands of the institution to be serviced (Alenzuela, Cantel, & Peleña, 2020).

Table 4

Profile of Respondents

FINDINGS/RESULTS

Profile Variables	Frequency	Percentage
Age		
30 years old and below	55	49.1
31 years old and above	57	50.9
Gender		
Male	28	25.0
Female	84	75.0
Highest Educational Attainment		
Bachelor's Degree	79	70.5
Master's Degree	31	27.7
Doctoral Degree	2	1.8
Length of Service		
10 years and below	75	67.0
11 years and above	37	33.0
N=112		

This table shows the frequency and percentage of the respondents according to their profile. The majority of the respondents were 31 years old and above. There were more females than males. The majority of the respondents attained their bachelor's degree. Meanwhile, the 10 years and below of service have the most number of respondents than 11 years and above.

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Table 5

Respondents' Level of Professional Competencies: Managing Information Sources

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. I manage the process by which library resources are selected and acquired.	3.55	Highly Competent	4
2. I understand the general structure, relationships and relative importance of library catalog systems and software (Classification Systems, e.g., LC, Dewey; subject headings List, e.g., LCSH, AACR2; RDA).	3.84	Highly Competent	1
3. I understand the acquisition and collection development processes and policies of the library.	3.82	Highly Competent	2
4. I use common social networking and online collaboration tools (e.g., blogs, podcasts, instant messaging tools, photo-sharing tools, web conferencing programs).	3.06	Competent	5
5. I understand preservation and conservation issues, including requirements for archival preservation and proper handling of materials.	3.62	Highly Competent	3
Overall Weighted Mean	3.59	Highly Competent	

As presented in Table 5, an average weighted mean of 3.59 showed that the respondents are highly competent in understanding the general structure, relationships, and relative importance of library catalog systems and software; understanding the acquisition and collection development processes and policies of the library; understanding preservation and conservation issues, including requirements for archival preservation and proper handling of materials; and managing the process by which the library resources are selected and acquired. But they are competent when using common social networking and online collaboration tools.

Table 6

Respondents' Level of Professional Competencies: Managing Information Services

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. I understand and perform the basic operations of the circulation function.	3.91	Highly Competent	1

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2. I explain and perform intra and interlibrary loan procedures, document delivery, resources sharing, reserves, and other information retrieval options.	3.42	Highly Competent	3
3. I understand the essential characteristics of reference service in order to assist, advice and instruct users in the use of primary resources.	3.66	Highly Competent	2
4. I develop and implement training programs to educate the library users on the use of the library and its resources.	3.29	Highly Competent	4
5. I develop, design, implement and asses the library's information literacy program.	3.25	Highly Competent	5
Overall Weighted Mean	3.51	Highly Competent	

As presented in Table 6, an average weighted mean of 3.51 showed that the respondents are highly competent in managing information services: performing the basic operations of the circulation function; understanding the essential characteristics of reference services to assist, advice, and instruct users in the use of primary resources and; performing intra and interlibrary loan procedures, document delivery, resource sharing, reserves, and other information retrieval options; developing and implementing programs; and developing, designing, implementing, and assessing the library's information literacy program.

Table 7

Respondents' Level of Professional Competencies: Managing Information Technologies

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. I perform basic functions of e-mail applications.	3.95	Highly Competent	1
2. I perform basic calendar and task management operations/applications.	3.88	Highly Competent	2
3. I understand and use basic computer hardware and peripherals.	3.60	Highly Competent	5
4. I understand common security protocols related to internet use.	3.66	Highly Competent	4
5. I understand and perform basic operating system functions (log on/off, launch programs from the desktop, use multiple windows, delete files).	3.75	Highly Competent	3

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As presented in Table 7, an average weighted mean of 3.77 showed that the respondents are highly competent in performing basic functions of e-mail applications; performing basic calendar and task management operations/applications and; performing basic operating system functions (log on/off, launches programs from desktop, uses multiple windows, delete files).

Table 8

Respondents' Level of Professional Competencies: Managing Information Organization

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. I envision strategic directions of the library in support of the programs of the institutions to which it is attached.	3.47	Highly Competent	2
2. I establish effective financial management processes and services, using sound business and financial judgement.	3.05	Competent	5
3. I employ sound project management principles and procedures in the planning and implementation of projects, programs and research.	3.13	Competent	4
4. I build effective and harmonious work relationships and personal growth of the people working within the organization.	3.62	Highly Competent	1

As presented in Table 8, an average weighted mean of 3.32 showed that the respondents are highly competent in building effective and harmonious work relationships and personal growth of the people working within the organization; envisioning strategic directions of the library in support of the programs of the institutions and; partnerships, within and outside the organization, to optimize use of library resources, promote library cooperation initiatives and ensure conformity with regulatory standards, laws and other policies affecting libraries.

Table 9

Summary Table of the Respondents' Level of Professional Competencies: Managing Information Sources, Managing Information Services, Managing Information Technologies, and Managing Information Organization

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Managing information sources	3.58	Highly Competent	2
2. Managing information services	3.51	Highly Competent	3
3. Managing information technologies	3.77	Highly Competent	1

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4. Managing information organization	3.32	Highly Competent	4
Overall Weighted Mean	3.55	Highly Competent	

As presented in Table 9, an average weighted mean of 3.55 showed that the respondents are highly competent in managing information technologies. This indicated that regardless of their age, highest educational attainment, and length of service, academic librarians are competent enough to perform their duties effectively.

Table 10

Respondents' Level of Job Performance

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. I maintain a high quantity of work output.	3.91	Very High	3.5
2. I take responsibility for fulfilling job duties.	3.91	Very High	3.5
3. I am demonstrating consistently high-quality work.	3.92	Very High	2
4. I quickly respond to the needs of internal and external clients.	3.72	Very High	5
5. I provide an accurate resource based on what patrons are looking for.	3.94	Very High	1
6. I demonstrate a responsiveness to the needs of internal and external clients.	3.65	Very High	7
7. I am able to use technology to access information.	3.71	Very High	6
8. I am able to create & explain the library's IT policies.	3.14	High	10
9. I know how to develop and manage the library's content management system.	3.27	High	9
10. I actively participate in or cooperate with the forums in my organization towards the development of the library.	3.54	Very High	8
Overall Weighted Mean	3.67	Very High	

As shown in Table 10, academic librarians rated themselves in job performance as "Very high," with an average weighted mean of 3.67. It appeared that they were very high in providing an accurate resource based on what patrons are looking for (Rank 1) with a weighted mean of 3.94; in demonstrating consistently high-quality work (Rank 2) with a weighted mean of 3.92; they also rated themselves as very high with the same weighted mean of 3.91 in maintaining a high quantity of work output and taking responsibility for fulfilling job duties (Rank 3.5). Likewise, they were

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very high in quick response to the needs of internal and external clients (Rank 5) with a weighted mean of 3.72; in using technology to access information (Rank 6) with a weighted mean of 3.71; same as in demonstrating a responsiveness to the needs of internal and external clients (Rank 7) with a weighted mean of 3.65; and in actively participating in or cooperate with the forums in organization towards the development of the library (Rank 8) with a weighted mean of 3.54; they also had high level in developing and managing the library's content management system (Rank 9) with a weighted mean of 3.27; and creating and explaining the library's IT policies (Rank 10) with a weighted mean of 3.14.

Table 11

Difference in the Respondents' Level of Professional Competencies When Grouped According to their Profile Variables

Profile Variables		Mean	Inferential Statistics	p-value	Decision	Interpretation
Age	30 years old and below	3.38	t=-7.634	.000*	H ₀ rejected	Significant
	31 years old and above	3.70				
Gender	Male	3.49	t=-1.264	.213	H ₀ not rejected	Not Significant
	Female	3.56				
Highest Educational Attainment	Bachelor's Degree	3.47	F=13.838	.000*	H ₀ rejected	Significant
	Master's Degree	3.72				
	Doctoral Degree	3.87				
Length of service	10 years and below	3.44	t=-8.083	.000*	H ₀ rejected	Significant
	11 years and above	3.75				

As presented in Table 11, for the difference in the respondents' level of professional competencies when grouped according to their age (t=-7.634), highest educational attainment (F=13.838), and length of service (t=-8.083), the obtained p-values were all .000, respectively,

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which were all lower than the test of significance at .05, suggesting that there is enough statistical evidence to reject the null hypothesis which implies a significant difference. This means that those respondents aged 31 years old and above, with a master's degree and 11 years and above of service have a higher level of professional competencies than their younger counterparts, with a bachelor's degree and 10 years and below of service. Meanwhile, there is no significant difference in professional competencies according to their gender ($t=1.264$) which shows that no matter if you are a male or female, you can attain a high level of professional competencies as an academic librarian.

Table 12

Difference in the Respondents' Level of Job Performance When Grouped According to their Profile Variables

Profile Variables		Mean	Inferential Statistics	p-value	Decision	Interpretation
Age	30 years old and below	3.38	$t=-7.634$	.000*	H_0 rejected	Significant
	31 years old and above	3.70				
Gender	Male	3.65	$t=-.546$	.588	H_0 not rejected	Not Significant
	Female	3.68				
Highest Educational Attainment	Bachelor's Degree	3.63	$F=4.738$	.011*	H_0 rejected	Significant
	Master's Degree	3.78				
	Doctoral Degree	3.65				
Length of service	10 years and below	3.62	$t=-4.198$	.000*	H_0 rejected	Significant

As presented in Table 12, using the T-test, the difference in the respondents' level of job performance when grouped according to their age is $t=-7.634$ and length of service $t=-4.198$. Using Analysis of Variance (ANOVA), the difference in the respondents' level of job performance according to their highest educational attainment is $F=4.738$. The obtained p-values were .000, .011, and .000, respectively, which were all lower than the test of significance at .05, suggesting that there is enough statistical evidence to reject the null hypothesis which implies a significant difference.

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Table 13

Relationship between the Respondents' Level of Professional Competencies and Level of Job Performance

Job Performance	Inferential Statistics	p-value	Decision	Interpretation
Managing information sources	r=.581 (moderate correlation)	.000*	Null Hypothesis Rejected	Significant
Managing information services	r=.536 (moderate correlation)	.000*	Null Hypothesis Rejected	Significant
Managing information technologies	r=.661 (moderate correlation)	.000*	Null Hypothesis Rejected	Significant
Managing information organization	r=.538 (moderate correlation)	.000*	Null Hypothesis Rejected	Significant
*Significant @ 0.01				

As presented in Table 13, the relationship between the respondents' level of performance and their level of professional competencies in terms of managing information sources (r=.581), managing information services (r=.536), managing information technologies (r=.661) and managing information organization (r=.538) show that all the obtained r-values indicated moderate correlation. Meanwhile, the p-values obtained were all .000, which was lower than the test of significance at .01 implying that there is enough statistical evidence to reject the null hypothesis, showing a significant relationship between the variables. This means that the higher the respondents' level of professional competencies in all its dimensions, the higher the level of respondents' job performance.

Results and Discussion

Self-determination is the idea that people are driven to engage in activities that need the fulfillment of competence, autonomy, and relatedness to achieve them. Having highly competent academic librarians can identify that they fulfill what is needed, which leads them to attain a high level of job performance.

It is noticeable that academic librarians have an advanced grasp of information technology and tools as they all recorded a high level of competency. Academic librarians showed self-determination to achieve competency, autonomy, and relatedness. Generally, academic librarians

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are highly competent in the four areas of professional competencies: managing information sources, managing information services, managing information technologies, and managing information organization. These competencies helped them to attain a highly competent job performance.

The findings revealed a remarkable level of proficiency among respondents in various aspects of their roles, particularly in the management of information technology, which garnered the highest average weighted mean of 3.77, securing the top rank. Following closely was the adept handling of information sources, with an average weighted mean of 3.58, earning the second position. Concurrently, the management of information services exhibited a commendable performance, achieving an average weighted mean of 3.51 and securing the third rank. Meanwhile, the management of information organization claimed the fourth position with an average weighted mean of 3.32.

An insightful observation derived from the results indicates that respondents aged 31 years old and above, possessing master's degrees, and boasting 11 years or more of service, demonstrated elevated levels of professional competencies compared to their younger counterparts. This implies that experience and advanced education play pivotal roles in enhancing professional capabilities within the realm of academic librarianship.

Notably, gender proved to be a negligible factor, as both males and females exhibited the potential to attain a high level of professional competencies as academic librarians. The data on professional competence, irrespective of age, educational background, and length of service, underscored the notion that academic librarians excel in their duties effectively. These results imply a universality of competence among academic librarians, emphasizing the inclusive nature of professional success in this field.

The select academic librarians meet the library professional's standards and competencies, which they are *highly competent* in terms of managing information tools and technology with an average of 3.77. This finding corroborates the study by Oza and Mehta (2018) which states that ICT skills and competencies are essential for corporate librarians and LIS professionals. Corporate librarians may perform a variety of roles, such as knowledge engineer, knowledge creator, information architect, web designer, database and network creator, online publisher, and decision support specialist.

Conclusions

Knowledge and skills have an impact on how others perceive you as a professional. Select academic librarians are determined as highly competent which serves as one step toward introducing this type of profession, which will lead to fewer misconceptions about the role of librarians. As they are attaining a high level of competency and job performance, it is concluded that they are ready for the job as professionals. In this regard, taking part in training courses, conferences, seminars, and other forms of ongoing education is essential to helping them build their ever-growing professional potential. For the future researcher, it is recommended to determine the level of competency and job performance of other types of librarians (public librarian, special librarian, school librarian).

Majority of them were 31 years old and above and were female. Meanwhile, the majority of the respondents attained their bachelor's degree and had been in the service for 10 years and below.

The academic librarians are highly competent in managing information technologies among three domains of professional competencies. The academic librarians are achieving a very

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high level of job performance, maintaining high quantity of work, fulfilling job duties, consistent for high quality of work, responding to the needs of users, providing accurate resources, demonstrating responsiveness, able to use technology, and actively participate in forums. The academic librarians aged 31 years old and above, with master's degree and have 11 years and above of service have higher level of professional competencies than their younger counterparts, with bachelor's degree and 10 years and below of service. The academic librarians aged 31 years old and above, with master's degree and have 11 years and above of service have higher level of job performance than their younger counterparts, with bachelor's degree and 10 years and below of service. The higher the respondents' level of professional competencies in all its dimensions, the higher the level of respondents' job performance.

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DUGUIL A.

Університет системи безперервної допомоги (Лагуна, Філіппіни),
e-mail: annaduguil003@gmail.com

PADILLA J.

Університет системи безперервної допомоги (Лагуна, Філіппіни)

RAMBUYON N. C.

Університет системи безперервної допомоги (Лагуна, Філіппіни),
e-mail: novieclairerambuyon@gmail.com

YAP J. M.

Університет системи безперервної допомоги (Лагуна, Філіппіни),
Університет імені Лоранда Етвеша (Будапешт, Угорщина);
e-mail: yap.joseph@uphsl.edu.ph, ORCID 0000-0002-7852-1047

Професійні компетентності та ефективність роботи окремих академічних бібліотекарів у Лагуні, Філіппіни

Мета. Академічні бібліотеки формують місії, бачення, цілі та завдання на основі цілей материнської організації. Існують проблеми з тим, як впроваджувати бібліотечну справу, особливо серед представників покоління Z, коли люди мають хибні уявлення про функції бібліотекарів. У цьому дослідженні розглянуто рівень професійної компетентності та ефективності роботи окремих академічних бібліотекарів у 21 столітті. **Методика.** Описово-кореляційний метод дослідження для створення статичної картини ситуацій, а також для встановлення взаємозв'язку між різними змінними. Респондентами цього дослідження були обрані академічні бібліотекарі з регіону IV-A Філіппін. **Результати.** Результати опитування показали, що більшість респондентів були у віці 31 рік і старше і були жінками. При цьому більшість респондентів отримали ступінь бакалавра і мають стаж роботи 10 років і менше. Серед трьох сфер професійної компетентності академічні бібліотекарі мають високу компетентність в управлінні інформаційними технологіями. Академічні бібліотекарі досягають дуже високого рівня виконання роботи, підтримуючи високий обсяг роботи, виконуючи посадові обов'язки, послідовно забезпечуючи високу якість роботи, реагуючи на потреби користувачів, надаючи точні ресурси, демонструючи чуйність, вміючи користуватися технологіями та беручи активну участь у форумах. Академічні бібліотекарі у віці 31 рік і старші, які мають ступінь магістра і стаж роботи 11 років і більше, мають вищий рівень професійних компетентностей, ніж їхні молодші колеги, які мають ступінь бакалавра і стаж роботи 10 років і менше. Академічні бібліотекарі віком 31 рік і старші, які мають ступінь магістра і стаж роботи 11 років і більше, мають вищий рівень виконання роботи, ніж їхні молодші колеги, які мають ступінь бакалавра і стаж роботи 10 років і менше. Чим вищий рівень професійних компетентностей респондентів за всіма вимірами, тим вищий рівень виконання роботи респондентами. **Висновки.** Можна зробити висновок, що більшість академічних бібліотекарів у цьому дослідженні були жінками, віком від 31 року. Вони мали ступінь бакалавра і стаж роботи не більше 10 років. Академічні бібліотекарі продемонстрували високу компетентність в управлінні інформаційними технологіями і стабільно

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добре виконували свої посадові обов'язки. Бібліотекарі старшого віку, які мають ступінь магістра і стаж роботи понад 11 років, продемонстрували вищий рівень професійної компетентності та виконання посадових обов'язків порівняно з молодими бібліотекарями, які мають ступінь бакалавра і стаж роботи менше 10 років. Існує позитивна кореляція між професійною компетентністю та ефективністю роботи. Загалом, академічні бібліотекарі в цьому дослідженні продемонстрували сильні професійні компетентності та високу ефективність роботи.

Ключові слова: академічні бібліотекарі; професійна компетентність; ефективність роботи; Філіппіни

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YAROSHENKO T. O.

National University of Kyiv Mohyla Academy (Kyiv, Ukraine),

e-mail: yaroshenko@ukma.edu.ua, ORCID 0000-0002-2985-2333

IAROSHENKO O. I.

National University of Kyiv Mohyla Academy (Kyiv, Ukraine),

e-mail: yaroshenkooi@ukma.edu.ua, ORCID 0000-0002-4716-5705

Artificial Intelligence (AI) for Research Lifecycle: Challenges and Opportunities

Objective. This article aims to review the progress of AI technologies concerning their potential impact on academia, research processes, scientific communication, and libraries. **Methods.** AI tools for research lifecycle and their potential impact on academia and libraries were identified from various sources, mostly from the most influential recent scientific publications. **Results.** AI has become a driving force nowadays, creating both opportunities and challenges. Transformative AI-powered tools, exemplified by advanced models like ChatGPT, Llama-2, Google Bard, Microsoft Bing, and Jasper Chat, among others, find versatile utility across a broad spectrum of contexts, extending their impact to research process and publishing, as well as to librarianship. The enthusiastic embrace of AI in research is tempered by a pervasive concern over the potential for data fabrication, which can significantly compromise ethical standards and academic integrity. There is an urgent need to understand corresponding opportunities, challenges, and dangers. Some aspects of the use of AI tools for different stages of the research lifecycle are considered, and the main advantages and risks are analyzed. **Conclusions.** AI has the potential to drive innovation and progress in a wide range of fields and possesses significant potential to propel academia and librarianship into both exhilarating and challenging new frontiers. While AI-powered tools represent major advancements and potential to significantly impact academia, scholarly research, publishing, and university libraries. Privacy and bias are just two examples of the ethical considerations that need to be made.

Keywords: artificial intelligence; AI; LLM; ChatGPT; Llama-2; academic libraries; scientific communication; scholarly publishing; research lifecycle

Introduction

AI technology is already commonplace in everyday life and is no longer the only purview of futurologists. With the emergence of Artificial Intelligence technologies, services, and applications, there are many discussions about the inevitable changes in many areas, including AI's impact on research and scholarly communication as well as on librarianship. The rapid pace of AI development and adoption raises crucial questions about intellectual freedom, equity and privacy, automation, the evolution of necessary digital literacy skills, relevant intellectual property policy frameworks, and more. Potential academic integrity violations, specifically potential bias, data fabrication and falsification, harm to critical thinking, etc., are the main concerns associated with employing AI. However, technological advancement is unavoidable, thus it is no longer viable to ignore or forbid AI services and applications. Scholars already employ them for a variety of research-related tasks, including searching, writing, proofreading, or translating texts, identifying and summarizing sources, data analytics, data visualization, data and text mining, coding, etc. Undoubtedly, over time, even more advanced tools will emerge, specifically designed for the needs of scientists. We undertook this brief study to reflect on this quickly evolving topic, primarily using the most pertinent and citeable publications. Over the last year, much has been written about Generative chatbots (especially *ChatGPT*) and their potential impact across the spectrum of research contexts. A Google Scholar search for the single phrase "ChatGPT" as of the

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date of this study (September 2023) returns over 46 600 papers, Dimensions – 17062, and Semantic Scholar – 89 400.

Furthermore, this number will probably increase too quickly. The majority of the debate is on moral dilemmas, specific tasks, technological specifics, and the application of AI in business and education. Scholars and librarians also need to understand the opportunities and challenges of AI use for the research lifecycle and analyze the main advantages and risks.

This article **aims** to review the progress of AI technologies concerning their potential impact on academia and libraries, research lifecycle, and scientific communication.

Materials and Methods

Analysis of scholarly articles within the 2017–2023 timeframe served as the basis for the research. AI landscape is dynamic and continuously evolving. AI services and applications were identified from various sources, mostly from most influential and highly cited books and articles in the field of AI tools for research and librarianship (Alto, 2023; Currie, 2023; Dashti, Londono, Ghasemi, & Moghaddasi, 2023; Dwivedi et al., 2021, 2023; Floridi & Chiriatti, 2020; Gasparini & Kautonen, 2022; Hervieux, & Wheatley, 2022; Hill-Yardin, Hutchinson, Laycock, & Spencer, 2023; Leslie, 2023; Lund & Wang, 2023; Manohar & Prasad, 2023; Vaswani et al., 2017; Yan et al., 2023), and was expanded through web searches and tools developed within key AI communities, such as the Open AI, Google AI, Microsoft Research, Stanford AI Lab, MIT Computer Science and Artificial Intelligence Laboratory, ICML (International Conference on Machine Learning), AAAI (Association for the Advancement of Artificial Intelligence), relevant IFLA statements etc. Additionally, we looked through the specialized publications (Journal of Artificial Intelligence Research (JAIR), Artificial Intelligence Journal (AIJ), Machine Learning Journal, IEEE Transactions on Artificial Intelligence, AI Communications, LIBER Quarterly, etc).

Results and Discussion

It is no longer a pipe dream to have a computer system that can reason and think like humans, as well as learn and develop. Numerous programs or chatbots that assist people in finding information online, calling a cab, conducting financial transactions, booking tickets, and scheduling doctor appointments are just a few examples of how AI technologies have already and seemingly invisibly permeated our lives. In the last decades, examples of AI also include virtual voice assistants such as *SIRI* or *Amazon Alexa*, face recognition and *Google Maps*, targeted advertising from sales and service platforms, etc. It would be possible to ignore the further development of AI, till AI has taken another leap forward in the release of the Large Language Model (LLM) software when the *ChatGPT-3* (November 2022), and *ChatGPT-4* (April 2023) – Generative Pre-trained Transformer chatbot – was released to the world by Open AI (US’ research organization founded in 2015 by Elon Musk and Sam Altman, with the mission “to ensure that Artificial General Intelligence (AGI) benefits all of humanity” (openai.com), which caused a huge response in society. Only two months after the *ChatGPT-3* release, the number of active users increased by 100 million, which became an all-time record among custom programs (Facebook needs 4.5 years for such a result). Since February 18, 2023, *ChatGPT* has become available for users from Ukraine (the program is inoperable in the parts of Ukraine that Russia has temporarily annexed, as well as in Russia itself, and Iran, Cuba, North Korea, Syria, and Sudan). *ChatGPT-4* was launched in April 2023, and Meta and Microsoft announced the *Llama-2* in July 2023. Other generative AI applications are being successfully developed and “learned”: *Jasper Chat*, *Google*

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Bard, *Microsoft Bing*, *SciFact*, *Consensus*, etc. *ChatGPT* is not the first sophisticated AI tool to change research practices. *Semantic Scholar* (www.semanticscholar.org) has provided free, AI-driven search and discovery tools since 2015. The most extensive platform for linked data is *Dimensions.ai* (app.dimensions.ai), which includes everything from patents and policy documents to grants, publications, databases, and clinical trials. *Grammarly* (www.grammarly.com) is an example of a popular AI tool (was “born” in Ukraine) used to improve academic writing. *rTutor.ai* (www.rtutor.ai) is an AI chatbot that can generate R code for statistical analysis. *Research Rabbit* (www.researchrabbit.ai) is an AI tool used to produce literature reviews. Etc.

Crossing the Rubicon? It became clear that this type of artificial intelligence (AI) technology would have huge implications for how researchers work. The creation of patents, the publication of scientific articles featuring generative AI as a contributing author (including *ChatGPT*), and other developments have alarmed the academic community. The editorial boards of scholarly journals, publishing houses, and universities are currently working tirelessly to develop appropriate policies for the usage of AI applications. The misleading fact that *ChatGPT* can produce – including the ability to “hallucinate” or conjure scientific terminology, phrases, and even quotes – has received both a lot of praise and a lot of criticism. AI usage as instruments of misinformation, false news, and malevolent content was criticized as well as the ethical and morally upright applications that might be made of them.

What is AI? The term AI is often used as an umbrella term for multiple technologies: business analytics and data science; natural language processing; speech recognition and text-to-speech; machine learning, deep learning, and neural networks; machine reasoning, decision making, and algorithms; computer vision; and robots and sensors (Williams & Lowendahl, 2018). Russell S. J., Norvig P., Popineau F., Miclet L., and Cadet C. (2021) defined the term AI to describe systems that mimic cognitive functions generally associated with human attributes such as learning, speech, and problem-solving. A more detailed and elaborate characterization was presented by Haenlein M. and Kaplan A. (2019), who describe AI in the context of its ability to independently interpret and learn from external data to achieve specific outcomes via flexible adaptation. We can even date the start of research on generative AI to the 1960s, when Joseph Weizenbaum developed the chatbot *ELIZA*, one of the first examples of an NLP (Natural language processing) system. Then, by the 2000s and 2010s, the advancement in computational capabilities, together with the huge amount of available data for training, yielded the possibility of making it more practical and available to the general public, with a consequent boost in research. Another great milestone was achieved when a new deep learning architecture, called *Transformer*, was introduced by the Google team in a paper, published in 2017, which has been cited more than 60,000 times by now – “*Attention Is All You Need*” (Vaswani et al., 2017). It was revolutionary in the field of language generation. Transformers were indeed the foundations for LLM called *Bidirectional Encoder Representations from Transformers (BERT)*, introduced by Google in 2018. Transformers are also the foundations of all the Generative Pre-Trained (GPT) models introduced by OpenAI, including *GPT-3* in November 2022 and *GPT-4* in April 2023, a similar model behind *ChatGPT*. As a result, the years 2022 and 2023 have been termed the “years of generative AI” since they saw the widespread use of sophisticated AI tools and models.

One of the greatest applications of generative AI is its capability to generate human-like text, making it useful for a variety of natural language processing tasks such as language translation, summarization, and question-answering. Indeed, generative AI algorithms can be used to generate new text, such as articles, can be trained on large amounts of text data and then used to generate new, coherent, and grammatically correct text in different languages (both in terms of

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input and output), as well as extracting relevant features from text such as keywords, topics, or full summaries (Alto, 2023).

Researchers predict that AI will outperform humans in many activities in the next ten years, such as translating languages (by 2024), writing high-school essays (by 2026), driving a truck (by 2027), working in retail (by 2031), and even authoring a best-selling book (by 2049) or, moreover, practicing surgery (by 2053). According to research, there is a 50% possibility that AI will outperform humans in all tasks in 45 years and that all human employment will be automated in 120 years. (Grace, Salvatier, Dafoe, Zhang, & Evans, 2018).

What current research assistant roles may artificial intelligence (AI) technologies and applications fill for scientists? Let's list the most popular applications currently (the list is by no means exhaustive, and new ones are added quite frequently) along with the potential regions for their use.

1. Defining the research question, searching for sources, summarizing reviews, extracting data, synthesizing literature, generating texts (as well as proofreading, translating, copywriting, converting audio to text, etc.) – *ChatGPT-3, ChatGPT-4, Llama-2, Jasper Chat, Google Bard, Microsoft Bing, WordAI, CopyAI, Wordtune, Grammarly, QuillBot, Semantic Scholar, SciSpace*, etc.

2. Reference managers (formatting a bibliography, working with the text) – *Research Rabbit, Semantic Reader, ChatPDF*, etc.

3. Creating and editing images, video, etc. – *ChatGPT-4, Dall-E, Synthesis.OI, Midjourney, Descript*, etc.

4. Analysis of hypotheses and concepts – *SciFact, Consensus*, etc.

5. Providing support for the design and framework of the experiment (determining study design, identifying outcome measures), data analysis (incl. data mining and text mining) – *ChatGPT, Llama-2, Jasper Chat, Google Bard, Microsoft Bing*.

6. Generating a presentation of the study (for conference report or poster etc.) – *Canva AI, Designs.ai, DesignerBot, Appy Pie's Research Poster Maker*, etc.

We narrowed our focus to a select few tasks where AI tools can help scholars. Many other activities within the domain of research could benefit from the support of AI: data collection, study participant recruitment, research networking, public engagement, and many others. Scholars who use AI tools in the research lifecycle can benefit from its versatility and time-saving features, ultimately leading to more impactful research outcomes. But it's crucial to remember that AI tools and applications are simply that: tools, and should be used in conjunction with expert knowledge and judgment. As with any research project, careful consideration of the research question and study design is necessary to ensure the validity and reliability of the results. (van Dis, Bollen, Zuidema, van Rooij, & Bockting, 2023).

University Libraries have always played a crucial role in the research ecosystem, often integrated into the research process not only as knowledge hubs but also in digital scholarship, research data curation, digital humanities, and more. Librarians' institutional expertise in knowledge management can be valuable for the challenges associated with the AI-oriented future of education and science. AI and ML could have the potential to add new dimensions and approaches to knowledge management processes in libraries – particularly knowledge organization, storage, and integration (IFLA, 2020). Naturally, libraries must create new tools and services based on AI technologies for a variety of library functions, including reference and information services, cataloging and metadata creation, content creation (e.g., to produce summaries, abstracts, and other types of content that can be used to improve access to library resources), and search and discovery (e.g., by understanding the nuances of natural language

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queries and providing more relevant results). Libraries can provide access to a wide range of AI-based tools and services to assist scholars in effectively leveraging AI technology in their research or even offer AI-related programming and services. The traditional role of libraries as trusted partners in research communities provides libraries with an opportunity and responsibility to educate their users on AI-related topics. Libraries can educate users about AI, and help them thrive in a society that uses AI.

We fully support IFLA's thesis on the role of libraries in implementing AI applications for researchers: *"Libraries can support high-quality, ethical AI research. Many current ethical and inclusivity concerns linked to AI research and applications stem from incomplete, incorrect, or biased training data ('garbage in, garbage out'). Trained librarians can lend their expertise in data storage and licensing, data quality assessment, and safe and ethical information storage to help researchers address some of the concerns around data. Libraries can also support ethical AI research and development by their procurement choices: purchasing AI technologies, which abide by ethical standards of privacy and inclusivity. This would both reaffirm the trust of users in libraries, and send a message to the AI research field by increasing the demand for ethical AI technologies"* (IFLA, 2020). However, libraries should be mindful and employ AI tools responsibly and prudently. Libraries need to contemplate suitable measures to mitigate any potential risks associated with AI use.

Let's name the main disadvantages of AI applications for research and librarianship.

The most significant drawback of *ChatGPT* et al. applications is that the information they generate is not always accurate or unbiased. The biases in the training data may be reflected in the model's responses, which could lead to unfair or erroneous results. AI tools may offer incorrect links or even cite references to fictional studies or articles that do not exist (so-called fabrication, this flaw of chat is often called "hallucination" or "delusion"). For the academic environment, this is particularly dangerous given the risks of presenting incorrect data or non-existent results in one's research. Therefore, it is extremely important to always review and edit texts, and check citations and references to ensure their accuracy, reliability, and completeness.

Lack of context. *ChatGPT* and other AI chatbots may not be able to fully understand the context and nuances of scientific text, resulting in the creation of texts that might not always be the most appropriate or acceptable. In addition, *ChatGPT-3*, for example, "learned" on datasets up to 2021 (as of 2023), so it may not have modern context.

Intellectual property. AI chatbots can generate text that may be copyright-protected.

Security. AI chatbots can generate compassionate information, such as personal data, financial data, and even medical data, which could be a security risk.

Language. The accuracy and dependability of responses in other languages may be constrained by the fact that AI chatbots "learned" mostly from English-language sources. Because the tools are evolving quickly, their capabilities will continue to grow. The ethical guidelines for universities and journals also need to evolve along with the application of generative AI. Some journals have already guided their authors. For example, in response to authors listing *ChatGPT* as a contributing author, Nature has developed guiding principles to help authors use and attribute generative AI text: AI does not qualify for authorship but the use of the technology should be documented in the methods section. (Dwivedi et al., 2023).

Conclusions

The use of AI tools and applications does not yet come to research without significant flaws. Biases, outdated training data, and lack of transparency and credibility are major concerns.

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The generated text (data) must be reviewed and edited to avoid plagiarism, fabrication, and falsification. It is now critical that the research community is aware of how and where these technologies can be used, and the main risks and dangers of bias or inaccuracy. AI is not responsible for the content of the research. If authors use AI technologies in the writing process, it is only to improve the readability and language of the work, and not to replace key tasks of the researcher, such as generating scientific opinion, analyzing and interpreting data, or generating scientific conclusions. The application of AI technologies must be under human supervision and control, and authors must carefully review and edit the output. It is critical also to identify and implement policies to protect against the misuse and abuse of generative AI.

But since we think that AI will be used eventually, we can't ignore it or forbid it. As artificial intelligence (AI) advances, we will soon see even more sophisticated tools made specifically for academia and scholars who need to know how to use them wisely for particular research practices, research process optimization, and dissemination of research results. AI can significantly advance librarianship and academia into exciting and demanding fields. However, it is imperative to discuss the ethical and responsible application of this technology. Instead of misusing it or allowing it to be misused academics and librarians should work together to use this technology to improve their jobs in the hopes of producing new scholarly knowledge and training future experts.

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YAROSHENKO T. O.

Національний університет «Києво-Могилянська академія» (Київ, Україна),

e-mail: yaroshenko@ukma.edu.ua, ORCID 0000-0002-2985-2333

IAROSHENKO O. I.

Національний університет «Києво-Могилянська академія», (Київ, Україна),

e-mail: yaroshenkoii@ukma.edu.ua, ORCID 0000-0002-4716-5705

Штучний інтелект (ШІ) для життєвого циклу дослідження: виклики та можливості

Мета. Стаття має на меті короткий огляд технологій ШІ з огляду на їхній вплив на наукову діяльність та наукову комунікацію. **Методика.** Інструменти та сервіси ШІ для життєвого циклу дослідження були визначені з різних джерел, переважно з найбільш впливових наукових публікацій за кілька останніх років. **Результати.** ШІ нині став рушійною силою, створивши як можливості, так і виклики чи проблеми. Трансформаційні інструменти ШІ, такі, наприклад, як ChatGPT, Llama-2, Google Bard, Microsoft Bing, Jasper Chat та ін., знаходять все більшу популярність, поширюючи свій вплив навіть на сферу наукових досліджень, зокрема для підготовки статей та інших типів наукових рукописів. Незважаючи на численні дебати навколо ШІ, очевидно, що їх інтеграція набула значного поширення в академічному середовищі, впливаючи як на практику проведення досліджень, так і на публікацію результатів. Водночас, захоплене сприйняття можливостей ШІ поєднується із занепокоєнням щодо можливих помилок чи фабрикації даних, що може суттєво поставити під загрозу етичні стандарти та академічну доброчесність. Існує нагальна потреба зрозуміти відповідні можливості, виклики та небезпеки. Розглянуто деякі аспекти використання інструментів ШІ на різних етапах життєвого циклу дослідження, проаналізовано основні переваги та ризики. **Висновки.** ШІ має потенціал для стимулювання інновацій і прогресу в багатьох галузях, включаючи наукові дослідження, тому потребує етичного та відповідального використання.

Ключові слова: штучний інтелект; ШІ; велика мовна модель; ChatGPT; Llama-2; наукові бібліотеки; наукова комунікація; наукове видавництво; життєвий цикл наукового дослідження

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ZHARINOVA A. H.

State Scientific and Technical Library of Ukraine (Kyiv, Ukraine),

e-mail: zh.alla0812@gmail.com, ORCID 0000-0003-3959-1074

ZHARINOV S. S.

Ukrainian Scientific Center for Information Technology Development

(Kyiv, Ukraine), e-mail: serhii.zharinov@gmail.com, ORCID 0000-0003-3568-8127

HAUSCHKE C.

Leibniz Information Centre for Science and Technology (TIB) and University Library

(Hannover, Federal Republic of Germany), e-mail: christian.hauschke@tib.eu,

ORCID 0000-0003-2499-7741

The New Business Model for the State Scientific and Technical Library of Ukraine Enhancing New Digital Tools for Researchers

Objective. The research activities play a significant role in the transformation of libraries, helping them to develop new business models that better suit the changing needs of their users and new services that are responsive to those needs. The new challenges introduced by the Law of Ukraine "On Scientific and Scientific-Technical Activities" 2016 aim to promote a more innovative and competitive scientific and technical ecosystem in Ukraine, and to encourage greater collaboration between researchers, businesses, and the government as well the EU approach to the research data. In this regard, the State Scientific and Technical Library of Ukraine (SSTL of Ukraine) has to redirect its main activities and begin using fundamentally new means and methods of research and science management. This research aims to study the transformation of the SSTL of Ukraine under the influence of changes in scientific data management and the usage of scientific information. These factors play a vital role in the transformation of SSTL of Ukraine by providing a foundation for understanding user needs, developing new models and services, enhancing information literacy, promoting collaboration, and informing policy. By incorporating these insights, SSTL of Ukraine remains relevant in an ever-evolving digital landscape. **Methods.** The study employed a mixed-methods approach, combining qualitative and quantitative data collection techniques. A comprehensive review of existing literature on digital tools in research libraries was conducted, followed by surveys and interviews with library stakeholders, researchers, and patrons. The data obtained were analyzed using statistical methods and thematic analysis to derive meaningful insights. **Results.** The new tools facilitate interdisciplinary collaboration, enabling researchers to connect with peers, exchange ideas, and engage in collaborative projects. Such networking opportunities have proven invaluable in promoting innovation and fostering a vibrant research community. **Conclusions.** The successful implementation of the new business model for the State Scientific and Technical Library of Ukraine, focusing on enhancing research through the utilization of new digital tools, has yielded significant benefits. Researchers now enjoy improved accessibility to research materials, enhanced collaboration opportunities, and advanced data analysis capabilities. These outcomes have positively impacted the research ecosystem in Ukraine by facilitating knowledge dissemination, fostering interdisciplinary collaborations, and accelerating the pace of scientific discoveries. The results of this study emphasize the importance of embracing digital transformation in research libraries and provide valuable insights for other institutions seeking to enhance their support for researchers through the integration of digital tools.

Keywords: open science; libraries transformation; digital tools for researchers; scientometrics

Introduction

The scientific field is one of the most globalized, and information about the results of scientific research should be available to Ukrainian scientists. In the era of the information society, a large amount of information can be found in open access, using widely known search engines.

In the scientific field, data is an integral element. In the book "The Fourth Paradigm: Data-Intensive Scientific Discovery," the authors characterize modern science as "data-intensive",

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which includes three essential processes: data collection, management, and analysis (Hey, Tansley, & Tolle, 2009). Scientists produce datasets of varying sizes and formats during their research, often requiring specialized software to process. The traditional hypothetic-based approach characteristic of the Third Paradigm, is increasingly being replaced in some fields by the analysis of specialized electronic databases. At the same time, there is a growing demand for collecting, accessing, and analyzing research information, which in most cases remains scattered across hundreds of websites and personal web pages of researchers.

In this context, we should keep in mind that information on publication activities, participation in the research projects, peer review activities, etc. is the important component of research information and research information systems. At the beginning of 2016, such information was poorly studied, and even now, the consolidation and normalization of data remains a challenge in creating research information systems.

Another issue is the operation of quality filters in scholarly publishing. So-called predatory journals try to take advantage of disadvantaged or inexperienced researchers, or simply try to make money from people who want to publish without going through the hassle of peer review (Boukacem-Zeghmouri, 2023). It oftentimes is recognized as being associated with openness. Open systems, in the context of scientific publishing, refer to platforms or journals that provide unrestricted access to research articles and data. The idea behind openness is to promote the free flow of knowledge, enable collaboration, and foster innovation by removing barriers to accessing information. Open systems, in principle, are meant to benefit the scientific community and society at large. The problem of predatory publishing, on the other hand, is related to the unethical practices of certain journals that exploit the open access model for financial gain without maintaining the necessary quality control through peer review. These predatory journals often charge authors exorbitant fees without providing the expected level of editorial review and scientific scrutiny. As a result, some articles published in these journals may lack scientific rigor, leading to unreliable or misleading results.

Corporate greed can also play a role in the quality issues within scientific publishing, including both open and traditional subscription-based models. Large publishers have been criticized for their profit-driven practices, high subscription costs, and sometimes aggressive tactics that put pressure on researchers to publish in their journals, possibly leading to compromised scientific standards.

To address the problems associated with predatory publications and the lack of quality filters, the scientific community must work together to establish and support reputable open-access journals with strong peer review processes. Researchers should be cautious and conduct due diligence before submitting their work to any publication. Initiatives like the Directory of Open Access Journals (DOAJ) can help identify trustworthy open-access journals. And of course, responsible practices, transparency, and collaboration within the scientific community are key to ensuring the credibility and reliability of research publications in both open and traditional publishing models.

Since national scientists require a high-quality resource for searching, analyzing information, strategic planning of scientific activities and their verification, the SSTL of Ukraine has started to transform its activities from purely classical to utilizing modern digital tools and practices to address the aforementioned problems.

This research aims to study the evolution of the scientific library under the changing digital tools for researchers using the SSTL of Ukraine case.

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Methods

Several methods were employed to study the contribution of research to the SSTL of Ukraine's transformation. One of them is bibliometric analysis, which involves analyzing bibliographic data to identify patterns in research output, impact, and collaboration. This can help to identify key research areas and researchers who have contributed to library transformation.

Another method is content analysis, which involves analyzing the content of research publications to identify themes, trends, and research gaps. Interviews with the main stakeholders also were used to gather information from researchers and librarians about their perceptions of the impact of research on library transformation. Finally, case studies were conducted to examine specific research projects' impact on SSTL transformation.

Results and Discussion

When we are talking about the sources for our research, we should firstly mention the Law of Ukraine "On Scientific and Scientific-Technical Activities" 2016 ("Pro naukovu i naukovu-tekhnichnu diialnist", 2016).

The discussions about the need for a new law that would regulate the state's policy in the field of science, as well as regarding the integration of Ukrainian science into the European Research Area began.

According to the Law on Scientific and Scientific-Technical Activity, the criteria for the "success" of universities and research institutions are:

- Competitiveness of the results of their own scientific research.
- The pool of promising candidates for developing cooperation.
- Areas of effort directed towards enhancing the reputation of the university.

This state of play demands new approaches and tools for evaluating research activities and managing scientific information.

Until 2016, the main tasks for SSTL of Ukraine activities were ensuring proper storage and handling of information on paper carriers. Due to all new demand, SSTL of Ukraine started quality changes in its aim, tasks, and tools. In 2017 the Ministry of Education and Science of Ukraine took necessary measures to provide Ukrainian scientists with access to important electronic resources of scientific information and determine the SSTL of Ukraine as an administrator of this process ("Pro zatverdzhennia Poriadku zabezpechennia dostupu vyshchykh navchalnykh zakladiv i naukovykh ustanov, shcho znakhodiatsia u sferi upravlinnia Ministerstva osvity i nauky Ukrainy, do elektronnykh naukovykh baz danykh", 2017).

In 2017, for the first time, higher education institutions and research institutions gained access to the largest abstract and bibliographic databases, Scopus and Web of Science (as a result of the selection process, 68 institutions gained access to Scopus and 64 institutions gained access to Web of Science) ("Pro nadannia dostupu vyshchym navchalnym zakladam i naukovym ustanovam, shcho znakhodiatsia u sferi upravlinnia Ministerstva osvity i nauky Ukrainy, do elektronnykh naukovykh baz danykh", 2017).

In 2018, the number of institutions that gained access to these databases increased (135 institutions had access to Scopus and 105 institutions had access to Web of Science) ("Pro nadannia dostupu zakladam vyshchoi osvity i naukovym ustanovam, shcho znakhodiatsia u sferi upravlinnia Ministerstva osvity i nauky Ukrainy, do elektronnykh naukovykh baz danykh", 2018).

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Since 2019, access to the Scopus, and Web of Science databases has been provided through national subscription, allowing over 500 higher education institutions and research institutions to use such access over the past three years.

In addition to abstract and bibliographic databases, Ukrainian scientists have been provided with access to full-text databases of the world's largest scientific publishers using budget funds (in 2020 - access to electronic books and journals from Springer Nature, and in 2021 – access to the collection of electronic books from Elsevier).

In 2022, due to the war, providing access to electronic resources of scientific information through the state budget became impossible.

However, supporting Ukraine in difficult conditions of the war, many publishers and companies have opened or maintained (if such access was previously subscribed for through the budget) free access for Ukrainian scientists to their electronic resources. (“Pro nadannia dostupu zakladam vyshchoi osvity i naukovym ustanovam do elektronnykh naukovykh baz danykh ta vyznannia takymy, shcho vtratyly chynnist, deiakyykh nakaziv ministerstva osvity i nauky Ukrainy”, 2020), (“Pro nadannia dostupu zakladam vyshchoi osvity i naukovym ustanovam do elektronnykh naukovykh baz danykh”, 2021).

Thus, thanks to the support of international partners, the opportunities for Ukrainian educational institutions and research institutions to use electronic databases of scientific information have significantly expanded.

After the successful implementation of access to the scientometric database on November 12, 2019, a new service for scientists called the Open Ukrainian Citation Index (OUCI) has been launched in Ukraine. SSTL of Ukraine in the Ministry of Education and Science of Ukraine presented the idea of OUCI in the spring of 2018 (Cheberkus & Nazarovets, 2019)

The Open Ukrainian Citation Index is a search engine and database of scientific citations received from all publications that support the Initiative for Open Citations. Currently, most of the world's leading scientific publishers support the initiative.

Unlike similar services, OUCI differs because it is entirely non-commercial, meaning that access to it is free and open to everyone. At the same time, the database is filled according to transparent principles and has a clear mechanism for protection against manipulations with citations.

OUCI offers filters that allow searching for documents only among publications represented in Scopus, Web of Science Core Collection, and the List of Scientific Journals of Ukraine (categories A and B). This is important because the service is primarily created as a source of information and data analysis for the scientific community.

So, SSTL of Ukraine launched a convenient service for searching scientific publications and analyzing citations for scientists, teachers, students, editors of scientific journals, business representatives, grantors, educational and scientific managers.

The important point is that the government should have allocated additional resources to create the service. This work was carried out within the framework of standard funding for scientific activities at the State Scientific and Technical Library of Ukraine. The result of this scientific work is a specific scientific and software product.

OUCI is Ukraine's step towards integration into the global scientific community because it is built precisely on open citations. SSTL of Ukraine has only added analytical tools based on open data from Crossref, providing scientists with more convenient access to this information and its analysis.

The work with OUCI showed the research data problems, so we are starting the FAIR project.

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In modern scientific communication, a series of technological transformations are taking place, driven by the rapid development of computer technologies, as well as the global scientific community's desire to implement the principles of open science. The optimal online presentation of research data, both in terms of data obtained from research and data related to the research process (such as information about the scientific equipment used or funding information), is an important issue that requires practical and timely solutions and the care of the entire academic community. Today, more and more scientific stakeholders agree that key aspects of open science such as storage, management, and exchange of research data should comply with the FAIR (Findability, Accessibility, Interoperability, Reusability) principles developed by specialists who deal with the integration of data on scientific activity into electronic information systems, in order to make this data accessible, compatible, and legally reusable, and to facilitate information retrieval on the internet. Effective research data management and archiving are key conditions for progress in modern science and are vital in research and science policy and management.

Qualitative metadata is a necessary condition for Open Science. Metadata is an extremely important aspect of creating data that adheres to the FAIR principles, as potential users can only find, interpret, and reuse research data if a rich set of metadata is available. At the same time, research data placed on the internet but requiring more detailed metadata remains invisible and difficult to use and evaluate. The increasing demand for full transparency by scientific institutions leads to a growing interest in research data and metadata, scientific electronic information systems, and, in general, an increase in demand for high-quality and open research information. The joint project of the SSTL and the TIB – Leibniz Information Centre for Science and Technology on the application of FAIR principles for research information in open infrastructures envisaged the creation, based on the experience of Germany, of a roadmap for implementing CRIS technology in Ukraine (electronic information systems for storing and managing data on scientific research, which allow for the integration and analysis of disparate data obtained from different sources) in national systems of scientific communication, using the FAIR principles, as well as aimed at strengthening scientific and research cooperation between the two institutions for the exchange of knowledge and experience.

As part of the project, a series of workshops was organized and conducted by the project team, consisting of four individual online events, "FAIR Research Information in Open Infrastructures", which focused on various aspects of the FAIR principles – (F) findability, (A) accessibility, (I) interoperability, and (R) reusability of research information. This workshop series brought together various stakeholders interested in using research information, including experts in scientific communication, library science, scientometrics, computer science, and research funding organizations, in discussing existing barriers that prevent the production and exchange of structured, verified research information, and to determine how these issues can be solved in practice. Additionally, key criteria were identified that research information must meet to satisfy the information needs of the academic community (Hauschke, Nazarovets, Altemeier, & Kaliuzhna, 2021, Blümel, Drees, Hauschke, Heller, & Tullney, 2019).

The next project realized by the SSTL under the auspices of the Ministry of Education and Science of Ukraine became the national current research information system (named URIS).

Creating information systems as technological support for scientific research information is one of the most transparent and practical approaches to collecting, storing, disseminating, and analyzing research information. This is evidenced by the words of S. Hornbostel, who in 2006 stated that if we do not want a huge volume of research information to become a data graveyard, it is urgent to implement CRIS (Current Research Information Systems) systems, which establish connections between information and make it usable for further use (Hornbostel, 2006). Ukraine,

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being on the path of integration into the European and world scientific space, adopts the best practices of transparent science and innovation policy based on research effectiveness indicators. Developing a national electronic scientific information system based on international and national methodological and technical standards – the guiding principles of OpenAIRE, FAIR principles, and CERIF data format – will serve as a tool to achieve this goal and become a key infrastructure of the country's scientific ecosystem.

Information about research conducted by employees of Ukrainian institutions is not easily accessible. It is mainly located in various specialized electronic systems, which makes it difficult to work with it – to process and analyze it. This leads to the formation of incomplete and outdated reports, which in turn hinders making informed decisions in the management of scientific activity of the institution and the country as a whole. Therefore, the data collected in the electronic scientific information system can be used for evaluation, and decision-making only if it is complete, reliable, well-structured, and organized.

In this regard, the SSTL of Ukraine paid special attention not only to automating the process of data collection and searching for data sources but also to analyzing and improving the quality of metadata, which is the core of the CRIS system, studying potential data sources and ways of merging them to create a single access point, as well as the quality of the data. Most Ukrainian institutions need quality data and proper storage, structuring, and management in a machine-readable format.

In order to ensure the reliability of storage, interoperability of digital scientific services, and accuracy and completeness of data on scientific and scientific-technical activities of Ukrainian scientists, tools for automated collection, preservation, processing, exchange, standardization, deduplication, and visualization of scientific metadata in Ukraine will be developed.

Creating and supporting Current Research Information Systems (CRIS) is gaining popularity worldwide - information systems for storing and managing data on scientific research, which allow data to be combined and analyzed from various sources. Such information systems can manage all relevant research processes, starting with funding opportunities, writing and submitting proposals, applications for scientific projects, grants, etc.

Part of EU countries are actively engaged in creating and developing CRIS systems. As of December 2021, 978 electronic information-science systems were registered in the Directory of electronic scientific information systems DRIS (<https://dSPACECRIS.EUROCRIS.ORG/CRIS/EXPLORE/DRIS>) - an international online catalog of information systems. DRIS distinguishes four types of scope of such systems: departmental, funder, national, and institutional.

However, since registration is voluntary, it is obvious that the number of electronic information systems can be several times higher. Among the registered information systems, there are 40 national systems, including Norway (CRISin), Finland (Research.fi), Estonia (ETIS), Slovenia (SICRIS), Croatia (CroRIS), Peru (PeruCRIS), India (IRINS), Iceland (Islandic National CRIS), Israel (CRIS-IL).

CRIS are at different stages of their functional readiness. Such systems are being used to evaluate the scholarly output of institutions and individual scientists. The evaluation systems and indicators used in CRIS systems often change, so the functional requirements also change accordingly.

During the implementation of the URIS project, the SSTL of Ukraine team faced a series of challenges. For instance, certain processes at the Ministry of Education and Science needed to be digitized or produced data that could not be used in a machine-readable format, automatically imported, and processed in the system.

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As a result, an additional direction of URIS development appeared – the digitization of procedures connected with management issues in the Ministry of Education and Science of Ukraine. Thus, the first digitized procedures evaluated research activities, scientific projects' funding system, etc.

Using the URIS functional modules for evaluation research activities procedures allows to anticipate and ensure that all received data is interoperable and complies with FAIR principles at the database design stage, procedure formation, and form filling.

In 2020, Ukraine started working on creating a national CRIS system. According to the resolution of the Verkhovna Rada of Ukraine of October 4, 2019, No. 188-IX "On the Program of Activities of the Cabinet of Ministers of Ukraine" for 2020, the Ministry of Education and Science of Ukraine approved the operational plan for 2020, as well as the order of the Ministry of Education and Science of Ukraine of December 27, 2019, No. 1640, and the order of the Ministry of Education and Science of Ukraine of March 4, 2020, No. 348 "On the Creation of the National Electronic Scientific Information System 'URIS'", the SSTL of Ukraine was entrusted with the creation of the URIS" ("Pro stvorennia Natsionalnoi elektronnoi naukovo-informatsiinoi systemy «URIS»", 2020).

At the beginning of its creation, URIS was intended to become a centre for consolidating data on the results of professional scientific and scientific-technical activities of Ukrainian scientific institutions, higher education institutions, and scientists.

Research conducted during the first stage of the System's creation showed that a significant portion of the data that should be reflected in the System is not digitized, collected without proper control, and cannot serve as a reliable source of information. Also, a number of processes that scientific institutions, higher education institutions, and scientists carry out in their professional activities were identified, which require improvement and automatization.

Currently, the National Electronic Scientific Information System has the following functions:

- Aggregation of data on the sphere of scientific and scientific-technical activities in Ukraine.
- Automation of certain procedures and processes of entities in the field of science in Ukraine.
- Provision of data that are not available in accessible sources of information.
- Ensuring the verification of data by verified users of the System.
- Consolidation of data, their presentation, and provision of users with analytical tools for their research.
- Aggregation of information useful to domestic scientists, employees of scientific institutions, and higher education institutions on a single resource.

Through the performance of the System's functions, the following results are planned to be achieved:

Ensuring openness of data on Ukrainian science.

- Simplifying the process of searching for information, data, equipment, services, and resources for scientific research.
- Simplifying the process of searching for performers of science-intensive projects.
- Simplifying the process of preparing analytical information for making management decisions.
- Simplifying the procedures for filling out applications, forms, and reports for Ukrainian scientists, scientific institutions, and higher education institutions. ("Pro

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zatverdzhennia Polozhennia pro Natsionalnu elektronnu naukovo-informatsiinu systemu”, 2022)

Besides, in 2022 within the framework of collaboration with ORCID, the State Scientific and Technical Library of Ukraine began work on creating the National ORCID Consortium, participation in which will enable higher education institutions and research institutions in Ukraine to integrate ORCID into their institutional repositories, electronic archives, and internal systems. Due to the difficult situation in Ukraine, ORCID has waived the annual membership fees for participants of the Ukrainian consortium for the years 2022-2024.

In this context, it would be useful to compare the experience of the SSTL of Ukraine partner with TIB – Leibniz Information Centre for Science and Technology (the German National Library of Science and Technology). In the following, we want to provide an overview about some publications that describe activities of the TIB.

In “Die TIB: Mehr als eine Bibliothek” Sens et al. (2020) provide a good overview over some of TIB’S fields of activity. They describe Open Access Publishing and Open Access Services (journal hosting, repositories, APC fund etc.), sustainable research information infrastructure (av.tib.eu, fostering persistent identifiers), grey literature (TIB is deposit library for final reports of projects funded by several ministries), and the work of different research groups and labs at TIB (Technische Informationsbibliothek, n.d.). Furthermore, they mention different services and products of the TIB: Longterm preservation, Open-Access transformation, licensing digital resources, AV portal and give an outlook on the (then) future, the national research data infrastructure (NFDI) which aims at building infrastructures and services with having the scholars’ needs in the focus of attention. The TIB is involved in various NFDI consortia, starting with NFDI4Chem (for research data in chemistry, cf. Steinbeck et al., 2020), NFDI4Culture (for research data on material and immaterial cultural heritage, cf. Altenhöner et al., 2020), and NFDI4Ing (for research data in engineering, cf. Schmitt et al., 2020). Another focus of the TIB is the Open Research Knowledge Graph (<https://orkg.org>) (Auer et al., 2018).

Conclusion

One of the biggest contemporary challenges in information science is to promote the discovery of new knowledge from the ever-increasing amount of available information. Modern information specialists must assist people and computers in finding relevant research data, accessing it, and integrating and analyzing the data, algorithms, and associated workflows.

Access to information on the current scientific and research activities of European countries is one of the important conditions for the success of the EU’s innovation policy. The openness of key assets in European research and development, including ideas, technical reports, publications, patents, and prototypes, fosters generational processes for developing new, innovative scientific research and attracts investment.

Transparent scientific and innovation policies based on research performance indicators are especially important for research communities in developing countries. These communities depend on state financial resources and must demonstrate significant achievements to obtain grant support. Thus, transparency in the allocation of funds, as well as the determination of research priorities and the reflection of scientific excellence, are crucial for the construction and development of research activities.

The SSTL of Ukraine is a good example of a successful transformation from a multi-disciplinary collection of scientific and technical literature and documentation storage to the administration of electronic scientific information resources, including OUCI and URIS, which

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are part of the governmental action plan. Since 2014, SSTL has become a powerful hub for collecting and proceeding the scientific information, research and data processing.

Therefore, the implementation of new digital tools, and ensuring access to digital abstract databases, as well as the digitization of procedures at the Ministry of Education and Science of Ukraine, have formed a new business model for the State Scientific and Technical Library of Ukraine, focused on the development of open science, simplification of bureaucratic processes for scientists, and the provision of reliable information to the Ministry of Education and Science of Ukraine as well as other stakeholders, and the popularization of open science.

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ZHARINOVA A. H.

Державна науково-технічна бібліотека України (Київ, Україна),

e-mail: zh.alla0812@gmail.com, ORCID 0000-0003-3959-1074

ZHARINOV S. S.

Український науковий центр розвитку інформаційних технологій (Київ, Україна),

e-mail: serhii.zharinov@gmail.com, ORCID 0000-0003-3568-8127

HAUSCHKE C.

Інформаційний центр науки і технологій Лейбніца, Бібліотека Університету

(Ганновер, Німеччина), e-mail: christian.hauschke@tib.eu, ORCID 0000-0003-2499-7741

Нова бізнес-модель Державної науково-технічної бібліотеки України з використанням нових цифрових інструментів для дослідників

Мета. Науково-дослідницька діяльність відіграє значну роль у трансформації бібліотек, допомагаючи їм розробляти нові бізнес-моделі, які краще відповідають мінливим потребам користувачів, а також нові послуги, що задовольняють ці потреби. Нові виклики, запроваджені Законом України "Про наукову і науково-технічну діяльність" 2016 року, мають на меті сприяти створенню більш інноваційної та конкурентоспроможної науково-технічної екосистеми в Україні, заохочувати ширшу співпрацю між дослідниками, бізнесом та урядом, а також запровадити європейський підхід до дослідницьких даних. У зв'язку з цим Державна науково-технічна бібліотека України (ДНТБ України) має переорієнтувати свою основну діяльність і почати використовувати принципово нові засоби та методи управління дослідженнями та наукою. Метою цього дослідження є вивчення трансформації ДНТБ України під впливом змін в управлінні науковими даними та використанні наукової інформації. Ці фактори відіграють життєво важливу роль у трансформації ДНТБ України, забезпечуючи основу для розуміння потреб користувачів, розробки нових моделей і послуг, підвищення інформаційної грамотності, сприяння співпраці та формування інформаційної політики. Враховуючи ці фактори, ДНТБ України залишається актуальним у цифровому ландшафті, що постійно змінюється. **Методика.** У дослідженні використано змішаний підхід, що поєднує якісні та кількісні методи збору даних. Було проведено всебічний огляд наявної літератури про цифрові інструменти в наукових бібліотеках, а також опитування та інтерв'ю зі стейкхолдерами бібліотек, дослідниками та користувачами. Отримані дані були проаналізовані за допомогою статистичних методів і тематичного аналізу для отримання змістовних висновків. **Результати.** Нові інструменти сприяють міждисциплінарній співпраці, дозволяючи дослідникам спілкуватися з колегами, обмінюватися ідеями та брати участь у спільних проектах. Такі мережеві можливості виявилися неocenними у просуванні інновацій та формуванні активної дослідницької спільноти. **Висновки.** Успішне впровадження нової бізнес-моделі Державної науково-технічної бібліотеки України, що зосереджується на розширенні наукових досліджень завдяки використанню нових цифрових інструментів, принесло значні переваги. Дослідники тепер мають кращий доступ до дослідницьких матеріалів, розширені можливості для співпраці та вдосконалені можливості аналізу даних. Ці результати позитивно вплинули на дослідницьку екосистему в Україні, сприяючи поширенню знань, розвитку міждисциплінарної співпраці та прискоренню темпів наукових відкриттів. Результати цього дослідження підкреслюють важливість впровадження цифрової трансформації в наукових бібліотеках і надають цінну інформацію для інших установ, які прагнуть покращити свою підтримку дослідників шляхом інтеграції цифрових інструментів.

Ключові слова: відкрита наука; трансформація бібліотек; цифрові інструменти для дослідників; наукометрія

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MANTILLA M. T.

University of Perpetual Help System (Laguna, Philippines),

e-mail: melchor.mantilla@patts.edu.ph

Digital Knowledge, Skills and Application among Librarians and Library Staff of MUNPARLAS Library Association, Incorporated

Objective. The study aimed to identify and assess a level of digital knowledge, a level of digital skills, and a level of digital application of the librarians and library staff who are members of MUNPARLAS Library Association, Inc. **Methods.** Descriptive-correlational research design was used in this study to provide static pictures of situations as well as to establish the relationship between different variables. The respondents of this study are 60 Librarians and Library Personnel who are members of MUNPARLAS Library Association, Inc. **Results.** Findings revealed that the respondents' level of digital knowledge was very high, with an average weighted mean of 3.39. The respondents' level of digital skills was also very high, with an average weighted mean of 3.25. Additionally, the respondents' level of digital application was very high, with an average weighted mean of 3.52. There was a significant relationship between the respondents' digital knowledge and digital skills, as indicated by a p-value of 0.000, which was lower than the Pearson r-value of 0.812. Similarly, there was a significant relationship between the respondents' digital skills and digital application, with a p-value of 0.000, lower than the Pearson r-value of 0.712. Lastly, there was also a significant relationship between the respondents' digital knowledge and digital application, with a p-value of 0.000, lower than the Pearson r-value of 0.649. Therefore, it is necessary to propose an action plan to sustain the digital knowledge, skills, and application among librarians and library staff at MLAI. **Conclusions.** The findings of this study underscore the importance of digital literacy in the field of librarianship. MLAI should continue to prioritize the cultivation of digital knowledge, skills, and application among its staff to adapt to the evolving needs of its users and to stay ahead in the digital age.

Keywords: digital knowledge; skills; librarians; library staff; library associations

Introduction

It is a generally accepted fact that this pandemic became the most unexpected event for every person around the globe. School face to face classes and all offices whether public or private changed most of their everyday routine on how to serve their clients. Abrupt use of digital platforms became mandatory particularly in the field of Education. Libraries on the other hand need to focus in delivering services online to support their communities. For this to be effective, librarians, including library staff, must have knowledge and skills in using digital technologies, where communication and access to information occurs through Internet platforms, social networks, and mobile devices are required.

The libraries of the future are more than just housing centers for books and media. They are invigorating meeting places and communities where truly meaningful learning and discovery takes place. As technology has transformed reading and learning, it has also transformed the vision of the library in both structure and function. Librarians have always been needed as guides and providers to assist in learning and discovery. Librarians in the information age play a critical role in access to and application of knowledge (Crockett, 2018). Librarians must be able to work with digital media, and must be able to curate electronic collections, including the ability to select, acquire, describe, organize, reference, and preserve these digital works. The role of librarians is continuing to evolve with the adoption of Internet and World Wide Web into the librarianship. Though it is difficult to predict with certainty how active the role of librarians would be in this evolving scenario, it can be said with confidence that their services cannot be dispensed with because they have the necessary qualification and historically the first right to

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attend to the information needs of the seekers (Joute, 2019).

Current pandemic is a real test of abilities, resources and services, the present situation demands that Librarians reach out to their users with information resources rather than serving them within the library's physical walls. Every crisis brings the opportunity to shape library services with modern and up-to-date digital technologies. In a way, social distancing and other barriers do not come between library digital resources and library users. In any disaster or pandemic, the need for knowledge and information requires that libraries and research-based institutions are fully equipped with digital technology (Ali, Naeem, & Bhatti, 2020). Some Librarians lack the requisite digital literacy skills to access the wealth of digital information resources available. Librarians must be empowered with all necessary digital literacy skills, embark on rigorous training and retraining programs, workshops, conferences and seminars, there should also be a coherent training policy for the Librarians on a sustainable basis to increase their requisite digital literacy skills (Abdulkadir, 2018).

However, today is the digital age wherein we are living in a world with Google Assistant, Siri, Alexa, and other digital information assistants, people have come to rely on technology to seek answers and find information. There is no exception for today's students. Twenty years ago, students might go to an encyclopedia for answers; now they can simply ask their smartphones or type the question into Google (Obinyan, 2020).

There were numerous studies on digital knowledge, skills and application but there are no studies yet conducted among the MUNPARLAS member schools and library staff. With the existing situation, the researcher has decided to conduct a study entitled Digital Knowledge, Skills and Application among Librarians and Library Staff of MUNPARLAS Library Association, Inc. to look deeper how literate and skilled the Librarians of MLAI are.

Theoretical / Conceptual Framework

This study considered Puentedura (2016) SAMR model that has four levels of integration (substitution, augmentation, modification, and redefinition) that provides a framework or template for educators to gauge their integration levels. As cited by Lacruz, (2018), SAMR model is a useful tool to reflect on classroom and institutional technological integration. The SAMR model was created to help in planning and assessing the levels of technologies used in the classroom. This model looks to aid teachers, administrators, and educators in examining the use of technology in the classroom (Ramzan, Asif, Ahmad, 2021). Although technology in and of itself cannot be the only guiding principle for curriculum development the SAMR model allows the educator to evaluate the level at which the students are using technology and "...becoming creators of their own knowledge" (Martzoukou, 2021). The model is encouraging that curriculum be created in a way that allows students to also learn the technological skills needed in the 21st century (Laar, Van Deursen, Van Dijk, & Haan, 2019).

The SAMR model is a tool for "assessing and evaluating technology practices and impacts in the classroom setting" and can be examined at both the student and teachers levels (Nnenda, & Nsirim, 2020). The SAMR model is a popular model to categorize learning activities within the levels of technological integration of substitution, augmentation, modification and redefinition. The model is a useful tool to reflect on an educators' integration of technology within their own classroom but can also be used by institutions to gauge the level of integration across the institution. Therefore, Puentedura (2016) SAMR model will be valuable in examining digital knowledge, skills and digital application of Librarians and library

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staff of MUNPARLAS Library Association, Inc.

Thus, theories provide a framework on which researches are built. They support and strengthen research and provide a basis of support on the topical issues studied. In this paper, electronic resources and digital library are discussed pointing out some of the resources that are needed for effective functioning of the digital library. The paper considered connectivity theory, self-efficacy theory, Wormell model, Technology Acceptance Model (TAM) and Theory of Reasoned Action (TRA) in terms of the propounder of the theory, the year it was propounded and statement of the theory as well as their application to electronic resources and digital library environment. The paper suggests that, prospective researchers exploring the area of electronic resources and digital libraries can make use of these and other related theories to enrich their researches (Sawant &Yadav, 2020). Digital literacy certainly has the potential to contribute to far-reaching and important personal and societal consequences. Thus, increasing focus on development of digital literacy, however defined, should be a policy priority for all sectors (Julien, 2019). According to Kennan (2022) digital literacy skills are important because they enable access to information and engagement with government and support services that are increasingly provided online. This paper reviews literature and library programs world-wide to identify good practice in developing and facilitating digital literacy programs. Okeji, Tralagba and Obi (2020) study revealed the digital literacy skills that the librarians rated as very high and high, and those that they rated as moderate and low. The study also revealed the knowledge and competencies that they rated to be highly competent and competent, as well as also those that they rated to be neutral and not good.

Methods

Descriptive-correlational research design was used in this study. The study aimed to provide static pictures of situations as well as to establish the relationship between different variables. The respondents of this study were the Librarians and Library Personnel who are members of MUNPARLAS Library Association, Inc. that had a total number of 60. Based on the Raosoft calculator the recommended sample size was 53. Stratified sampling method was applied because of the three locations in MUNPARLAS (Muntinlupa, Parañaque and Las Piñas). The margin of error accepted was 5% while the level of confidence needed was 95%. The primary sources of data were the responses of the Librarians and library staff who are members of MUNPARLAS Library Association, Incorporated.

Results and Discussion

This section deals with the presentation, analysis and interpretation of data. The results were presented in accordance to the statement of the problems.

Table 1

The Respondents' Level of Digital Knowledge

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Knowledge of software acquisition process (either through vendors or open-source platforms)	3.29	Very High	7

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2. Understand and use social media effectively	3.63	Very High	1
3. Knowledge of copyright laws in the digital environment.	3.42	Very High	4.5
4. Knowledge of digital preservation	3.25	Very high	8.5
5. Uploading documents to online platforms	3.50	Very High	3
6. Applying new technologies into library services	3.42	Very High	4.5
7. Use different storage devices to preserve digital contents (e.g., DVD, CD-ROM, etc.)	3.17	High	10
8. Ability to access open-source software	3.25	Very High	8.5
9. Create different file formats (PDF, GIF, bitmap, jpg)	3.54	Very High	2
10. Awareness of Search Engine Marketing (SEM)	3.38	Very High	6
Average	3.39	Very High	

Table 1 shows the level of digital knowledge among librarians and library staff of MUNPARLAS Library Association, Inc. Moreover, indicator 2 - Understand and use social media effectively has the highest weighted mean of 3.63 with verbal interpretation of very high. Followed by rank 2, indicator 9 - Create different file formats (PDF, GIF, bitmap, jpg) with weighted mean of 3.54, interpreted also as very high. Furthermore, the lowest rank in the respondents' level of digital knowledge is indicator 7 - Use different storage devices to preserve digital contents, e.g. DVD, CD-ROM, etc. with weighted mean of 3.17 described as high. The total average weighted mean is 3.39, therefore, the respondents' level of digital knowledge is very high.

Table 2

The Respondents' Level of Digital Skills

Indicators	Weighted Mean	Verbal Interpretation	Rank
Organizing electronic resources	3.12	High	10
2. Exchanging information with others on digital platforms using various strategies to collaborate, share, and communicate	3.27	Very High	4
3. Identify security measures and threats.	3.17	High	7.5
4. Marketing library services using social media.	3.37	Very High	2
5. Apply, evaluate, and manage information across digital and physical environments.	3.25	Very High	5
6. Evaluate suitability of software for digital projects	3.13	High	9

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7. Conduct a precise search in order to get focused information.	3.21	High	6
8. Engaging in digital spaces to design, create, and revise content online.	3.17	High	7.5
9. Can create and share digital content.	3.31	Very High	3
10. Can communicate and collaborate online.	3.50	Very High	1
Average	3.25	Very High	

Table 2 illustrates the level of digital skills among librarians and library staff of the MUNPARLAS Library Association, Inc. In the table indicator 10 ranked no.1 with weighted mean of 3.50 described as very high. This means that librarians and library staff have the skill to communicate and collaborate online. On the other hand, Indicator 4 ranked as no. 2 with a weighted mean of 3.37 described as very high. This indicates that librarians and library staff has a very high skill in marketing library services using social media. Moreover, indicator 2 gathered the lowest weighted mean of 3.12 and ranked no. 10 with verbal interpretation of high. This means that librarians and library staff need to develop more of their skills on the organization of electronic resources. Table 2 gathered 3.25 general weighted average mean described as very high. Therefore, MUNPARLAS librarians and staff possess a very high level of digital skills.

Table 3

The Respondents' Level of Digital Application

Indicators	Weighted Mean	Verbal Interpretation	Rank
1. Provide friendly interface to users.	3.56	Very High	3.5
2. Avail network facilities.	3.52	Very High	5.5
3. Support library functions.	3.67	Very High	1
4. Enhance advanced search, access and retrieval of information.	3.46	Very High	7.5
5. Improve the library operations.	3.60	Very High	2
6. Enable one to perform searches that is not practical manually.	3.46	Very High	7.5
7. Provide faster access to the holding of libraries worldwide through automated better catalogues	3.56	Very High	3.5
8. Digital technology affords multiple, simultaneous use from a single original which is not possible for materials stored in any other forms.	3.52	Very High	5.5
9. Cross references to other documents.	3.44	Very High	9.5
10. Eliminate time and space constraints	3.44	Very High	9.5
Average	3.52	Very High	

Table 3 illustrates the level of digital application among librarians and library staff of

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the MUNPARLAS Library Association, Inc. In the table, indicator 3-ranked no.1 with a weighted mean of 3.67 described as very high. This means that librarians and library staff have a very high level of digital application in terms of Support library functions. On the other hand, Indicator 5 ranked as no. 2 with a weighted mean of 3.6 described as very high. This indicates that librarians and library staff possess a very high level of digital applications in terms of improving the library operations. Moreover, indicator 9 & 10 gathered the lowest weighted mean of 3.44 and ranked 9.5 with verbal interpretation of very high. This means that librarians and library staff possess a very high level of digital applications in terms of cross references to other documents, eliminate time and space constraints. Table 3 gathered 3.52 general weighted average mean described as very high. Therefore, MUNPARLAS librarians and staff possess a very high level of digital applications.

Table 4

Overall Summary of the Levels of Digital Knowledge, Skills and Application Among Librarians and Library Staff of MUNPARLAS, Inc.

Respondents Level	Weighted Ave. Mean	Verbal Interpretation	Rank
The Respondents' Level of Digital Knowledge	3.39	Very High	2
The Respondents' Level of Digital Skills	3.25	Very High	3
The Respondents' Level of Digital Application	3.52	Very High	1

Table 4 corresponds to the overall summary of the levels of digital knowledge, skills and applications among librarians and library staff of MUNPARLAS Library Association, Inc. In the summary, it shows that librarians and staff have a very high level of digital knowledge, skills and application in work.

Table 5

Relationship between the Respondents' Level of Digital Knowledge and Level of Digital Skill

	Pearson r	p-value	Interpretation
Respondents' Level of Digital Knowledge and Level of Digital Skills	0.812** High correlation	0.000	Significant
**Significant @ 0.01			

There is a significant relationship between the level of digital knowledge and the level of digital skills between librarians and library staff. Therefore, it means that the respondent's level of digital knowledge is lower than the level of digital skills.

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Table 6

**Relationship between the Respondents' Level of Digital Skills
and Level of Digital Application**

	Pearson r	p-value	Interpretation
Respondents' Level of Digital Skills and Level of Digital Application	0.712** Moderate correlation	0.000	Significant
**Significant @ 0.01			

This means that there is significant relationship between the level of digital skills and the level of digital application among librarians and library staff. Which means that the level of digital skills is lower than the level of digital application.

Table 7

**Relationship between the Respondents' Level of Digital Knowledge
and Level of Digital Application**

	Pearson r	p-value	Interpretation
Respondents' Level of Digital Knowledge and Level of Digital Application	0.649**	0.000	Significant
	Moderate		
	correlation		
**Significant @ 0.01			

There is significant relationship between the level of digital knowledge and the level of digital application among librarians and library staff. Therefore, it means that the level of digital knowledge is lower than the level of digital application.

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Table 8

Proposed Action Plan Based on the Results of the Study

Phase 1 Date: June 2023 Venue: Google Meet					
Objectives	Introduction		Resources Needed		Expected Output
	Strategic Activities	Participants	Human	Financial	
To provide awareness of result of the Digital Knowledge, Skills and Application among Librarians and Library Staff of MUNPARLAS Library Association, Incorporated.	Online Presentation of the result on the Digital Knowledge, Skills and Application among Librarians and Library Staff of MUNPARLAS Library Association, Incorporated.	Administrators, Librarians & Library Staff	Researcher	None	Awareness of the result of the case study
To set the day and time of the training or workshop.	Identify the day and time of the professional development training or workshop.	Administrators, Librarians & Library Staff	Researcher	None	Schedule of the training
To acquire consent to the MLAI officials to conduct training or workshop to the librarians and library staff.	Write a letter of permission to conduct training or workshop	Administrators, Librarians and library staff	MLAI Library Committee	None	Approval to conduct the workshop or training

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Phase 2 Date: July 2023 Venue: San Beda College Library - Alabang					
Objectives	Digital Knowledge		Resources Needed		Expected Output
	Strategic Activities	Participants	Human	Financial	
To enhance the professional competencies/capabilities of MLAI Librarians and library staff in terms of digital knowledge.	Webinar and online training on: a. Knowledge of software acquisition process (either through vendors or open source platforms); b. Understand and use social media effectively; c. Knowledge of copyright laws in the digital environment; d. Knowledge of digital preservation; e. Uploading documents to online platforms; f. Applying new technologies into library services; g. Use different storage devices to preserve digital contents, e.g. DVD, CD-ROM, etc.; h. Ability to access open source softwares; i. Create different formats (PDF, GIF, bitmap, jpg); and j. Awareness of Search Engine Marketing (SEM).	Administrators, Librarians and library staff	Guest Lecturer	Training Fee	The librarian and library Staff can identify and apply digital knowledge at work. Assessment result after the training.

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Phase 3 Date: August 2023 Venue: Olivarez College Library					
Objectives	Digital Skills		Resources Needed		Expected Output
	Strategic Activities	Participants	Human	Financial	
To enhance the professional competencies/ capabilities of MLAI Librarians and library staff in terms of digital skills.	Webinar/Seminar, Training and benchmarking on: - Organizing electronic resources; - Exchanging information with others on digital platforms using various strategies to collaborate, share, and communicate; - Identify security measures and threats; - Marketing library services using social media; - Apply, evaluate, and manage information across digital and physical environments; - Evaluate suitability of Software for digital projects; - Conduct a precise search in order to get focused information; - Engaging in digital spaces to design, create, and revise content online; - Can create and share digital content; and - Can communicate and collaborate online.	Administrators, Librarians and library staff	Guest Lecturer	Training Fee	The librarian and library staff can identify and apply digital skills at work. Assessment result after the training.

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Phase 4 Date: September 2023 Venue: Southville International School and Colleges Library					
Objectives	Digital Application		Resources Needed		Expected Output
	Strategic Activities	Participants	Human	Financial	
To enhance the professional competencies/ capabilities of MLAI Librarians and library staff in terms of digital application.	Webinar/Seminar, Training and Benchmarking.	Administrators, Librarians and library staff	Guest Lecturer	Training Fee	The librarian and library Staff can identify and apply digital applications at work. Assessment result after the training.
Phase 5 Date: October 2023 Venue: PATTS College of Aeronautics Library					
Objectives	Culminating Activity		Resources Needed		Expected Output
	Strategic Activities	Participants	Human	Financial	
To provide rewards to the efforts made by the people who make the activity successful and meaningful.	Awarding of tokens and appreciation to the guest speakers, librarian and library staff who completed the trainings.	Administrators, Librarians and library staff	Guest Lecturer	Training Fee	The librarian and library staff can identify and apply digital KSA.

Conclusion

In conclusion, the study revealed that the librarians and library staff demonstrated a very high level of digital knowledge, digital skills, and digital application. The results also demonstrated significant positive relationships between these three aspects, highlighting the interconnectedness of digital competencies in the library profession.

These findings emphasize the critical role of digital literacy within the realm of librarianship. In today's rapidly evolving information landscape, libraries and their staff must be well-equipped to harness digital tools and technologies to meet the changing needs of library users. MLAI should view these results as a call to action and continue to prioritize the development and maintenance of digital knowledge, skills, and application among its members. By doing so, MLAI can not only better serve its patrons but also position itself as a forward-

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thinking and adaptive organization in the digital age.

In light of these findings, it is recommended that MLAI consider implementing an action plan focused on ongoing digital training, skill enhancement programs, and the integration of digital technologies into library services. Such initiatives will not only benefit the individual members but also enhance the overall effectiveness and relevance of MLAI as a vital resource for its community.

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MANTILLA M. T.

Університет системи безперервної допомоги (Лагуна, Філіппіни),

e-mail: melchor.mantilla@patts.edu.ph

Цифрові знання, навички та застосування серед бібліотекарів та працівників бібліотек Бібліотечної асоціації MUNPARLAS

Мета. Дослідження мало на меті виявити та оцінити рівень цифрових знань, цифрових навичок та рівень застосування цифрових технологій бібліотекарями та працівниками бібліотек, які є членами Бібліотечної асоціації MUNPARLAS. **Методика.** У цьому дослідженні було використано описово-кореляційний дизайн дослідження, щоб надати статичну картину ситуацій, а також встановити взаємозв'язок між різними змінними. Респондентами цього дослідження стали 60 бібліотекарів та працівників бібліотек, які є членами Бібліотечної асоціації MUNPARLAS. **Результати.** Результати показали, що рівень цифрових знань респондентів дуже високий – середньозважений показник становить 3,39. Рівень цифрових навичок респондентів також був дуже високим – середньозважений показник склав 3,25. Крім того, рівень застосування цифрових технологій у респондентів був дуже високим – середньозважений показник склав 3,52. Існує значний зв'язок між цифровими знаннями та цифровими навичками респондентів, про що свідчить р-значення 0,000, що нижче за г-значення Пірсона 0,812. Аналогічно, існує значний зв'язок між цифровими навичками респондентів та цифровими додатками, що підтверджується значенням р-value 0,000, яке є нижчим за значення г-value Пірсона 0,712. Нарешті, між цифровими знаннями респондентів та цифровими додатками також спостерігався значний зв'язок: р-значення 0,000, що нижче за г-значення Пірсона 0,649. Таким чином, необхідно запропонувати план дій для підтримки цифрових знань, навичок і застосування серед бібліотекарів і працівників бібліотек в MLAI. **Висновки.** Результати цього дослідження підкреслюють важливість цифрової грамотності в бібліотечній справі. MLAI має й надалі надавати пріоритет розвитку цифрових знань, навичок і практичного застосування серед своїх співробітників, щоб адаптуватися до мінливих потреб користувачів і залишатися на крок попереду в цифрову епоху.

Ключові слова: цифрові знання; навички; бібліотекарі; бібліотечний персонал; бібліотечні асоціації

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KOBIELIEV O. M.

Kharkiv State Academy of Culture (Kharkiv, Ukraine),

e-mail: k_a_n_@ukr.net, ORCID 0000-0001-8806-0662

KARPENKO O. O.

State University of Information and Communication Technologies (Kyiv, Ukraine),

e-mail: karololeks@gmail.com, ORCID 0000-0002-9922-165X

KOLESNYKOVA T. O.

Scientific Library, Ukrainian State University of Science and Technologies (Dnipro, Ukraine),

e-mail: t.o.kolesnykova@ust.edu.ua, ORCID 0000-0002-4603-4375

Scientific Achievements of the Leader of Modern Ukrainian Librarianship V. Ilhanaieva: Bio-bibliometric Analysis

Objective. The article aims to highlight the essence and possibilities of biobibliometrics in determining the scientific productivity of scientists, in particular, the scientific achievements of one of the most outstanding researchers in librarianship V. Ilhanaieva. **Methods.** Bio-bibliometric analysis was the main method used in the study to determine the current state of science and technology in the field of social communications. The methods of analysis and synthesis were also used. **Results.** The results of the bio-bibliometric analysis of the scientific activity of the leader of modern domestic librarianship V. Ilhanaieva are presented by characterizing her general scientific productivity and defining the features of achievements at individual stages of the research activity in the field of social communications. **Conclusions.** It has been proven the dependence of developing science and technology on scientists' research activity and their social connections, as well as functional connections between elements of biographical information and bibliographic data. Wherein the prospects of biobibliometrics as a special scientific tool for such studies are determined.

Keywords: bio-bibliometric analysis; biobibliometrics; bibliographic data; scientific activity; scientific productivity; social communications

Introduction

The name of Valentyna Oleksandrivna Ilhanaieva, doctor of historical sciences, professor, is well known to specialists in the social and communication sphere not only in Ukraine but also abroad. The result of the fruitful 45-year scientific activity of V. O. Ilhanaieva is her significant contribution to the study of problems of social interaction, the theory of social communications in their epistemological, ontological and phenomenological aspects, social information technologies, knowledge management, medialogy, theoretical and methodological problems of modern librarianship, upbringing and education. As a result of V. O. Ilhanaieva's powerful scientific explorations new scientific concepts, based on universal approaches to detecting proportionality and harmony in the process of development in the single system "Nature–Man–Society" have emerged. In particular, it concerns the concepts of social interaction as a system-forming element in the basic components of human life, activity and cognition, as well as media space as an integrative, ultimate state of the communication subsystem of society. In her works, V. O. Ilhanaieva consistently develops the integrative methodological principles of librarianship, the theory of social communications and social interaction. On her initiative in 2007 a new scientific field called "social communications" was launched, the nomenclature of its scientific specialities, formulas, passports, and directions of scientific research were developed, and PhD exam programs were created. The new scientific direction and the developed teaching

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and methodical materials were approved by the Higher Attestation Commission and the Ministry of Education and Culture of Ukraine (Davydova, 2019). In the context of the current anniversary date of the scientist, all the above-mentioned provide reasons to turn to the analysis of her scientific output, based on the use of the possibilities of biobibliometrics.

Literature review

Bio-bibliometric research helps to analyze the profiles of individual scientists over many years, which makes it possible to use the cycle of generation and development of knowledge at different stages. (Dutta, 2019; Osorio & Slutsky, 2012).

The results of the analysis of V. O. Ilhanaieva's scientific achievements are presented primarily in a number of reference and encyclopedic publications (Davydova, 2019; Kanistratenko, 2011; Wikipedia, 2023), where it is also possible to find basic biographical data of the scientist. It should be especially noted that Valentyna Oleksandrivna Ilhanaieva's publications were also studied within the bibliometric analysis of developing Ukrainian librarianship (Kobieliev, 2001a). In particular, the monograph *Library Education: A New Paradigm of Development* (Ilhanaieva, 1996) was of particular interest because its study (together with other domestic monographs) made it possible to determine the outline of the cognitive structures of Ukrainian librarianship in 1980–1990 (Kobieliev, 2000). In domestic science, there are also examples of using bibliometrics and biobibliometrics to analyze the scientific work of famous scientists (Voitsekhivska, 1999; Kobieliev, 2010).

Taking the above-mentioned into account, we believe that the objective of the article is the study of Valentyna Oleksandrivna Ilhanaieva's scientific activity through the prism of bio-bibliometric research itself.

Methods

Scientists' activity and their social relationships can be revealed using bio-bibliometric analysis of functional relationships between elements of biographical information and bibliographic data. This work presents the results of a partial bio-bibliometric analysis of V. O. Ilhanaieva's scientific activity. The research based on publications of 1975–2023 includes the following information: a list of biographical information about Prof. V. O. Ilhanaieva in chronological order, a bibliography of publications and a bibliography of materials about her life and activities. The volume of the article did not allow the authors to conduct a detailed bibliometric analysis of publications by Professor V. O. Ilhanaieva, but a species analysis of publication composition was carried out and the main stages of scientific and practical activity during 1975–2023 were allocated. At the same time, achieving the specified objective of considering Professor V. O. Ilhanaieva's scientific activity through the prism of bio-bibliometric research requires a preliminary brief consideration of the essence of biobibliometrics, the possibilities of its application in the research of the scientific creativity of outstanding scientists. That is why the authors selected two subsections in the «Results» section such as «The essence of biobibliometrics» and «The results of partial bio-bibliometric analysis of V. O. Ilhanaieva's scientific activity».

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Results and Discussion

The essence of bibliometrics

The analysis of the existing interpretations of the concept of bibliometrics proved that one of its most successful definitions belongs to R. Broadus who considers bibliometrics as «a method of quantitative research of printed documents that exist in the form of material objects or bibliographic units, as well as substitutes for both» (Broadus, 1987, p. 377). This definition covers any quantitative means that can be applied such as the number of different items including volumes in a library collection or publication titles (bibliographic units); publications in journals; chapters in monographs published, for example, by one author; articles published in a certain subject area during a certain period.

Various forms of publication analysis and, especially, citation analysis are the most important components of bibliometrics. The reliability of these methods is determined by the tradition of science as a social institution. The notification of a scientist about the results of his work in the form of a publication, as well as the phenomenon of citation, is undoubtedly not only an important ethical norm in science but also a general scientific regulator and a means of scientific communication that has been emphasized by researchers repeatedly. Moreover, according to T. Kuhn (Kuhn, 1970, p. 12), changes in the citation of special literature in scientific publications can be considered a possible indicator of scientific revolutions, because each of them changes the historical perspective of the scientific community, which should affect the structure textbooks and research papers after this scientific revolution. The importance of bibliometrics as a research toolkit is determined by the fact that publications and bibliographic references to them are at the intersection of two systems – cognitive (conceptual) and the system of scientific recognition. Moreover, in each individual act of citation, the influence of the above-mentioned systems is always present. The first (cognitive) creates the necessary conditions for citation. The publication as a whole should have scientific meaning: the ideas presented should be relevant to the needs of a certain audience, logically connected and convincing (Kuhn, 1970). The text of a scientific publication is an author's attempt to place ideas in some context that may affect readers in different ways. Bibliographic references are the first and most important fragment of the text of a scientific publication, which carries a certain "energy" of influence on the reader. Both systems – conceptual and scientific recognition – need bibliographic references to implement two tasks:

- transmitting the exact content of the cited publication, the exact set of concepts revealed by accurate citation;
- providing an accurate list of cited documents.

It is bibliometrics that allows to get the results which can be the basis for further, more detailed, study by the methods of traditional substantive analysis of science, within the limits of various modern scientific concepts and models aimed at researching the subject of scientific activity, which creates scientific knowledge, socio-cultural factors, etc. For example, J. Holton in *Thematic Analysis of Science* (Holton, 1974, 1975) notes that the way to reveal the process of the emergence of new knowledge is to consider each event in the history of science as the intersection of three "trajectories":

- the individuality of the scientist;
- the state of science, general scientific knowledge in the researched period;
- features of social factors, taking into account the general cultural context of the era.

J. Holton uses the principles of traditional meaningful study. But to study the above-mentioned "trajectories" (or factors), it is possible to effectively apply various methods of quantitative analysis of the development of science, which determine the intensity of scientific

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communications, in particular the growth of the number of scientific publications, as well as the dynamics of various social factors (the number of scientific personnel, the amount of funding, etc.).

Thus, bibliometric indicators, primarily the number of publications and the level of citations, are the basis for studying the individuality of a scientist (the first factor), characterizing his scientific status, determining his level, authority, etc.

Therefore, the development of biobibliometrics as a special tool for such studies in recent years is indicative. According to S. Sen and Sh. K. Gan (1990), biobibliometrics is based on the fact that the state of science and technology in a certain organization or subject area can be better understood through the sociohistoriography of science by studying the lives and activities of the most prominent researchers. Scientists' activities and their social relationships can be revealed using bio-bibliometric analysis of functional relationships between elements of biographical information and bibliographic data. Biographical information should include data on the social origin and family, educational speciality, professional level, academic degrees and awards, promotion, leisure activities, etc. Bibliographic information includes data on the nature and number of publications, co-authored works, information on various editions with a scientist's publications (periodical, etc.), analysis of citations and references, new ideas, etc. S. Sen and Sh. K. Gan (1990, p.15) emphasize that the need for the emergence of biobibliometrics is caused by the fact that within scientometrics and bibliometrics, models or concepts where a central place in the research belongs to an individual scientist have not been developed yet. Models, means and tools of scientometrics and bibliometrics consider a group of individuals and their joint activity, in units of measurable output, as a statistical population.

The basis for bio-bibliometric analysis is the currently formed system of bibliographic information. Together with the disciplinary departments of the general registration bibliography, abstract information, critical review and historiographical activities, and pre-book bibliography the system not only reflects the development processes and the current state of scientific knowledge but is also the most important mechanism of scientific reflection, self-awareness of science, (primarily: sectoral and problem-thematic indexes, abstract publications and historiographic studies).

Thus, biobibliometrics was created on the basis of the well-known concept of «biobibliography» in the social sciences (it is considered, as a rule, as a comprehensive, annotated list of publications of a specific scientist with a list of his biography and other published materials on any aspect of his life and work), using some approaches of scientometrics and bibliometrics for designing sufficiently representative databases of individual specialists with the purpose of producing scientific and technical indicators based on them. Because the biobibliography as an attempt to create the most complete portrait of the personality and give information about the personality across the entire spectrum of life, remains a simple list of documents with all the possibility of completeness.

According to S. Sen and Sh. K. Gan (1990), a set of biobibliographies of scientists engaged in a certain field can be used for comparative analytical and quantitative studies of these specialists, as a result of which important regularities can be retained. Therefore, biobibliometrics is growing as the application of bio-bibliometric concepts and methods to the analysis of bibliographic data, with biobibliometrics being seen as more than just bio-bibliographic data or bio-bibliographic selection. Information about the citation of each publication is added to the bio-bibliographic characteristics of a particular scientist, which facilitates the conduct of full bio-bibliometric studies. Therefore, the bio-bibliometric analysis of the scientist's activity provides an opportunity to assess the interested activity, scientific productivity, dispersion of publications, citations, the

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versatility of interests, various types of social and intellectual influence of the scientist, the role of individuals in the created organizational structures, etc. According to S. Sen and Sh. K. Gan (1990), a complete bio-bibliometric analysis should include the following components:

- 1) a list of all scientist's biographical data in a chronological order;
- 2) a complete bibliography of a scientist's publications;
- 3) a complete bibliography of materials about a scientist's life and activities;
- 4) a complete list of materials cited or used by a scientist in his works;
- 5) a complete list of references to a scientist's works given by other authors.

A comprehensive bio-bibliometric analysis should be based on all five given points, and a partial analysis can be based on the data of only points one and two or include one or more such points. If it is necessary to study in aggregate, the activities of sufficiently representative scientists from a certain geographical area for a known period or persons working in a specific organization (for example, in a scientific and research institution), a volume bio-bibliometric analysis is possible, as noted, on based on partial information. With the help of such incomplete data sets, it is possible to conduct comparative studies of the activities of scientists in certain aspects.

Results of a partial bio-bibliometric analysis of V. O. Ilhanaieva's scientific activity

The research based on the data given in scientific publications (Davydova, 2019; Kanistratenko, 2011; Wikipedia, 2023; Slobodianyuk & Politova, 2010; Ilhanaieva, Google Scholar, 2023) covers a list of biographical data of Prof. V. O. Ilhanaieva in chronological order, a bibliography of publications and a bibliography of materials about her life and activities. First, the total number of publications (168) of V. O. Ilhanaieva for 1975–2023 was revealed, the dynamics of which during this period are presented in Fig. 1.

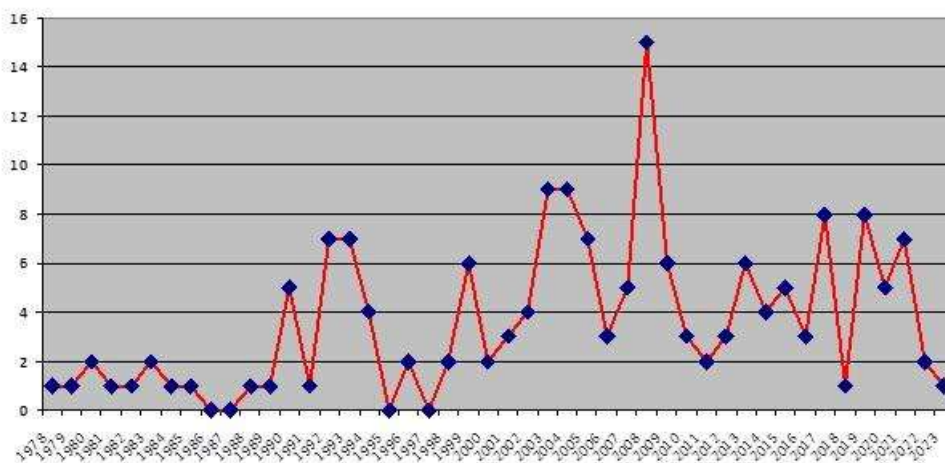


Fig. 1. Total Number of V. O. Ilhanaieva's Publications (1978–2023)

The result of the first analysis of the data presented in Fig. 1 shows the main peaks of Prof. V. O. Ilhanaieva's publishing activity. In particular, the largest number of her publications (15) was in 2008, and 9 papers were published in 2003 and 2004. It is certain that it is very important for characteristics of any scientist's scientific activity not only the number of publications but also their quality. Wherein the quality reflects different types of published works (monographs, scientific articles, educational publications, abstracts of conferences, etc.) and the citation index of scientific publications. Taking into account the scope of this article, a bibliometric analysis of

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references in Prof. V. O. Ilhanayeva's publications was not carried out. But the results of the study of references in her monograph (Ilhanaieva, 1996) within the scope of relevant research (Kobieliiev, 2000; Kobieliiev, 2001b) show that Ilhanaieva's monograph is included in the cognitive core of domestic librarianship, which in turn determines its high citation rate, that is confirmed by her Google Scholar profile (Fig. 2.).

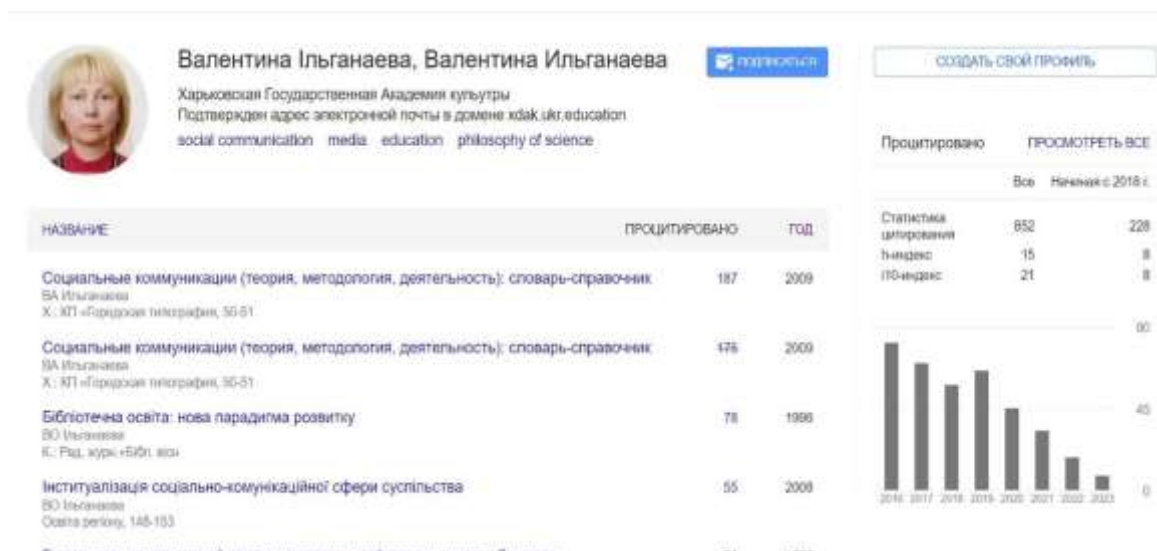


Fig.2. V. O. Ilhanaieva's Profile at Google Academy

Despite the fact that the monography was published as early as 1996, it is second only to the reference dictionary of Social Communications (Ilhanaieva, 2009) in terms of the number of citations, which is a priori designed for a much larger audience of readers.

According to the results of the species analysis of V. O. Ilhanaieva's publications shown in Fig. 3, there are 56 articles, 56 theses and 55 other publications among her 67 works. Among her other publications, collective monographs by V. O. Ilhanaieva and T. O. Kolesnykova (2010, 2016) are worth mentioning – *University Library at a New Stage of Developing Social Communications*, *University Library: A New Sphere of Information Interaction*, etc. They are devoted to an analysis of theoretical and applied problems of transformational processes both in the field of social communications in general, and library and information studies in particular. They also reflect the system-wide aspects of library activity in the conditions of forming the social communications system and the branch conditions of university library activity, organizational-functional, technological, and managerial aspects, as well as approaches, methods and experience in solving various problems that arise in the process of bringing libraries closer to the requirements of modern education space of the information society. For a complete understanding of the evolution of V. O. Ilhanaieva's scientific activity Fig.3 and Fig.4 show the species composition and thematic division of her publications in the main stages of scientific and practical activity (1975–2023) accordingly, combined with biographical facts of her life and activities.

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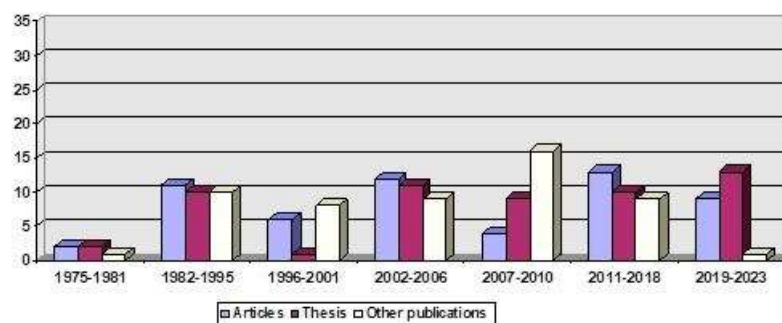


Fig. 3. Species Composition of V. O. Ilhanaieva's Publications in the Main Stages of Her Scientific and Practical Activity (1975–2023)

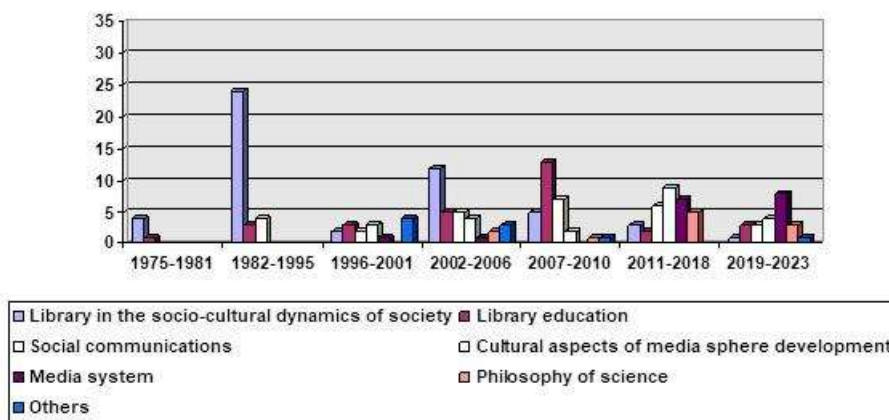


Fig.4. Thematic Distribution of V.O. Ilhanaieva's Publications into the Main Stages of Scientific and Practical Activity (1975–2023)

It is possible to determine the following stages of Prof. V. O. Ilhanaieva's scientific and practical activity:

1) 1975–1981. This stage includes the time of acquiring practical work experience by V. O. Ilhanaieva after graduating with honours from the Leningrad State Institute of Culture. In particular, she held the positions of an information engineer, and later – a head of the scientific and technical information department of the Research Institute of Automation of Production and Management. This period ends with defending her candidate's thesis on the topic «Determining service situations for improving bibliographic activities of scientific and technical libraries» and receiving a scientific degree as a candidate of pedagogical sciences. During this period, she had only five publications devoted to the problems of libraries in the socio-cultural dynamics of society and library education. But it is explained with a common editorial and publishing practice in the field of science there, characterized by a small number of publications, and a significant time in their preparation and printing, which led to an increase in the queue for the right of publishing even among well-known scientists, not to mention young scientists like V. O. Ilhanaieva at that time. As an example, at that time there was actually a single scientific and professional library publication for the whole of Ukraine – the interdepartmental scientific and methodological collection «Library Science and Bibliography»;

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2) 1982–1995. This stage is primarily determined by V. O. Ilhanaieva's work at the Kharkiv Institute of Culture in 1981 and since 1987 her leadership of the oldest «library» department in Ukraine – library science. At this time, she was involved in the active preparation of her research doctoral dissertation and monograph for publishing. During the period the results of her activity are reflected in her 31 works including 11 articles, 10 scientific-practical and educational-methodological recommendations, which were primarily devoted to the problems of libraries in the sociocultural dynamics of society, 27 publications on library education and 4 on social and communication problems. The researcher managed to do all this, despite a two-year break in her scientific work due to maternity leave.

3) 1996–2001. This period is characterized by defending a doctoral dissertation on *Library Education in the Context of the Evolution of the Social Communication System* by V. O. Ilhanaieva in 1996 and her obtaining the scientific degree of Doctor of Historical Sciences. In 1997, she headed the Department of Informatics, which was later transformed into one of Ukraine's first Departments of Social Informatics in 2000. During this period, her scientific activity was also marked by training of scientific personnel. In particular, she trained 20 candidates and 4 doctors of sciences and created her own scientific school. In the bibliometric dimension, there were about 15 publications, 6 of which were articles during the period. The topic of publications is expanding significantly, and the researcher's interest is increasingly shifting from purely librarian issues (5) to the study of social communication issues (2), cultural aspects of the development of the media sphere of society (3), the media system as a whole (1) and other problems (4);

4) 2002–2006. This stage of V. O. Ilhanaieva's scientific activity is primarily determined by an increase in her scientific, organizational and managerial workload. In particular, in 2002, she became the dean of the Faculty of Library Science and Informatics and a member of the expert council on the history of the Higher Attestation Commission in Ukraine. V. O. Ilhanaieva began to be actively invited to the editorial boards of the magazines «Library Planet», «Herald of HDAK», «Library Science. Documentary science. Informatology», «Bulletin of the Book Chamber», «Philosophy of Communication: philosophy, psychology, social communication», «Social communications: theory and practice». At the same time, she was an author of many original educational programs in the following disciplines: «Social Communications», «Information Management and Marketing», «Social Informatics», «Information Resource Management», «Intelligent Information Systems», «Information Analytics», and «Technological Management in the Library». In total, during these 5 years, 32 works were published, including 12 articles and 9 educational and methodological publications, some of which are mentioned above. The topic of publications continues to expand, that is shown in Fig. 3. In particular, Prof. Ilhanaieva begins to deal with the problems of the philosophy of science (2 publications), the number of works on social communications (5), cultural aspects of the development of the media sphere of society (4), library education (5) increased compared to previous periods. The problems of libraries in the socio-cultural dynamics of society were also in the sphere of her research. (12). In general, this stage can be considered one of the most successful in V. O. Ilhanaieva's scientific activity;

5) 2007–2010 is primarily characterized by the fact that on the initiative of V. O. Ilhanaieva, a new scientific field «social communications» was launched in 2007, the nomenclature of its scientific specialties, formulas, passports, and directions of scientific studies were developed, as well as candidate exam programs were created. The Higher Attestation Commission of Ukraine and the Ministry of Education and Science of Ukraine approved the new scientific direction and the developed set of teaching and methodical materials. During 2008–2010 V. O. Ilhanaieva was a member of the Expert Council on Social Communications of the Higher Attestation Commission of Ukraine. She was also actively involved in her publishing activities. In

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4 years, 29 works were published, including a monograph *University Library on a new stage of social communications development* (2010), and a dictionary reference on social communications (Ilhanaieva, 2009) became a leader in the number of citations (according to V. O. Ilhanaieva's profile in Google Academy). It should be noted that a significant number of works (20) were dedicated to the educational and methodological support of training specialists in the new scientific field of «social communications» (on the subject of library education and social communications as shown in Fig. 4).

6) 2011–2018. During this period, V.O. Ilhanaieva changed her residence and work. She moved to Uzhhorod where did her best for the Uzhhorod College of Culture and Art to improve the training of bachelors in the speciality 029 «Information, library and archival studies» to align with the accreditation standards. At the same time V. O. Ilhanaieva was a member of the scientific team at the KhDAK, which researched the state theme «Social communications in Ukraine in the context of world science» (2011-2016). She also became a member of the editorial board of the international electronic magazine «Media4u Magazine» (media4u.cz);

During the period, V.O. Ilhanaieva published 32 works, including 13 articles and 3 monographs. The thematic aspects of V. O. Ilhanaieva's research interests were concentrated on the problems of social communications (6), cultural aspects of the development of the media sphere of society (9), medial system (7), and philosophy of science (5);

7) During 2019–2023 V. O. Ilhanaieva as a professor of the humanities department at the Integral World Research Institute (Switzerland) has devoted her scientific research activity to purely theoretical aspects. During this time, despite pandemic restrictions and other negative events, in particular, in Ukraine, the researcher published 22 works, including 8 articles and 13 theses. According to their thematics, there was an evolution of her scientific interests in researching the media system (7), cultural aspects of the development of the media sphere of society (4), philosophy of science (3), and social communications (3).

Conclusions

The results of the bio-bibliometric analysis of the scientific achievements of the leader of modern Ukrainian librarianship V. Ilhanaieva have demonstrated her thorough contribution to the development of librarianship, social communications, and the media system for a fruitful 45-year path of her forming as a scientist with the breadth of scientific interests. All her scientific activity was reflected in 168 publications. The use of the bio-bibliometric analysis (even in its incomplete form) made it possible to identify the main milestones in V. Ilhanaieva's scientific activity by tracing the evolution of her scientific interests from the problems of libraries in the sociocultural dynamics of society and library education to the problems of social communications, cultural aspects of the development of the media sphere of society, the medial system, and the philosophy of science.

Thus, it can be stated, that there is a significant unused potential for using bibliometric and bio-bibliometric methods not only in domestic historical-librarian and biographical research but also in the information and analytical activities of libraries aimed at optimizing the management of library processes, which is especially important in modern conditions under the existing financial and material and technical limitations. It can be a perspective for supplementing the initial parameters of library collections' models with data from bibliometric and scientometric studies of document flows. Besides, biobibliometrics and bibliometric research are necessary components of many information products and services at libraries. Therefore, there is an objective need to have such a research tool at one's disposal, which allows obtaining the results, which can be the basis

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for further, more detailed, studies using the methods of traditional content analysis, within the limits of various modern concepts and models, etc.

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KOBIELIEV O. M.

Харківська державна академія культури (Харків, Україна),
e-mail: k_a_n_@ukr.net, ORCID 0000-0001-8806-0662

KARPENKO O. O.

Державний університет інформаційно-комунікаційних технологій (Київ, Україна),
e-mail: karpenkoo@duikt.edu.ua, ORCID 0000-0002-9922-165X

KOLESNYKOVA T. O.

Наукова бібліотека, Український державний університет науки і технологій (Дніпро, Україна), e-mail: t.o.kolesnykova@ust.edu.ua, ORCID 0000-0002-4603-4375

Науковий доробок лідера сучасного українського бібліотекознавства В. Ільганаєвої: біобібліометричний аналіз

Мета. Стаття має на меті висвітлити сутність та можливості біобібліометрії у визначенні наукової продуктивності науковців, зокрема науковий доробок одного з найвидатніших дослідників бібліотекознавства В. Ільганаєвої. **Методика.** Біобібліометричний аналіз – основний метод, використаний у дослідженні для визначення сучасного стану науки і техніки у сфері соціальних комунікацій. Також були використані методи аналізу та синтезу. **Результати.** Представлено результати біобібліометричного аналізу наукової діяльності лідера сучасного вітчизняного бібліотекознавства В. Ільганаєвої шляхом характеристики її загальної наукової продуктивності та визначення особливостей досягнень на окремих етапах науково-дослідної діяльності у сфері соціальних комунікацій. **Висновки.** Доведено залежність розвитку науки і техніки від дослідницької діяльності вчених та їх соціальних зв'язків, а також функціональних зв'язків між елементами біографічної інформації та бібліографічними даними. При цьому визначено перспективи біобібліометрії як спеціального наукового інструменту таких досліджень.

Ключові слова: біобібліометричний аналіз; біобібліометрія; бібліографічні дані; наукова діяльність; наукова продуктивність; соціальні комунікації

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YAP J. M.

Eotvos Lorand University (Budapest, Hungary), University of Perpetual Help System (Laguna, Philippines), West Visayas State University (Iloilo, Philippines),
e-mail: jomyap@student.elte.hu, ORCID 0000-0002-7852-1047

HAJDU BARAT A.

Eotvos Lorand University (Budapest, Hungary), e-mail: hajdu.agnes@btk.elte.hu, ORCID 0000-0002-6774-5440

KISZL P.

Eotvos Lorand University (Budapest, Hungary), e-mail: kizsl.peter@btk.elte.hu,
ORCID 0000-0003-2992-295X

Librarians' Civic Roles and Responsibilities: Issues in Information Crises and Information Disorders

Objective. Public libraries can be powerful advocates for civic engagement. They have a responsibility to rekindle civil society and educate and inform the public. Libraries must expand their role beyond physical and virtual space to promote civic practices in fighting fake news. Libraries can use their influence to help students and librarians identify misinformation and caution others against sharing it. This paper aims to introduce how librarians can activate their civic roles and define information disorders. **Methods.** Public librarians were interviewed using discourse analysis to identify the profession's information challenges and understand their civic roles. **Results.** Public librarians identified a variety of ways to perform their civic roles, and several constructs emerged in the definition of information disorders. **Conclusions.** This pilot study offers a glimpse into how public librarians interact with information and filter misinformation circulating on social media. Civic librarianship is evident, but librarians face professional challenges. Although this study focuses on public librarians, the authors believe that many aspects can be accustomed by all types of librarians.

Keywords: civic engagement; information disorders; information crisis; public librarians; discourse analysis

Introduction

Information is essential to all of us. We start our day by checking our schedules, which are a form of information that helps us plan our day productively. As we consume information on a regular basis, we are exposed to different types of information, some of which may be credible and accurate while others may not. The information we encounter daily can be challenging in a number of ways. We are now in the era of information crises, where facts and opinions intertwine. We acknowledge the concept of infodiversity, which enables the convergence of multiple and complex information (Morales Campos, 2006; Yap, Barat, & Kizsl, 2023b), as well as the impending harmful effects of information disorders that deceive consumers (Wardle & Derakshan, 2018; Yap, Barat, & Kizsl, 2023a).

Public libraries can be powerful advocates of civic engagement. They have a responsibility to rekindle civil society and educate and inform the public. Libraries must expand their role beyond physical and virtual space to promote civic practices in fighting fake news, as highlighted by Coward C., McClay C., and Garrido M. (2018). Public libraries can use their influence to help their community identify misinformation and caution others against sharing it. By definition, civic engagement is the idea by which a set of knowledge, skills, values, motivation, and actions are developed to create change and make a better society (Singh, 2020; Coward et al., 2018; Ehrlich,

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2000). This paper aims to introduce how public librarians create change in the community and their understanding of information crises and information disorders.

Information Crises in Libraries

Rumors online can easily trigger crises. In the business sector, it can cause significant financial costs, both direct and indirect (Jin & Austin, 2017). Information crises are events that disrupt the flow of information and can have a negative impact on individuals, organizations, and society as a whole. Information crises in libraries can be caused by natural disasters, cyberattacks, censorship, and misinformation campaigns.

Natural disasters such as floods, fires, and earthquakes can damage or destroy library collections and infrastructure, making it impossible for people to access the information and resources they need. Access to public libraries during emergency response is vital (Ghorbanzadeh et al., 2021). Cyberattacks such as ransomware attacks and data breaches can disrupt library services and compromise patron privacy, eroding trust in libraries. In the case of the University of Vermont Medical Center Library, they lost online access (Stokes, 2022). Censorship and other forms of government interference with the free flow of information can limit people's access to information and prevent libraries from fulfilling their role as bastions of knowledge and democracy. Censorship is a complex issue that affects all aspects of information, including access, policy, literacy, and politics. Policy and political decisions can lead to restrictions on access to information and literacy (Jaeger et al., 2023). Misinformation and disinformation campaigns can sow discord and undermine trust in libraries, making it difficult for libraries to serve their communities. Collectively known as information disorders, they are complex and deliberately crafted messages that aim to deceive the receiver of information or undermine the legitimacy of information in order to manipulate democratic societies (Yap, Barat, & Kizsl, 2023a).

Statement of the Problem

Kranich (2012) believes that public libraries have the potential to fully utilize their civic role by strengthening democratic movements. Looking at the current landscape in the context of Philippine public librarianship, do public libraries play an active role in citizenship by supporting democratic movements and helping to build a mature and informed civil society? The following research questions are asked:

- How do librarians activate their civic roles in facing information disorders?

In essence, the question is asking how librarians can be proactive in combating misinformation, disinformation, and information disorders as part of their broader civic engagement and responsibilities. This might involve activities that address these issues.

- How do Filipino librarians define or construct the information disorder phenomenon?

In summary, the question seeks insights into how librarians in the Philippines perceive and make sense of the concept of information disorder, which is crucial for understanding their role in addressing information-related challenges in their society and in their professional practice. Their definitions or constructs may help inform strategies and initiatives aimed at combating information disorders in the Filipino context.

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Civic Librarianship

The enormous challenge that librarians are facing is identifying accurate information. The rapid evolution of artificial intelligence (AI) in information delivery necessitates that librarians rapidly acquire knowledge of AI and its potential negative impacts. The dissemination of inaccurate information, regardless of intent, has negative consequences. Engaging with incorrect information can harm others who read the shared posts.

Information disorders, a collective term for inaccurate or misleading information that can harm democratic nations or societies, or harass individuals through hate speech, rumors, and unverified information, are characterized by three common problems: misinformation, disinformation, and malinformation.

The following definitions of misinformation, disinformation, and malinformation are adapted from Cooper (2021, p. 11):

- **Misinformation:** False information shared without the intent to deceive. Misinformation can also refer to an abundance of information that overwhelms users, making it difficult to discern the essence of the topic.
- **Disinformation:** False information shared knowingly with the intent to deceive.
- **Malinformation:** Verifiable information shared with the intent to cause harm.

Democratic nations thrive when citizens are actively engaged in the decision-making and public policy process. Libraries, which play a vital role in educating and informing society, have a responsibility to rekindle civic engagement and expand their role beyond physical and virtual spaces. Kranich (2012) identified the following civic initiatives that libraries can use to engage their citizens:

Category	Description
Library as Civic Space	Libraries provide safe and impartial spaces where citizens can seek help with personal and community challenges.
Library as Enabler of Civic Literacy	Civic literacy programs help citizens become savvy information seekers and effective content creators and producers.
Library as Public Forum and Conversation Catalyst	Libraries host programs that help users develop a deeper understanding of others' perspectives, connect citizens from all walks of life, and develop actionable solutions that reflect the collective wisdom of the community.
Library as Civic Information Center	Libraries provide access to e-government services and facilitate their use. They also offer a variety of local databases and websites on essential community services.

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The Library as Community-Wide Reading Club	Libraries promote reading by elevating it from a private activity to a public forum, where citizens from diverse backgrounds can discover or build common ground.
Library as Partner in Public Service	Partnering with educational institutions on collaborative projects to improve services for participating communities.
Library as Service Learning Center	Combining meaningful public service with curriculum- or program-based learning, service learning fosters civic responsibility.

While public libraries have the potential to be strong advocates of civic engagement, they also face a number of challenges.

- Librarians must develop the civic skills necessary to fulfill their civic duties and responsibilities. This includes incorporating civic engagement into the library and information science curriculum to prepare the next generation of librarians with these essential competencies.
- Librarians must be trained to understand and fulfill their civic roles. Some librarians may be uncomfortable with library work outside of its traditional scope.
- While libraries may appear neutral in some aspects of collection development, they should continue to provide outreach and advocacy. Libraries cannot remain neutral when members of the community are oppressed or prejudiced. Libraries should stand up for what is right and just, and librarians should not remain silent when matters of public welfare are at stake.
- Libraries are dynamic organizations that play a vital role in civic engagement. As role models, libraries can ignite activism among community members and promote social change.
- Libraries need to hire staff with the skills and knowledge to use technology and social media ethically. Not everyone is qualified to post online, and posts must align with the library's values.
- Difficulty measuring success. Effective marketing strategies and targeting the right audience are essential for program success.

Thus, the article aims to present how librarians can activate their civic role and detect information breaches.

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Methods

This study explores the novel phenomenon of information disorders circulating in social media as experienced by Filipino librarians and its relationship to their professional identities. Using discourse analysis, the research elucidates the meanings and implications of librarians' attempts to assert their professional identities and civic responsibilities in the face of misinformation and disinformation.

Discourse analysis is a multidisciplinary method embraced in LIS because it allows researchers to analyze the "serious speech acts" of community experts in context to distinguish truth from falsity (Frohmann, 1994). Several studies in library and information science (LIS) have used discourse analysis, including Budd's (2006) work on applied discourse analysis. This type of analysis focuses on both the content of what is spoken and the way it is expressed, including the specific words and phrases used. Conversations in LIS practice, such as reference interviews, provide opportunities for discourse analysis.

Five public librarians from a multi-awarded public library in the Philippines were selected for a pilot study. The head librarian chose the participants, and the interview was conducted online. The interview questions were in English, but the respondents could reply in Filipino (Tagalog). The transcripts were translated into English and uploaded to Nvivo 1.7.1 for qualitative data analysis. The English translations are based on the transcriber-researcher's understanding of the Filipino (Tagalog) responses. All samples were anonymized, and the respondents agreed to have their voice recordings transcribed.

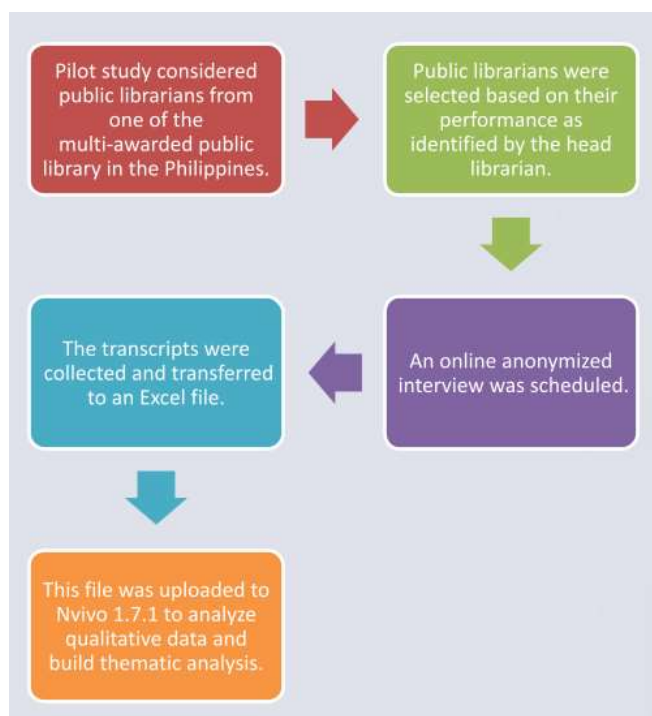


Fig.1. Data Collection Flow

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Results and Discussions

Table 1 summarizes the data of the respondents. The age range is between 25 - 55 with three females and two males. Two finished a master's degree in LIS. Only one librarian has less than five years of experience and the rest have five or more.

Table 1

Profile of Respondents

ID	Age	Sex	Degree	Number of years in public library	When did you start your profession as librarian?
1	45	f	MLIS	10	2001
2	33	m	BLIS	4	2013
3	25	f	BLIS	5	
4	55	f	BLS	7	2000
5	47	m	MLIS	6	2000

Figure 2 visualizes the emerging themes from the interviews with public librarians. The data shows nine themes from research question one and twelve themes from research question two. This figure illustrates how public librarians actively address potential information disorders and their understanding of the phenomenon.

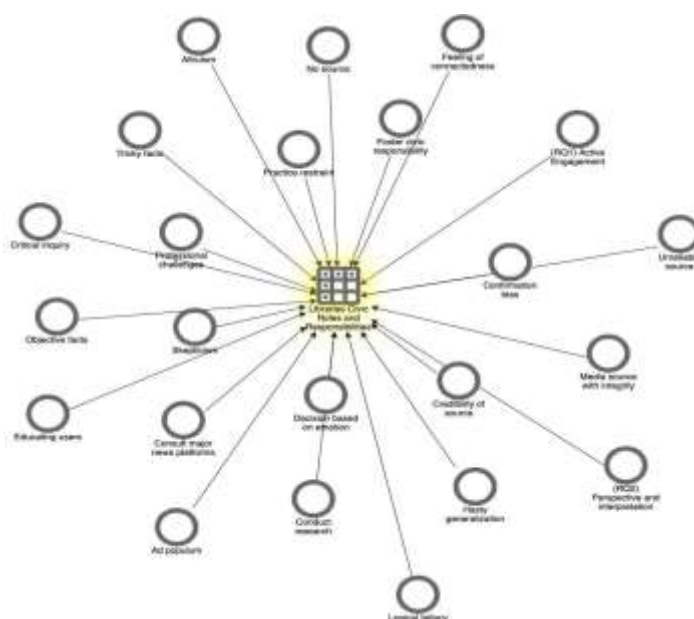


Fig. 2. Emerging Themes

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Table 2

Emerging Themes: Civic Role of Librarians

Name	Description
(RQ1) Active Role	How do librarians activate their civic roles in facing information disorders?
Altruism	The librarian establishes trust and provides friendly and helpful assistance to clients.
Consult major news platforms	The librarian verifies news sources
Critical inquiry	The librarian questions the status quo and challenges conventional wisdom.
Conduct research	The librarian Involves reading, researching, and making meaning through an iterative process of critical inquiry.
Educating users	The librarian performs their educational mission
Feeling of connectedness	The librarian shares information to gain social approval and feel valued by others
Foster civic responsibility	The librarian maintains a balance between advocacy and neutrality
Practice restraint	The librarian knows when to share content
Professional challenges	The librarian is trained and equipped to fulfill their civic roles

The most common themes that occurred were fostering civic responsibility, professional challenges, practicing restraint, and critical inquiry.

Table 3

Emerging Themes: Definition or Construct of Information Disorder Phenomenon

Name	Description
(RQ2) Definition and Construct	How do Filipino librarians define or construct the information disorder phenomenon?
Confirmation bias	People are more likely to accept messages that align with their own opinions.

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Credibility of source	Evaluating the credibility of information is a challenging task, as any given piece of information may be true or false. Ultimately, it is up to the receiver to decide whether they trust the information, and they do this by interpreting its credibility.
Decisions based on emotion	To avoid making wrong decisions, avoid making decisions when your emotions are strong.
Hasty generalization	This occurs when someone makes a hasty judgment based on biased or incomplete information.
Logical fallacy	Using flawed logic to argue certain points in order to persuade others to believe them.
Ad populum	This fallacy uses positive ideals like religion or negative emotions like xenophobia to divert attention from the issue at hand.
Media source with integrity	The extent to which information is truthful or accurate.
No source	Information with no attribution
Objective facts	Unbiased, balanced observation based on facts
Skepticism	Adding further steps before we accept or reject information
Tricky facts	The credibility of controversial information is always in question.
Unreliable source	Unreliable sources, including inaccurate, biased, and false sources.

The most common themes that occurred were skepticism, media sources with integrity, and logical fallacy.

Analysis and Discussion

Extracts from the following themes will be given as examples to analyze how librarians activate their civic roles as well as their construct and definition of information disorders. The most common themes will be highlighted in these analyses.

Civic responsibility

Original language: “More responsible tayo sa pagbibigay information sa clients. More responsible sa paggamit ng social media.” (R5)

Translated text: “We are more responsible in providing information to clients. More responsible in using social media.”

R5 believes that public librarians have a greater responsibility when they provide information to their clients. Is this their way of rekindling civic engagement with the community? Fostering civic responsibility means librarians need to balance their own personal views with their

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professional responsibility to provide information. Librarians are trained to be objective and unbiased in their work. They are also committed to providing access to information for all users, regardless of their own beliefs or values.

Professional challenge

Original language: “You still need to learn, add to your professional skills or capacities para at least, nag eevolve lahat. Pag hindi ka nag evolve, maiiwan ka, maapektuhan ang services.” (R5)

Translated text: “You still need to learn, and add to your professional skills or capacities so at least, everything evolves. If you don't evolve, you will be left behind, services will be affected.”

According to Walter (2008), librarians who can teach effectively are highly valued. While Walter's study focused on academic librarians, the same is likely true for public librarians, who can improve their professional skills by teaching library users. R5 confirms that failing to advance your skills and knowledge can lead to a loss of professional value, and teaching is an expected role for professional librarians. Professional challenges happen when librarians are not ready for their professional responsibilities. Librarians should prepare themselves to gain a deep understanding of information and how to find and evaluate it. This is essential for supporting informed citizenship and civic engagement.

Practicing restraint

Original language: “Bilang isang librarian, wag ka manguna sa pagkakalat ng fake news.” (R1)

Translated text: “As a librarian, don't lead the spread of fake news”

Civic librarianship can be practiced when **a librarian knows when to share accurate content relevant to current events and trends. As an example, a librarian might share a news article about a local election on the library's social media pages.** This is relevant to the library's audience, timely, and from a credible source. This is evidenced when R1 mentioned not to share any information that is unverified.

Critical inquiry

Original language: “Kasi personally, na challenge ako identifying it kahit librarians na po tayo.

May mga times na, I have to check the dates kailan siya pinost. If kailan ang year. How timely ang information na meron.” (R3)

Translated text: “Because personally, identifying it is a challenge for me even though we are librarians. There are times, I have to check the dates when it was posted. If when is the year. How timely is the information presented.”

Librarians are uniquely positioned to challenge the assumptions that are often taken for granted in social media information. For example, librarians might question the way that information is classified or the way that people are taught to use libraries. This critical inquiry behavior is essential for librarians' civic role in dealing with online content, as confirmed by R3.

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Skepticism

Original language: “Pag may nakikita akong post, nag appear sa isang platform di ko agad pinaniiwalaan, I check ko sa Google or website ng TV network or newspaper company kung totoong may ganon, yun talaga ang pinaka best to do to check reliability ng news.” (R1)

Translated text: “When I see a post that appears on a platform, I don't immediately believe it, I check on Google or the website of the TV network or newspaper company if it really exists, that's really the best thing to do to check the reliability of the news.”

Being skeptical means that a librarian has to evaluate the quality and trustworthiness of information. It is essential for making informed decisions about the information we consume and share. In the case of R1, adding further steps before accepting or rejecting information is the best thing to do. Critically evaluating information helps you and others avoid believing in false information.

Media source with integrity

Original language: “May basis siya. Nangyari sya at recorded sya objectively, historically. Hindi sya open sa interpretation.” (R2)

Translated text: “There is a basis. The event happened and it was recorded objectively, historically. It is not open to interpretation.”

The reliability of an information source depends on the context, including who shared it and their reputation. According to R2, if an event happened, is supported by evidence, has not been manipulated, and is presented in a fair and objective way, then the information has integrity, regardless of the source.

Logical fallacy

Original language: “Factual post is anything that contains Bible verses.” (R4)

This answer does not need a translated text. This is a controversial answer in a predominantly religious country. In this context, R4, a devout Catholic believes that any post about God is a factual post. In order not to judge the person, it is just fitting to argue that once a professional interprets a text based on religion, it should be reviewed objectively. When interpreting religious texts, one should always strive to do so in a fair manner, taking into account the full context of the text and the overall message of our religious tradition.

Conclusion

This pilot study provides a preliminary understanding of how public librarians engage with information and filter false information circulating on social media. While the study demonstrates librarians' commitment to civic engagement, it also highlights the professional challenges they face.

Public librarians practice restraint and critical inquiry when faced with information disorders. These can be attributed to their way of being active in civic librarianship. While these librarians think that they need to balance their own personal views to foster civic responsibility, numerous professional challenges arise that impact their professional identity.

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Public librarians rely on sources with integrity. They critically evaluate the source to ensure its credibility. It is important to point out that in the context of religious information, some may interpret it based on their religious belief. Although this study focuses on public librarians, the authors believe that many aspects can be accustomed by all types of librarians.

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YAP J. M.

Університет імені Лоранда Етвеша (Будапешт, Угорщина), Університет системи безперервної допомоги (Лагуна, Філіппіни), Державний університет Західних Вісаяських островів (Ілоіло, Філіппіни), e-mail: jomyap@student.elte.hu, ORCID 0000-0002-7852-1047

HAJDU BARAT A.

Університет імені Лоранда Етвеша (Будапешт, Угорщина), e-mail: hajdu.agnes@btk.elte.hu, ORCID 0000-0002-6774-5440

KISZL P.

Університет імені Лоранда Етвеша (Будапешт, Угорщина), e-mail: kizsl.peter@btk.elte.hu, ORCID 0000-0003-2992-295X

Громадська роль і відповідальність бібліотек: проблеми в умовах інформаційних криз та інформаційних розладів

Мета. Публічні бібліотеки можуть бути сильними прихильниками громадянської активності. Вони несуть відповідальність за відродження громадянського суспільства, освіти та інформування населення. Бібліотеки повинні розширити свою роль за межі фізичного та віртуального простору, щоб сприяти громадянським практикам у боротьбі з фейковими новинами. Бібліотеки можуть використовувати свій вплив, щоб допомогти студентам і бібліотекарям виявляти дезінформацію та застерігати інших від її поширення. Ця стаття має на меті представити, як бібліотекарі можуть активізувати свою громадянську роль і визначити інформаційні порушення. **Методика.** Бібліотекарі публічних бібліотек були опитані за допомогою дискурс-аналізу, щоб визначити інформаційні виклики професії та зрозуміти їхню громадянську роль. **Результати.** Бібліотекарі публічних бібліотек визначили різні способи виконання своєї громадянської ролі, а також сформулювали кілька понять у визначенні інформаційних розладів. **Висновки.** Це пілотне дослідження дає уявлення про те, як бібліотекарі публічних бібліотек взаємодіють з інформацією та фільтрують дезінформацію, що циркулює в соціальних мережах. Суспільна бібліотечна справа очевидна, але бібліотекарі стикаються з професійними викликами. Хоча це дослідження зосереджене на бібліотекарях публічних бібліотек, автори вважають, що багато аспектів можуть застосовуватись до всіх типів бібліотекарів.

Ключові слова: громадянська активність; інформаційні порушення; інформаційна криза; бібліотекарі публічних бібліотек; дискурс-аналіз

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YAVORSKA T. M.

Vasyl' Stus Donetsk National University (Vinnytsia, Ukraine),

e-mail: t.yavorska@donnu.edu.ua, ORCID 0000-0002-6070-7425

Professional Training of Future Librarians at the Vasyl' Stus Donetsk National University

Objective. The purpose of the study is to represent the experience and directions of professional training of future library specialists in a higher education institution, which is based on the integration of education, modern information and communication technologies, and a practical component, which enables the professional realization of specialists in modern library institutions in accordance with the requirements of the information society. **Methods.** The research used a complex of general and special methods of scientific knowledge, namely: the method of document analysis by studying and presenting educational programs for training future specialists regarding their compliance with the needs of the labor market; the method of monitoring the process of training applicants in a higher education institution, its features and adaptation to the requirements of the information society; descriptive method and method of logical presentation of research results. **Results.** The results of the study showed that the organization of professional training, and learning strategies, which are applied at the Vasyl' Stus Donetsk National University at the Department of Management Information Systems, contribute to the successful professional realization of future library specialists in accordance with today's requirements. Graduates of the department are highly qualified and competitive specialists on the labor market. **Conclusions.** The conclusions argue for the relevance of professional training of future specialists in the library field in the context of digital transformations of society. The importance of improving educational programs aimed at training specialists in the library sphere was emphasized.

Keywords: information society; library; librarian; Vasyl' Stus Donetsk National University; professional training

Introduction

Civilizational changes taking place under the influence of informatization, digitization, and the use of artificial intelligence significantly affect all spheres of social life, form the latest social relations, and require the training of highly qualified specialists with the appropriate skills and competencies. Therefore, the education system of Ukraine faces important tasks related to updating the content of the training of future specialists, the organization and technology of the educational process, and ultimately the transformation of the entire education system.

Higher education in Ukraine is being modernized and integrated into the world's educational and scientific space. In 2022, the «Strategy for the Development of Higher Education in Ukraine for 2022-2032» (Cabinet of Ministers of Ukraine, 2022) was approved, which defines the directions of the development of the higher education system at the current stage of the development of society and the country's economy, its main characteristics, which must be formed by 2032. Definition of problems that exist in the system of higher education. It is noted that the main content of higher education is determined by the standards of higher education of the new generation, which are based on the competency approach.

Modern conditions require professionals with high professional competence. Today, expertise is defined by the ability to adapt to changes and needs of the labor market, to make decisions quickly, and to learn throughout life. Training a specialist of this level is the main task for higher education.

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In the conditions of the information society, the problem of professional training of future specialists in the information field, in particular library specialists, is relevant, where it is important to focus on the formation of the set of competencies of the future specialist.

Today dictates new requirements for library staff, including the ability to navigate large information flows, analyze and summarize information, think critically, etc.

It is obvious that there are a lot of changes and challenges connected to library work in the networked society. Existing information chains and distribution models are disrupted and individual information practices change. The keys to future professionals seem to be to understand trends and predict consequences. Technological change is at the forefront leading to

- new information behavior (connected, interactive, fragmented)
- new research practices and processes (e-science, scholarly communication)
- new information provision models (new actors, open access, expensive e-publications)
- new digital collections (research data, e-publications)
- new library services (integrated into learning and research)
- new library professional skills that support the above development and change (Widén & Kronqvist-Berg, 2014).

Modern educational and professional programs for training students of higher education in specialty 029 «Information, library and archival affairs» should be aimed at the formation of such competencies.

The purpose of the study is to highlight the experience and directions of professional training of future library specialists in a higher education institution, which is based on the integration of education, modern information and communication technologies, and a practical component, which enables the professional realization of specialists in modern library institutions in accordance with the requirements of the information society.

The problem of professional training of future specialists to work in modern libraries is relevant among scientists, theoreticians, and practitioners of the library sphere. The scientific discourse highlights a complex of issues related to the development of modern forms of the educational process, the introduction of innovative methods, the adaptation of distance learning tools in the educational process, etc. In the scientific publications of N. Bachynska, L. Savenkova, A. Chachko, and others theoretical and methodical principles of professional training of specialists in the library and information field were studied; I. Guziy, Yu. Kozlovskiy, N. Mukan investigate the specifics of professional training of specialists in information, library, and archival affairs based on the application of an integrative approach; S. Chukanova, A. Gumenchuk, O. Bashun, V. Pashkova and others studied general trends, specifics of organizational and content transformations of higher library education in the USA; A. Plakhtiy, V. Zagumenna and others analyzed the professional training of library specialists in the context of the development of electronic government.

Taking into account the fact that in recent years certain changes have taken place in Ukraine regarding the management of higher education, accreditation of educational programs, the content of education in general, we consider it relevant to highlight the experience of training future specialists in the information and library sphere in the context of the further transformation of bachelor's and master's educational programs, their improvement, respectively to the requirements of the digital society.

Methods

The research results were obtained thanks to the application of a complex of general and special methods of scientific knowledge. This is how the method of document analysis was used,

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namely the study and presentation of educational programs according to the training levels of future specialists in the specialty 029 Information, library, and archival affairs at the Vasyl' Stus Donetsk National University, substantiation of their compliance with the needs of the labor market. The method of observing the process of training applicants, in particular observation of lectures, practical classes, practices, and other aspects of the educational process made it possible to reveal its peculiarities and adaptability to modern requirements. The descriptive method and the method of logical presentation of the research results presented the features of the process of training future specialists in the library field in the institution of higher education.

Results and Discussion

The information society is characterized by the fact that information, knowledge, and technologies play a major role in the development of the economy, science, culture, and other spheres of society. We will present several arguments regarding the importance of updating professional training for professional implementation in new conditions:

1. Development of technologies: The information society depends on the development and implementation of the latest technologies. Specialists with a deep understanding of their field can create and improve technologies that contribute to the further development of society.

2. Competitiveness: The requirements of the information society are changing rapidly, and only well-trained specialists will be able to meet these changes. Companies and organizations need qualified specialists who can adapt to new conditions and develop innovative solutions.

3. Ensuring the quality of information: In the information society, it is important to ensure the quality and reliability of information. Professionals can analyze, verify, and interpret information from various sources, which is key to making informed decisions.

4. Creation of new knowledge: Scientific progress is the basis of the development of society. Specialists who have received deep professional training can conduct research and create new knowledge, which contributes to scientific and technological evolution.

5. Development of civic consciousness: Modern specialists also play an important role in the education of civic consciousness, popularization of true information, and rejection of misinformation. This contributes to the preservation of democratic values and the development of civil society.

6. Interdisciplinarity The information society requires cooperation between different fields of knowledge. Specialists with a wide range of knowledge and skills can work more easily in cross-industry environments.

And today, every field of human activity is changing and needs just such specialists.

The socio-cultural sphere in general and libraries, as socio-cultural institutions, under the influence of changes in society, evolve and integrate into the network environment, both the social role of libraries and the role of the library specialist in a modern library are changing. Knowledge, abilities, skills, and target instructions of specialists who are well versed in the latest technologies, capable of producing original ideas, are decisive factors affecting the successful functioning of the institution, the quality of the provided information, and the level of service to readers. It is such a specialist who can implement the concept of intellectualization of the library profession and provide high-quality information and bibliographic service (Plakhtii, 2018).

Transformations of the socio-cultural sphere in general and the development of the potential of libraries directly depend on a professional who creatively and fully uses all professional opportunities. Therefore, the professional training of future specialists for work in

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libraries, who are ready to make modern changes in the library industry, is a task for higher education institutions that train specialists in this field.

We will cite several aspects to justify the importance of updating the professional training of future library specialists in the context of the requirements of the information society:

1. Effective information management. In the modern information environment, the volume and variety of information is growing. Library specialists systematize, store, and provide access to information. They are key figures for effective management of knowledge and resources.

2. Dissemination of true information. In conditions of wide access to information, the role of library specialists in popularizing and disseminating reliable information is extremely important. They help users separate fact from myth, identify misinformation, and provide access to authoritative sources.

3. Development of information skills. Library professionals not only provide access to information, but also educate users to effectively search, evaluate, and use diverse resources. This is extremely important for digital literacy in the information society.

4. Development of reading culture. In the context of rapid information security, the culture of reading is undergoing changes. Library professionals contribute to the development of this culture by helping to select the most valuable from texts and developing critical thinking skills.

5. Promotion of scientific research. Library specialists play an important role in supporting scientific research by providing access to relevant information resources. Librarians are at the forefront of supporting researchers and facilitating their access to information. They help researchers find the necessary materials and sources for their work.

6. Cultural development. Libraries are centers of cultural life, where lectures, literary events, exhibitions, and other cultural events are held. Library specialists contribute to the development of cultural values and the expansion of the cultural horizons of users.

7. Preservation of cultural heritage. Libraries play an important role in preserving cultural heritage and archives. Library professionals help preserve and digitize valuable documents, ensuring their availability for future generations.

The listed aspects show how important the role of library specialists is in the modern information society. They are responsible for providing access to quality information, developing information skills, and supporting the cultural and scientific development of society.

An analysis of the market for the provision of educational services for the training of future library specialists showed that currently more than fifty institutions of higher education in Ukraine train specialists in the specialty 029 «Information, library and archival affairs».

Vasyl' Stus Donetsk National University (Vasyl' Stus Donetsk National University, 2023) is one of a number of institutions of higher education in Ukraine that train specialists in the socio-cultural and information spheres, as well as future library specialists. It should be noted that Vasyl' Stus DonNU has been a displaced university since 2014 due to the armed aggression of the Russian Federation. The educational institution actually started building its activities in the Vinnytsia region from scratch, because after moving to Vinnytsia, the university faced a number of problems, including a lack of necessary infrastructure for educational activities, insufficient premises and classrooms for conducting classes, a lack of technical resources and equipment, network infrastructure, no internet connection, etc.

During the years of exile, the Vasyl' Stus Donetsk National University:

- gradually restored the material and technical base, which allows for the educational process and scientific activity to be carried out today;
- preserved and qualitatively improved the teaching staff;
- began to restore positions lost due to relocation in national and international rankings;

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- took and steadily occupies a leading position among local competitors;
- created an unprecedented for the region network of partnerships and a new quality of relations between the higher school, the authorities, and the community for the implementation of joint socially useful projects and affairs.

Today, Vasyl' Stus DonNU is not only the only classical university in the Vinnytsia region, but it is also a powerful educational center of the Central Ukrainian region, a reliable partner for scientific and educational institutions, government, community and business, a comfortable environment for development, life, study, work (Vasyl' Stus Donetsk National University, 2023).

The Department of Management Information Systems (MIS) of the Faculty of Information and Applied Technologies of Vasyl' Stus DonNU trains future specialists in information, library and archival affairs. The department is a graduation for students of specialty 029 «Information, library and archival affairs».

After graduation, graduates of the Department of ISU have a formed set of knowledge, abilities, and skills that allow them to work in various organizations, enterprises, and institutions, including libraries.

Education takes place at two levels of education – bachelor's and master's (see Figure 1).

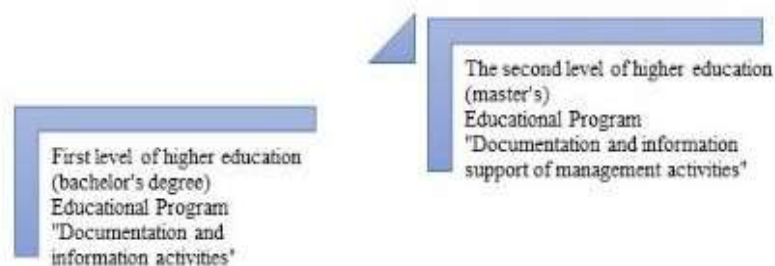


Fig. 1. Training of Specialists at the Department of Management Information Systems by Degrees and Levels of Education

Preparation for the bachelor's degree is carried out in accordance with the Educational Program «Documentation and information activities», upon completion of which graduates will receive the educational qualification of bachelor in information, library and archival affairs.

Educational Program meets the Standards of Higher Education of Ukraine: first (bachelor) level, the field of knowledge 02 Culture and art, specialty 029 «Information, library and archival affairs», which was approved and put into effect by the Order of the Ministry of Education and Science of Ukraine dated 12.12.2018 No. 1378 (Ministry of Education and Science of Ukraine, 2018).

An important focus of this Educational and Professional Program is its clear focus on thorough training in the possession and use of electronic processing and data visualization tools by students of higher education, provision of conditions for the formation and implementation of individual educational trajectories by applicants due to the variability of practice bases, subject areas of coursework and qualification work.

The goal of the Educational Program is the formation of a harmoniously developed personality, formation as an individual, a true patriot, and a qualified specialist in the field of information, library and archival affairs, capable of solving complex specialized tasks and practical problems in the field of information, library and archival affairs and realizing the value paradigm society that combines universal and national values, consolidates the Ukrainian nation and promotes Ukraine in the world as unbreakable, universal, invincible.

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Among the important goals of training under this Educational Program are: training specialists capable of solving complex specialized tasks and practical problems in the field of information, library and archival affairs.

Educational Program provides for the formation of competencies and program learning outcomes (see Figure 2).



Fig. 2. The Structure of Professional Training in Accordance with the Standard of Higher Education

The formation of integral competence is singled out as the ability of future specialists to solve complex specialized tasks and practical problems in the field of information, library and archival affairs or in the learning process, which involves the application of provisions and methods of information, library and archival affairs and is characterized by the complexity and uncertainty of conditions.

To work in library institutions, it is necessary to develop both general and special competencies that determine the ability to socialize, conduct professional and/or further educational activities. General competencies are important for the successful further professional and social activities of the acquirer and for his personal development. Among the general ones, we will single out the following: skills in using information and communication technologies; the ability to communicate in a foreign language; the ability to search, process, and analyze information from various sources, etc.

- Among the special competencies, the following are important:
- Ability to select, analyze, evaluate, systematize, monitor, organize, store, distribute, and make available information and knowledge in any format.
- Ability to use methods of systematization, search, storage, and classification of information for different types of content and media.
- Ability to use modern applied computer technologies, software, network, and mobile technologies to solve specialty tasks.
- The ability to analyze patterns of development, document-information flows, and arrays, as an artificially created subsystem of social communications.
- Ability to maintain business communication with all subjects of the information market, users, partners, authorities and management, and mass media.

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- The ability to implement innovative technologies to produce information products and services, to improve the quality of information services for users of information, library and archive institutions.

- Ability to design and create information systems, resources, products and services.
- Ability to use PR and other applied social and communication technologies in the conditions of modern information technology infrastructure.

- Ability to apply the principles of designing databases, information systems, social and other computer networks, electronic libraries, and archives.

- Ability to use and improve automated information and search systems, organize electronic libraries and archives.

- Ability to create, fill, and ensure the functioning of websites and web communities on the Internet.

The key trends of the educational process at the current stage are «usefulness and practicality» through research and real projects; «active learning», which includes a wide range of interactions between the teacher and the student – from discussing situational exercises in the classroom to interactive communication using the Internet; application of distance learning.

The department of MIS constantly carries out significant work on improving teaching methods: situational approach, simulation exercises, etc. Electronic summaries of lectures, practical tasks, methodical recommendations, and tasks for tests and exams have been developed for almost all disciplines.

Active methods are used in the learning process:

- game techniques — analysis of specific situations, simulation exercises, situational tasks, and business games;
- management pieces of training – the «brainstorming» method, questionnaires, testing.

Teaching methods of the group and individual creative search are carried out by applying situations or «cases». Students of higher education are offered a set of situations that differ in volume, structure of the proposed material, degree of saturation of information, nature of presentation of problems, and degree of uncertainty of the solution, which allows them to formulate different goals of «cases»: to teach students to «sort» information to solve a given problem, to navigate in risk conditions, identify key problems, form action programs.

As a result, the use of interactive technologies, problem-based learning, game technologies, and the case method in the educational process provides an opportunity to effectively achieve the main goal of training future specialists in the specialty 029 «Information, library and archival affairs» defined by the state standards of higher education, who are able to solve complex problems specialized tasks and practical problems in the field of information, library and archival affairs.

Graduates with a Bachelor's degree can continue their studies at the master's degree and obtain the Master's degree in information, library and archival affairs. Training is conducted in accordance with the Educational Program «Documentation and information support of management activities», which was developed in accordance with the Standard of Higher Education of Ukraine: second (master's) level, field of knowledge 02 Culture and art, specialty 029 «Information, library and archival affairs», which was approved and put into effect by the order of the Ministry of Education and Science of Ukraine dated May 24. No. 728 of 2019.

The purpose of this Educational Program is the formation of highly qualified specialists in the field of information, library and archival affairs, who are able to provide documentation and information support for management activities and to be aware of the value paradigm of society,

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which combines universal and national values, consolidates the Ukrainian nation and promotes Ukraine in the world as an indomitable, cathedral, invincible.

Analyzing educational programs in specialty 029 «Information, library and archival affairs», we note that each of them is unique. Uniqueness primarily depends on the strategy of the institution of higher education, which has a set of different types of resources. The uniqueness of this Educational Program at Vasyl' Stus DonNU is evidenced by additional features that distinguish it from other similar programs:

- possession and use by students of higher education of information management technologies, in particular documented information.
- formation and forecasting of options for operational and strategic management decisions;
- formation of skills and abilities in information confrontation and application of modern methods of protection of management information in computer systems and networks;
- use of information and search systems by students of higher education and promotion of information resources on the Internet.

The MIS department uses modern approaches to teaching and learning, namely: student-centered, problem-oriented, practice-oriented teaching and learning with mandatory elements of self-study, which allow students to develop important competencies. Among the general competencies of this Educational Program, we highlight the following:

- Ability to abstract thinking, analysis, and synthesis.
- Ability to generate new ideas (creativity).
- Ability to identify, pose, and solve problems.
- Ability to motivate people and move towards a common goal.
- Ability to make informed decisions.
- Ability to search, process, and analyze information from various sources.

The formation of special (professional, subject) competencies is important for successful professional realization and/or further educational activities in a specialty, including:

- Ability to form an effective management system for information, library and archival activities.
- The ability to organize work and manage information and analytical structural units at enterprises, organizations and institutions, in particular in archival and library ones.
- Ability to apply technologies and procedures of analytical and synthetic processing of scientific and management information.
- Ability to track development trends in the subject area by analyzing information flows and arrays.
- Ability to apply computer technologies in order to improve professional activity and understand the principles of designing and functioning of automated databases, semantic web, web services, and social media.
- Ability to use knowledge of scientific principles and methods of archival and library science, strategies, models, standards, and methods of development and administration of library and archive systems in professional activities.

Teaching is carried out in the form of traditional and interactive lectures, laboratory work, seminars, practical classes using the method of small groups, individual classes, practice sessions, consultations with teachers, business games, and e-learning using specialized electronic tools: Moodle system, Microsoft Teams applications, Microsoft SharePoint, etc.

At Vasyl' Stus DonNU, students of higher education are provided with the formation of an individual educational trajectory through a free choice of academic disciplines. In particular, an

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individual educational trajectory can be implemented by choosing a specific certificate program introduced at the university, and you can also choose disciplines from other educational programs, a list (course catalog), taking into account your own needs and interests in future professional activity.

Considering the requirements of the information society, special attention is paid to the information component in the process of training at both the bachelor's and master's levels. In the structure of the formation of professional competencies of future specialists, informational competence occupies an important place, the mastery of which means a qualitatively new level in their professional training and further professional development. There is a belief that graduates of specialty 029 «Information, library and archival affairs» are, first of all, information workers who know how to work with information – collect, process, create, store, and distribute, using modern digital technologies.

The professional training of future specialists should provide not only high-quality theoretical training but thorough practical training, which is an integral part of the educational process and because of which a direct connection between theoretical training and the acquisition of practical skills by higher education students is realized. It is important to note that the bases of practical training for candidates of the department, among other enterprises and organizations, are public, special libraries of the city of Vinnytsia, such as: V. Otamanovsky Vinnytsia Regional Universal Scientific Library, Scientific Library of the National Pirogov Memorial Medical University, Vinnytsia etc.

In terms of transparency and availability for review, educational programs are published on the official website of the university in full in free access for all interested parties: educational institutions, graduates, and stakeholders. Educational programs are constantly being improved, in particular, regarding their content, the list of educational components, their volumes, etc. Students of higher education, graduates, and stakeholders are involved in the improvement (<https://fiat.donnu.edu.ua/kafedra-isu-2/#os>).

Graduates of the department have a high level of professional knowledge aimed at their implementation in library institutions. Thus, graduates of the Department of MIS work in various libraries of the city, such as V. Otamanovsky Vinnytsia Regional Universal Scientific Library, Scientific Library of Vinnytsia National Technical University, Institute of Culture «Vinnytsia City Centralized Library System» etc.

It is important to note that during 2022-2023 Vasyl' Stus Donetsk National University successfully passed all stages of the accreditation procedure of educational and professional programs at the first (bachelor) and second (master) levels and received Certificates of accreditation of the National Agency for Quality Assurance of Higher Education for a period of 5 years, which confirms the high-quality training of students of higher education.

In the context of the internationalization of higher library and information education in Ukraine, it is important to study the experience of training future library specialists abroad to determine directions for improving domestic educational programs. It should be noted that European systems for training librarians with higher qualifications have some common and distinctive features, depending on the higher education system of an individual country.

For example, the integration model of higher library and information education in France has a complex and multi-level organizational structure. Education in French higher education institutions is organized in three stages - cycles. The first lasts two years, during which 54% of the entire contingent of university students acquires a general higher education, refines professional orientation, and receives the first academic qualification (intermediate DEUG diploma). The second cycle is a cycle of deepening and professional training (2–3 years) and is divided into two

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stages with the provision of *licence* and *maîtrise*. The third cycle is specialized and prepares for the start of serious scientific research. Admission to it is by competition, and the duration of study is one year. That is, after general scientific studies at the college, which is a mandatory condition for obtaining a full higher education, the applicant studies for 2 years and receives a bachelor's degree. The next year of study gives French students the opportunity to obtain a licentiate degree. Master's programs are designed for one year of study.

Currently, of the country's 45 universities that train information specialists, most offer educational programs that are integrated in the content. Documentary librarians are trained not only in specialized institutions of higher education, such as the National Institute of Documentation Technologies, but also in the departments of information and communication studies of humanities faculties of classical universities (Sorbonne University, Paul Valéry University, and others), in branch institutes (technological, economic, political research and others). A flexible system of higher education enables students to implement an individual learning trajectory and alternate it with practical activities after obtaining a certain educational level (Humenchuk, 2022).

For example, the National School of Libraries and Information (Enssib), an associate member of the University of Lyon, trains information, documentation, and library science managers for the public and private sectors through a combination of initial and continuing education. The work and study program is fully integrated into the Enssib pedagogical model, where practical experience and academic knowledge interact and complement each other. This teaching method is also in line with the school's ongoing concern to offer the best professional integration for students.

Based on a bachelor's degree, students can obtain a double master's degree in two years of study: a master's degree in information and library sciences and a master's degree in the field of digital humanities.

In the first year of study, students form a theoretical base in the field of library science, information, and documentation, and in the second year, they deepen their professional specialization, choosing to study in one of the following educational master's programs:

- Master 2 Digital Archives (ARN)
- Master 2 Library and Documentation Policy (PBD)
- Master 2 Scientific and Technical Information (SIBIST) (Enssib, n.d.).

A mandatory component of the professional training of masters in information and library sciences at this educational institution is practical training aimed at in-depth professional integration of education seekers, immersion in the professional environment. In addition to working in a certain document and communication institution according to the study profile (publishing house, archive, library, documentation service), students have the opportunity to undergo a long-term internship (from 4 to 6 months) in university libraries, business structures, specialized documentation centers of European countries, Canada, USA. This allows you to gain professional experience and significantly increases the employment opportunities for school graduates.

Conclusions

Therefore, in the context of the growing influence of digital technologies and wide access to knowledge, the issue of professional training of future specialists in the library field becomes especially relevant. Specialists in the library sphere in the information society are becoming key actors in providing quality information, developing cultural values and skills necessary for digital literacy in the information environment. They act not only as intermediaries in access to knowledge

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but also as mentors who teach how to search, analyze, and use information effectively. Therefore, the professional training of future specialists in the library field must consider modern trends and requirements of the information society. Information skills, critical thinking, the ability to work with various sources and technologies are the key components that will help library professionals respond to modern challenges.

Library education and professional training of future specialists of library institutions is an important component in the context of the modern digital transformations of society. Effective professional training of future specialists in the library field is of decisive importance for the development of the information society and for ensuring quality access to knowledge and cultural heritage. An integral part of this process is the promotion of innovation, the development of creative approaches, and the formation of critical thinking, competent, and responsible specialists who can meet the challenges of the information society.

In this context, it is important to improve educational programs aimed at training library specialists, considering the interdisciplinary nature of the information environment.

The study of foreign experience of the best practices of training future specialists in the information and library sphere provides an opportunity to identify the features of similar foreign programs, with the aim of introducing them into the system of training specialists in the library sphere of Ukraine. Thus, double degree programs with opportunistic specializations that are in demand on the country's information market, in-depth practical training of future specialists in document and information institutions, the possibility of dual education at the master's level, international mobility of students - all this is useful for borrowing by the Ukrainian system training of library and information specialists in specialty 029 "Information, library, and archival affairs".

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YAVORSKA T. M.

Донецький національний університет імені Василя Стуса (Вінниця, Україна),

e-mail: t.yavorska@donnu.edu.ua, ORCID 0000-0002-6070-7425

Професійна підготовка майбутніх фахівців бібліотечної сфери у Донецькому національному університеті імені Василя Стуса

Мета дослідження – репрезентація досвіду та напрямів професійної підготовки майбутніх фахівців бібліотек у закладі вищої освіти, що базується на інтеграції освіти, сучасних інформаційно-комунікаційних технологій та практичної складової, дає змогу професійної реалізації фахівців в сучасних бібліотечних установах відповідно до вимог інформаційного суспільства. **Методика.** У дослідженні використано комплекс загальних та спеціальних методів наукового пізнання, а саме: метод аналізу документів шляхом вивчення та представлення освітніх програм підготовки майбутніх фахівців щодо їх відповідності потребам ринку праці; метод спостереження за процесом підготовки здобувачів у закладі вищої освіти, його особливостей та адаптації до вимог інформаційного суспільства; описовий метод та метод логічного викладу результатів дослідження. **Результати** показали, що організація професійної підготовки, стратегії навчання, які застосовуються у Донецькому національному університеті імені Василя Стуса на кафедрі інформаційних систем управління сприяють успішній професійній реалізації майбутніх фахівців бібліотек відповідно до вимог сьогодення. Випускники кафедри є висококваліфікованими та конкурентоздатними фахівцями на ринку праці. У **висновках** аргументовано актуальність професійної підготовки майбутніх фахівців бібліотечної сфери в контексті цифрових трансформацій суспільства. Наголошено на важливості вдосконалення навчальних програм, спрямованих на підготовку фахівців бібліотечної сфери.

Keywords: інформаційне суспільство; бібліотека; бібліотечний працівник; Донецький національний університет імені Василя Стуса; професійна підготовка

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UDC [37.018.43:004]:02**CALVO C. J. B.**Polytechnic University of the Philippines (Manila, Philippines),
e-mail: cathcalvo18@gmail.com, ORCID 0009-0008-9905-1743**MARCELO V. A. P.**Polytechnic University of the Philippines (Manila, Philippines), e-mail: xvaliantx77@gmail.com,
ORCID 0009-0002-9055-7891**PARIÑAS P. D.**Polytechnic University of the Philippines (Manila, Philippines),
e-mail: paolo.parinas@gmail.com, ORCID 0009-0007-7589-9873**REGALA M. R. G.**Polytechnic University of the Philippines (Manila, Philippines),
e-mail: michalregala@gmail.com, ORCID 0009-0004-0255-5912**TELEMBAN C. M.**Polytechnic University of the Philippines (Manila, Philippines),
e-mail: cjtelemban15@gmail.com, ORCID 0009-0009-9947-8752**VILLAFLOR M. D.**Polytechnic University of the Philippines (Manila, Philippines),
e-mail: mickeyvillaflor@gmail.com, ORCID 0009-0003-1202-6515**MANABAT A. R.**Nazarbayev University (Astana, Kazakhstan), Polytechnic University of the Philippines (Manila, Philippines), e-mail: april.manabat@nu.edu.kz, armanabat@pup.edu.ph,
ORCID 0000-0003-1720-5910**LIRIO V. A.**Polytechnic University of the Philippines (Manila, Philippines), University of Rizal System (Binangonan, Rizal, Philippines), e-mail: vivian.lirio@gmail.com,
ORCID 0009-0002-6585-7307**JULIAN R. R.**Polytechnic University of the Philippines (Manila, Philippines), e-mail: rrjulian@pup.edu.ph,
ORCID 0009-0003-1305-2889**Impractical Practicum? Analyzing the Impact of Online Work Immersion among the Bachelor of Library and Information Science (BLIS) Students amidst the Pandemic¹**

Objective. This study aims to document the impact of online work immersion among Bachelor of Library and Information Science (BLIS) students at the Polytechnic University of the Philippines. The study highlighted the experiences of BLIS students who underwent online work immersion during the school year 2022-2023 including their challenges and difficulties in completing their work immersion hours. **Methods.** This research study employed

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a descriptive quantitative approach to document the impact of online work immersion among Bachelor of Library and Information Science (BLIS) students of Polytechnic University of the Philippines (PUP) during the School Year 2022-2023. The researchers used purposive non-probability sampling in gathering the respondents. A total of 63 BLIS 4th-year students who were enrolled in Library Practice subjects agreed to participate in the study and were asked to rate 40 statements using a Likert Scale (1- strongly disagree and 5 - strongly agree). These statements were used to describe their overall experiences as well as the challenges they encountered with the online work immersion. The statements highlighted their difficulties, their coping mechanisms, as well as their readiness to perform professional library work. The researchers employed statistical methods such as frequency distribution, percentage, and weighted means to interpret and analyze the data gathered and provide more compelling results for the study. **Results.** The study revealed that most of the students experienced some challenges in terms of distance learning and connectivity issues. In addition, the said challenges were overcome through various coping mechanism strategies such as establishing rapport with workmates as well as learning and researching the given tasks in advance. **Conclusions.** The study also revealed a high preference for onsite practice training among students in terms of acquiring more knowledge and skills in the actual workforce.

Keywords: online work immersion; LIS students; pandemic; Philippines

Introduction

Connecting theories and knowledge learned inside the four walls of the classroom to the actual real-world scenario is the quintessential way to see the effectiveness of the learning process. Experiential learning allows learners to apply their knowledge and skills to the actual workplace, giving them a glimpse of professional life after completing a degree. Tanaleon, Abang, Alarcon, Camino, Versoza, and Bernales (2020) noted that work immersion or on-the-job training was indeed a requirement before completing any degree. By allowing learners to get these hands-on experiences, they will have a better understanding of what it is like to be in the actual work environment.

One such way to have such experiential learning is through work immersion. Work immersion has been integrated into the curriculum to allow the learners to be familiar with the work environment and apply their skills and competencies in their specific professions (Peñaredonda, 2023). Walczyk and Schultz-Jones (2017) highlighted how work immersion can help library science students determine and apply the appropriate skills and knowledge as well as establish a career path that suits their skills and knowledge. In the Philippines, the Department of Education through its Department Order (DO) 40, Series 2015, Guidelines for K to 12 Partnership stressed the importance of work immersion as part of the Partnership-Building Activities (BPA) to achieve student success (Republic of Philippines Department of Education, 2015). This denotes the importance of work immersion to expose the learners to the actual, real-life workplace. Acut, Curaraton, Latonio, and Latonio (2021) also noted that DepEd implemented work immersion as an aid in the shortcomings for future job careers. In addition, the Commission on Higher Education (CHED) also released memorandum orders that aim to monitor and regulate student internship programs for all programs in the Philippines (CHED Memo. Order (CMO) No. 23, s. of 2009; CHED Memo. Order (CMO) No. 104, s. of 2017) ensuring that student internships should be implemented in higher education institutions (HEIs) to prepare students for their future job openings. During the onset of the pandemic, CHED also released the guidelines on the implementation of flexible learning (CHED Memo. Order (CMO) No. 04, s. of 2020) which also include on-the-job trainings (OJT) and practicum highlighting flexible learning and teaching options, strategies, approaches, and modalities to ensure continuous knowledge transfer. Even having the memorandum, with the upsurge of the pandemic, doing work immersion came as a challenge to learners, instructors, and industries alike.

The value of work immersion in the Philippine setting has been evident in a number of studies. The study conducted by Peñaredonda (2023) revealed the effectiveness of work immersion

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among 54 Grade 12 technical-vocational-livelihood (TVL) students of Santa Cruz, North Cluster in Marinduque during the pandemic which includes getting positive ratings in terms of their technical, interpersonal, behavioral, and entrepreneurial skills. However, their communication skills have been the least mastered skills. In addition, students encountered problems such as resource problems and skills execution. In a similar study, Mapalo and Sermona (2022) described the challenges encountered by the Grade 12 TVL students and teachers in Iligan City such as difficulty in work immersion, learning modalities, and execution. While both studies highlighted the importance of work immersion, the setbacks and drawbacks of implementing it during the pandemic became very obvious.

The success of online immersion heavily depends on internet use. Del Rosario (2021) stated that a stable internet connection was essential for trainees in an online work immersion. Asio, Gadia, Abarintos, Paguio, and Balce (2021) added that connection instability added stress to the students as it would delay the tasks due to unstable internet connection. Both studies highlighted how their productivity and work performance have been heavily affected due to slow internet connection. Though the Philippines might be considered highly connected, stable internet connections seem to be a problem. Distance and connectivity issues should be considered as essential in making work immersion possible. In addition, connectivity issues should be addressed on a national level in which the government is expected to take a more proactive response in ensuring accessible and stable internet connection across the country.

Given that distance and connectivity issues were considered an integral part of the realization of online work immersion during the pandemic, it is understandable and valid if students feel unsatisfied, unsure, or unconfident with what they were doing. This was also seen as a barrier to ensuring productivity during online work immersion. Having a sense of self-awareness through self-assessment appears to be a good strategy to address such issues. The study of Insorio, Manaloto, and Lareña (2021) revealed that students experience specific difficulties in answering assigned tasks and a lack of parental support. Many students have different careers they want to pursue and work immersion entails hands-on training or work simulation wherein students apply their skills and learn about their chosen field. This was also further outlined by AlGhamdi (2022) on how learners' competencies, practical experiences, and acquired information were enhanced through work immersion and its necessity to consider relevant challenges. These studies relate to students' self-assessment during work immersion to help them assess their quality of work and examine if they learn something from it.

To overcome such challenges and difficulties faced during work immersion, learners were also coming up with various coping mechanisms. Covita and Torres (2016) noted students' coping strategies were problem and emotion-focused. This includes assertiveness and help-seeking, skills enhancements through observation, interaction, and practice, and conflict mediation to address problems; while seeking emotional and social support, cognitive reappraisal, having leisure activities, and venting, ignoring, and postponing to address emotion-focused challenges name a few. Other studies by Shaketange, Kanyimba, and Brown (2017) and Rodríguez-Artura and Meseguer-Artola (2018) also tackled the different challenges of doing internships in an online environment which also highlights similar coping mechanisms to address such challenges.

Similar to other professions, library and information science (LIS) also includes work immersion or on-the-job training (OJT) in the curriculum. As stated in the Commission on Higher Education (CHED) Memorandum Order (CMO) No. 24, Series of 2015 Section 8, all students taking up a Bachelor in Library and Information Science should undergo a minimum of 400 hours of immersion to different types of libraries through the supervision of practicum coordinator. The required number of hours is divided into Library Practice 1 and Library Practice 2 courses which

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should be taken over two semesters. This guideline is applicable to all state universities and colleges (SUCs) offering the same program. In addition, students are also required to submit journals, portfolios, and proposals based on their observations to the assigned area.

The Department of Library and Information Science of the Polytechnic University of the Philippines has Library Practice subjects which are work immersion subjects specifically at the Ninoy Aquino Library and Learning Resource Center (NALLRC) located inside the PUP Mabini Campus. This subject exposes them to real-life actual work experiences in the librarianship field allowing them to apply their knowledge and skills learned from the four walls of the classroom.

Objectives

Understanding the importance as well as the challenges of conducting work immersion online, this study aims to document the impact of online work immersion among 4th year Bachelor of Library and Information Science (BLIS) students at the Polytechnic University of the Philippines who were enrolled in the Library Practice subjects from the school year 2022-2023. Specifically, it intends to determine the challenges they encountered as well as their coping mechanisms relevant to the completion of the online work immersion. This study also identified the students' level of readiness to perform in a professional library. Lastly, this undertaking also aims to suggest improvements in the work immersion subject of the Department of Library and Information Science of the Polytechnic University of the Philippines.

Methodology

This research study employed a descriptive quantitative approach to document the impact of online work immersion among Bachelor of Library and Information Science (BLIS) students of Polytechnic University of the Philippines (PUP) during the School Year 2022-2023. The researchers used purposive non-probability sampling in gathering the respondents. A total of 63 BLIS 4th-year students who were enrolled in Library Practice subjects agreed to participate in the study and were asked to rate 40 statements using a Likert Scale (1- strongly disagree and 5 - strongly agree). These statements were used to describe their overall experiences as well as the challenges they encountered with the online work immersion. The statements highlighted their difficulties, their coping mechanisms, as well as their readiness to perform professional library work. The researchers employed statistical methods such as frequency distribution, percentage, and weighted means to interpret and analyze the data gathered and provide more compelling results for the study.

Results and Discussions

Profile of the Respondents

The respondents of the study were the two sections of 4th year BLIS students who were enrolled in the subject Library Practice during the pandemic. A total of 63 respondents participated in the study with age ranges from 21 to 25 years old and with females (74.6%) dominating the group.

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Connectivity and Distance Issues During Online Work Immersion

As the success of online work immersion depends heavily on the use of a stable internet connection, it is essential to understand how it affects their productivity to perform the given tasks. Table 1 below shows statements used to gauge how connectivity and distance issues impact their productivity and performance during online work immersion. The table below shows that most of the students can connect with others in online discussion forums and meetings in addition to being able to go to work on time since they do not really have to travel physically to work. On the contrary, few students felt that they were able to perform the task well without any convenience and that distance learning works better than the typical or traditional mode of learning. This further signified that while some students think of connectivity or distance issues as an advantage, some also find them as a challenge. In addition, this also emphasized the relevance of immersion to the students' connectivity as they become responsible and learn interpersonal relationships with their co-workers. They learned about work ethics which is essential to the workplace. Indeed, through work immersion, the students could distinguish the importance of distance that molds their behavior and knowledge.

Table 1

Weighted Mean and Standard Deviation on Distance and Connectivity

Statements	Weighted Mean	Standard Deviation	Rank	Interpretation
I was able to finish tasks without interruptions due to bad internet connections.	3.75	0.84	6	Agree
I was able to go to work on time without getting late.	3.97	0.86	2	Agree
I am worth connecting with others in online discussion forums and meetings.	4.05	0.81	1	Agree
I was able to perform the task well without any inconvenience.	3.63	0.87	7	Agree
I was able to set adjustments to distance learning.	3.86	0.80	4	Agree
I found flexibility in doing online-based tasks.	3.86	0.86	3	Agree
Online work immersion became effective because I used to enhance my computer skills.	3.76	1.00	5	Agree

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Distance learning works better than a typical mode of learning.	3.11	1.25	8	Neutral
Composite Mean	3.75			Agree

Legend: 4.21 – 5.00 (Strongly Agree); 3.41 – 4.20 (Agree); 2.61 – 3.40 (Neutral); 1.81 – 2.60 (Disagree); 1.00 – 1.80 (Strongly Disagree) (n=63)

Self-Assessment on Performing Online Work Immersion Tasks

Given the challenge brought by the pandemic alongside the emergence of technology, it is understandable that students might feel a bit unconfident in performing given tasks during the online work immersion. Thus, it is indeed empirical for students to conduct self-assessments to address such challenges. Table 2 shows how students perceived themselves through their work performance during their online immersions. Students strongly agreed that they learned and showed a professional attitude in dealing with different people that they encountered. In the work immersion, the students become familiar with the work-related environment, which is highly related to their specialization, to develop their competence. Through work immersion, students can improve their knowledge and skills, understand the significance and application of the theories and principles taught in school, improve their communication and interpersonal skills, develop positive work habits and attitudes, and develop an appreciation for and respect for work, all while learning critical industrial abilities under the supervision of professionals. Acut, Curaraton, Latonio, and Latonio (2021) stated that the program based on the assessment can foster professional and personal growth as well as develop the learning experiences of the students and provide opportunities for the students in learning the outside work environment that augments the academic learning performance of the students. The students bring innovations and ideas to government, industry, and community organizations.

Table 2

Weighted Mean and Standard Deviation of Self-Assessment on Performing Online Work Immersion Tasks

Statements	Weighted Mean	Standard Deviation	Rank	Interpretation
I demonstrated different abilities/skills to do tasks or operate materials/equipment/applications needed for the job.	3.98	0.77	4	Agree
I could handle the details of the work assigned to me without difficulty.	3.83	0.85	7	Agree

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I learned and showed a professional attitude in dealing with different people whom I came in contact with.	4.29	0.73	1	Strongly Agree
I was able to give sound suggestions for problems.	3.76	0.82	8	Agree
The work immersion program motivated me to pursue a high level of learning and career.	3.92	0.85	6	Agree
I could adapt to the changes in my work environment and overcome problems in the work immersion.	3.95	0.79	5	Agree
The work immersion program allowed me to explore new ideas about the existing knowledge in the field of library science.	4.10	0.80	2	Agree
I was attentive and productive throughout my work immersion.	4.02	0.81	3	Agree
Composite Mean	3.97			Agree

Legend: 4.21 – 5.00 (Strongly Agree); 3.41 – 4.20 (Agree); 2.61 – 3.40 (Neutral); 1.81 – 2.60 (Disagree); 1.00 – 1.80 (Strongly Disagree) (n=63)

Self-Application of Task After Online Work Immersion

Since the objective of work immersion is to apply the knowledge acquired from the classroom to the actual work environment, it is understandable that students may also assess if the skills and experience learned from the online work immersion can be applied after the immersion or at the actual workforce. Table 3 below shows how the students perceived their experiences once the online work immersion had ended. Based on the responses, many students believed and strongly agreed that they accomplished all the assigned tasks on time. Students also agreed that they became well organized and competent to complete the task. However, only a few students agreed that they were more efficient in doing tasks online than working physically inside the library. This further signified that as the students worked independently, students were also developing their sense of responsibility and self-reliance to finish the given task.

Table 3

**Weighted Mean and Standard Deviation of Self-Application of the Task
After Online Work Immersion**

Statements	Weighted Mean	Standard Deviation	Rank	Interpretation
I was able to accomplish all assigned tasks on time.	4.24	0.89	1	Strongly Agree
I was able to communicate well with my superiors.	4.10	0.82	3	Agree
I am more efficient in doing tasks online than working inside the library.	3.41	1.16	8	Agree
I was able to manage my time and stay motivated.	3.79	1.06	6	Agree
I am committed to doing more online work.	3.57	1.07	7	Agree
I was able to focus on achieving goals in work, results in higher productivity.	3.86	1.00	5	Agree
I am well organized and competent to complete and get stuff done.	4.14	0.90	2	Agree
I was able to prioritize the tasks wisely.	4.00	0.92	4	Agree
Composite Mean	3.89			Agree

Legend: 4.21 – 5.00 (Strongly Agree); 3.41 – 4.20 (Agree); 2.61 – 3.40 (Neutral); 1.81 – 2.60 (Disagree); 1.00 – 1.80 (Strongly Disagree) (n=63)

Coping Mechanisms to Overcome Difficulties During Online Work Immersion

With challenges associated with conducting online work, immersions call for the students to be as resilient as possible to accomplish given tasks. Table 4 below shows how students overcome these challenges. Based on the responses, the majority of the students noted that being friends with workmates helped them to overcome difficulties in work immersion. In addition, some students also agreed that the work institution helped them to overcome difficulties by adjusting

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deadlines and being lenient on workloads. However, some students agreed that they were able to ease the stress from work immersion through entertainment materials/mediums such as watching television and listening to music as well as sleeping throughout the working hours whenever it was possible to regain their strength. This further denotes that students responded through various coping mechanisms to be more focused and to accomplish the given task during online work immersion.

Table 4

Weighted Mean and Standard Deviation of Coping Mechanisms of the Students to Overcome Difficulties During Online Work Immersion

Statements	Weighted Mean	Standard Deviation	Rank	Interpretation
I was able to ease the stress from work immersion through entertainment materials/mediums such as watching television and listening to music.	3.97	0.86	6	Agree
I use social media to relieve work fatigue.	4.02	0.89	5	Agree
Learning and researching advances sustained the gap in my abilities.	4.10	0.78	3	Agree
Asking questions to my instructor right after the work immersion hours will help me to understand the task more.	4.06	0.80	4	Agree
I sleep throughout the working hours whenever it is possible in order to regain my strength.	3.29	1.17	7	Neutral
Being a friend with workmates helps me to overcome difficulties in work immersion.	4.30	0.75	1	Strongly agree
The work institution helped me overcome difficulties by adjusting deadlines and being lenient on workloads.	4.11	0.88	2	Agree
Composite Mean	3.98			Agree

Legend: 4.21 – 5.00 (Strongly Agree); 3.41 – 4.20 (Agree); 2.61 – 3.40 (Neutral); 1.81 – 2.60 (Disagree); 1.00 – 1.80 (Strongly Disagree) (n=63)

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Level of Readiness to Professional Library Work

As the online work immersion comes to an end, students were also asked to assess their readiness level for actual professional library work and see that the said immersion has been helpful in preparing them for the real-life work environment. Table 5 below shows that the majority of the students agreed that they learned and improved their skills during the online work immersion. In addition, most of the students agreed that the online work immersion allowed them to gain additional knowledge that was not discussed in the classroom. However, few students agreed that the online work immersion allowed them to experience different library works and taught them to be more resourceful and productive. This further denotes that the students felt that they were indeed ready to work professionally. The experiences of students in the programs where one would learn the long-term goal while celebrating successes along the way, establish and build expertise, draw, and become a veteran librarian based upon new ideas of new librarians, learn to recognize the information literacy program, and believe good results from their efforts. They begin working towards incorporating talents and ideas with their groups.

Table 5

Weighted Mean and Standard Deviation of Level of Readiness to Professional Library Work

Statements	Weighted Mean	Standard Deviation	Rank	Interpretation
This work immersion taught me to be more resourceful and productive.	3.58	1.17	7	Agree
In my career, I applied all the knowledge I learned in work immersion.	3.89	0.93	5	Agree
Work immersion made me gain additional knowledge that we didn't discuss in the classroom.	4.03	0.94	2	Agree
Work immersion allowed me to experience different library works.	3.80	1.01	6	Agree
I learned and improved my skills during work immersion.	4.13	0.93	1	Agree
I am confident that the work immersion prepared me for my future career.	3.91	0.83	4	Agree

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I understood the connection between tasks given to me in the work immersion to my career.	3.95	1.00	3	Agree
Composite Mean	3.89			Agree

Legend: 4.21 – 5.00 (Strongly Agree); 3.41 – 4.20 (Agree); 2.61 – 3.40 (Neutral); 1.81 – 2.60 (Disagree); 1.00 – 1.80 (Strongly Disagree) (n=63)

The results revealed that the knowledge and skills learned both at the schools and at the online work immersion alongside the students' soft skills which may include personal development, technical focus, problem-solving, interpersonal orientation, organizational awareness, positive work attitudes, resilience, adaptability, maturity, and motivation, were indeed a preferable mix in making them work-ready graduates. Indeed, the work immersion would be fruitful if the students were ready to learn new skills and mold their behavior and attitude to venture into the specialized field they want to focus on.

Conclusions

The upsurge of the pandemic halted several functions and processes in the educational landscape. Work immersion regardless of mode of delivery or learning still plays a vital role in ensuring that the teachings inside the walls of the classroom are indeed relevant to the actual work environment. This study revealed that distance and connectivity issues impacted the productivity and performance of the students during the online work immersion as the fulfillment of the task heavily depended on a stable internet connection. In addition, it is also essential to understand how students perceive their overall online work experience and assess how they performed to accomplish the given task. This also helps them to assess if they learned something from the online work immersion and if they are indeed ready to work in the library upon completion of the degree. Students still prefer to have the work immersion done in a physical setting. Lastly, although students still prefer to apply their knowledge in the actual physical library environment, the outcome of the study can be used to improve any online work immersion in the future which may include virtual library tours, online seminars and information sessions, hybrid work immersions, and virtual team building to name a few.

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CALVO C. J. B.Політехнічний університет Філіппін (Маніла, Філіппіни),
e-mail: cathcalvo18@gmail.com, ORCID 0009-0008-9905-1743**MARCELO V. A. P.**Політехнічний університет Філіппін (Маніла, Філіппіни),
e-mail: xvaliantx77@gmail.com, ORCID 0009-0002-9055-7891**PARIÑAS P. D.**Політехнічний університет Філіппін (Маніла, Філіппіни),
e-mail: paolo.parinas@gmail.com, ORCID 0009-0007-7589-9873**REGALA M. R. G.**Політехнічний університет Філіппін (Маніла, Філіппіни),
e-mail: michalregala@gmail.com, ORCID 0009-0004-0255-5912**TELEMBAN C. M.**Політехнічний університет Філіппін (Маніла, Філіппіни),
e-mail: cjtelemбан15@gmail.com, ORCID 0009-0009-9947-8752**VILLAFLOR M. D.**Політехнічний університет Філіппін (Маніла, Філіппіни),
e-mail: mickeyvillaflor@gmail.com, ORCID 0009-0003-1202-6515**MANABAT A. R.**Назарбаєв університет (Астана, Казахстан), Політехнічний університет Філіппін
(м. Маніла, Філіппіни), e-mail: april.manabat@nu.edu.kz, armanabat@pup.edu.ph,
ORCID 0000-0003-1720-5910**LIRIO V. A.**Політехнічний університет Філіппін (Маніла, Філіппіни), Університет Рісаль Систем
(Біангонан, Рісаль, Філіппіни), e-mail: vivian.lirio@gmail.com,
ORCID 0009-0002-6585-7307**JULIAN R. R.**Політехнічний університет Філіппін (Маніла, Філіппіни), e-mail: rrjulian@pup.edu.ph,
ORCID 0009-0003-1305-2889**Практикум без практики? Аналіз впливу поринання в онлайн-роботу серед студентів бакалаврату бібліотечно-інформаційної справи (БІС) в умовах пандемії¹**

Мета. Це дослідження має на меті задокументувати вплив поринання в онлайн-роботу серед студентів бакалаврату бібліотечно-інформаційної справи (БІС) Політехнічного університету Філіппін. Дослідження висвітлює досвід студентів БІС, які зазнали онлайн-поринання в роботу протягом 2022/2023 навчального року, зокрема їхні виклики та труднощі впродовж робочих годин. **Методика.** У цьому дослідженні використано описовий кількісний підхід для документування впливу поринання в онлайн-роботу серед студентів бакалаврату бібліотечних та інформаційних наук (БІС) Політехнічного університету Філіппін (PUP) протягом 2022-2023 навчального року. Дослідники використовували цілеспрямовану неімовірнісну вибірку для збору респондентів. Загалом 63 студенти 4-го курсу БІС, які вивчали дисципліну «Бібліотечна

¹ Ця стаття була дипломною роботою деяких авторів, поданою на часткове отримання ступеня бакалавра бібліотечних та інформаційних наук (BLIS) у Педагогічному коледжі Політехнічного університету Філіппін, Маніла, Філіппіни, у лютому 2023 року.

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практика», погодилися взяти участь у дослідженні, і їм було запропоновано оцінити 40 тверджень за шкалою Лайкерта (1 – зовсім не згоден і 5 – повністю згоден). Ці твердження були використані, щоб описати їхній загальний досвід, а також проблеми, з якими вони зіткнулися під час поринання в онлайн-роботу. Твердження висвітлювали їхні труднощі, механізми подолання, які вони використовували, а також їхню готовність виконувати професійну бібліотечну роботу. Дослідники використовували статистичні методи, такі як частотний розподіл, відсоткові та зважені показники, щоб інтерпретувати й аналізувати зібрані дані та надати більш переконливі результати для дослідження. **Результати.** Дослідження показало, що більшість студентів зіткнулася з певними проблемами, пов'язаними з дистанційним навчанням та питаннями підключення. Крім того, ці виклики були переборені за допомогою різних стратегій подолання, таких як налагодження стосунків із колегами по роботі, а також вивчення та дослідження поставлених завдань заздалегідь. **Висновки.** Дослідження також виявило, що студенти віддають перевагу практичним заняттям на робочому місці з урахуванням набуття більшого обсягу знань та навичок у реальному робочому середовищі.

Ключові слова: поринання в онлайн-роботу; студенти БІС; пандемія; Філіппіни

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GALATS'KA V. L.

Ukrainian State University of Science and Technologies (Dnipro, Ukraine),

e-mail: farion66@ukr.net, ORCID 0000-0002-1712-2712

FILIPENKO V. V.

European Medical University (Dnipro, Ukraine), e-mail: filvikvil@gmail.com,

ORCID 0000-0001-8945-7370

Theatrical Periodical Publications in the Bibliographic Dimension of Ukraine: Thematic and Cultural Orientations

Objective. Theater art today is a self-sufficient creative substance with a special metaphorical language. The scenic meaning of human existence is organically interpreted on the pages of unique periodical publications of the beginning of the 20th century, which were printed in the largest Ukrainian cities. The continuation of the tradition of publishing theatrical periodicals is observed at the end of the 20th and beginning of the 21st centuries. It is presented by specialized magazines "Kino-teatr [Cinema-Theatre]", "Ukrainian Theater", "Teatralna besida [Theatrical Conversation]" and others. **Methods.** Inductive-deductive, systemic, semiotic methods of research of scientific material and elements of cultural studies of mass media are applied. **Results.** Theatrical periodicals of Ukraine of the 20th and 21st centuries, which are found in the collections of the libraries of Kyiv, Dnipro, Lviv, and Kharkiv, have been analyzed. Their role in the creation of the socio-cultural space of Ukraine is studied, and the genre-thematic potential and cultural content are considered. **Conclusions.** Theatrical periodicals of the XX-XXI centuries. is characterized by a multi-genre presentation of the theatrical life of its time, and journalistic originality. This allows creative use of its potential in library activities as a cultural marker of time.

Keywords: art media; theatrical periodicals; journalism; genres; library; cultural space

Introduction

In the modern socio-cultural space of Ukraine, the theater acquires the characteristics of an artistic medium (Balme, 2008), which actively produces nation-building meanings, interactive content, and a patriotic position, especially during military challenges. For Ukraine today, this is super important. Through conventional meanings of theatrical art, the problems of forming a harmonious human personality were always produced, energy exchange between the actor and the audience was carried out with the help of a special metaphorical language. We believe that the opinion of the most famous philosopher of the 20th century Y. Habermas about "a person's return to his/her identity, to the lost connection with other people, which is a prerequisite for the restoration of "communication free from domination" is correct (Habermas, 1996). Stage art can develop this new form of human relations. It appears in new forms, presenting global reality, carrying out effective communication. Thus, according to Ch. Ndhlovu (2020), with the help of "elements and materials of communication", the study of the environment, contexts, space and time, dialogues, "everything that happens in the sphere of communication, in which people are ready to interpret, voice views, pose goals and objectives in the communication process" is performed.

The performing arts at all times are called upon to make a spiritual diagnosis for society. As a special type of artistic communication, it is considered in modern communication studies and cultural studies as information-polyphonic art. Thus, the famous French semiotician R. Bart (1996) noted: "At certain moments of the performance, we receive six or seven messages simultaneously (which arise from the scenery, costume, lighting...). This is theatricality: the density and richness of signs (in comparison with the linearity of the literature)".

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Theatrical journalism can provide the most comprehensive (high-quality) analytical and descriptive interpretation of various theatrical events of the 20th and 21st centuries. It is presented interesting from a polygraphed point of view, original in content, rare periodicals of Ukraine for a period of one hundred years (from the time of the empire at the beginning of the 20th century to the era of Independence at the end of the 90s of the 20th century).

In modern library activity, which is intended to ensure information support for scientific research in the socio-communicative and cultural spheres, such rare publications create new opportunities for communication and increase the effectiveness of feedback with readers. As T. Dolbenko notes, at the beginning of the 21st century, the role of libraries in the structure of modern scientific communications is growing. According to the researcher, new organizational models are emerging today: libraries as centers of business and legal information, which embody a cultural and civilizational phenomenon (Dolbenko, 2015).

Ukrainian researcher N. Zakharova rightly emphasizes the fact that in our time the cultural and mass work of libraries has been transformed into a cultural and educational and cultural and informational one (Zakharova, 2009). The author M. Slobodjanyk (2007) considers the library mission as the first social institution, "the activity of which allows preserving the documentary memory of mankind for thousands of years". The author P. Hills, building a system of scientific communication, singled out 6 components in it: a scientist as a producer and consumer of scientific information, a scientific community, a publisher, an information product, a librarian, and new communication technologies. Conceptually, a library worker is an intermediary between a scientist, as a consumer, and information, and the library is an important communication channel (Dolbenko, 2015). Therefore, the demand of scientists, representatives of creative professions, and students for original theatrical information presented in rare and modern periodicals is quite natural. Access to modern digital technologies is professionally necessary for publications, as it makes it possible to provide high-quality art information. Such a dialogic model of cooperation between readers and libraries as modern information and communication centers for the development of science and culture, demanded by time and society is relevant today and requires comprehensive interdisciplinary research.

Objectives

The purpose of the article is a scientific rethinking of the role of Ukrainian theater periodical publications of the 20th and 21st centuries in the modern bibliographic dimension. Part of the unsolved scientific problem is the determination of cultural content from a genre-content perspective.

Methods

The declared topic and purpose of the work require the search for relevant methods of researching the scientific material. We used the inductive-deductive method to identify the genre features of theater-themed materials presented in publications at the beginning of the 20th century and in modern editions, summarizing their content characteristics. We used the inductive-deductive method to identify genre features of theatrical materials presented in publications at the beginning of the 20th century and in modern editions, to summarize their content characteristics. With the help of a systematic method, we sought to present the theatrical process of different eras as integral, capacious, and self-sufficient. The application of the semiotic method helped to highlight the cultural context in which signs and codes of theatrical art function.

Results and Discussion

The life of the theater as the most popular art at the beginning of the 20th century is recorded in interesting from a polygraphed point of view, elegantly designed periodicals, which are professionally presented in the collections of many Ukrainian libraries: in the book collections of Kyiv, Kharkiv, Lviv and Dnipro, as powerful theater cities both at the beginning of the 20th century and in the 21st century. Thus, the Department of Periodicals at the National Library of Ukraine named after V. Vernadskyi has collected a rich collection of theatrical periodicals, which conceptually traces the greatest theatrical achievements of Ukraine. These are the specialized magazines "Kievskaya rampa [Kyiv Ramp]", "Kievsky teatral [Kyiv Theatergoer]", "Kievsky teatralny kuryer [Kyiv Theater Courier]", dated 1910-1912.

It is interesting that on International Theater Day, which is celebrated around the world on March 27, the library team organizes a thematic exhibition of these publications every year, demonstrating advertising and presentation activities, developing reader demand and scientific interest in cultural issues. In this way, the role of the modern library is manifested as a powerful center of communication, a cultural and civilizational phenomenon of an institution (Chachko, 2004).

Black and white rare editions, highly artistic portraits of famous actors (verbal and photographic), programs of performances of Kyiv theaters, and information about tours are offered to readers in the Periodicals Hall of the National Library of Ukraine named after V. Vernadskyi. It is worth noting that in 1913-1914 a special supplement was published, which included the addresses of the variety theaters. These publications played a major role in creating the socio-cultural orientations of the theater audience at that time.

Also, the theater history of Ukraine was recorded in the regional cultural periodicals "Artystychny visnyk [The Artistic Herald]" (Lviv), "Teatr i kino [Theater and Cinema]" (Odesa), "Vestnyk teatra [Bulletin of the Theatre]" (Katerynoslav, now Dnipro). The last edition was popular among Katerynoslav's inhabitants and existed from 1910 to 1914, until the beginning of the First World War. The large industrial city on the Dnieper was enriched by another publication – "Obozrenie iskusstva [Review of Art]". As eyewitnesses noted, this journal was sold out in minutes and was authoritative in the formation of audience opinion.

The journal "Vestnik teatra [Bulletin of the Theatre]", published according to the latest printing fashion of the time, became interesting in the informational and educational aspects. Designed in black and white and laid out according to the principle of literary journals, it became almost the only source of cultural information in the city. An artistic portrait of a famous actor in the signature role was traditionally placed on the cover of each issue. For example, No. 21 for November 1913 is decorated with a portrait of the actor P. Orleniev in the role of Raskolnykov. This issue of the journal contains psychologically accurate, skillful portraits of actors S. Shatov, O. Ziablova, S. Hamalii, M. Azovskyi, A. Synytsyna. They organically illustrate notes, correspondence, sketches about artists. Materials in these specialized editions were often signed with the critics' initials, although the theater audience knew them by face. Thus, reviewer A.U-n wrote about the style of the actress: "Ms. Kremneva's subtle and filigree finishing of the role is visible..." (U-n, 1913).

In correspondence about the symphonic concerts at the Katerynoslav Collection, the critic G. Limanovskyi stated: "The central number of the program, of course, was considered the "Kreutzer Sonata", a sonata of passion in all its manifestations. The Becker grand piano, played by Mrs. Esipova, sounded good" (Limanovskyi, 1913). High artistic style and expressiveness of

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presentation were inherent in all materials. The accessibility of the presentation and the originality of the printing design will attract both researchers of theatrical art and ordinary library readers.

The theatrical feuilleton was a rather rare genre on the pages of the publication. The author A. Arnoldov achieved great success in developing this type of creativity, which is difficult from a journalistic and artistic point of view. Having chosen the mediocre actor Nikudyshkin as his hero, the author puts him in comical "suggested circumstances": "With a jubilant soul and disobedient legs, Nikudyshkin went home. What a stupid thing to do – to learn the role to which "a decent viewer will not pay any attention. Another thing is the leading role" (Arnoldov, 1913). The ability to build a comic situation and select adequate artistic means of expressing thoughts creates a communicative effect necessary for mutual understanding between the author and the reader. Thus, these rare periodicals are valuable bibliographic material that creates the cultural context of the era of modernism.

After a hundred years, the theater scene in Ukraine is recorded in some specialized periodical publications "Cinema - Theater", "Ukrainian Theater", "Theatrical and Concert Kyiv". The newest design and layout technologies, the genre diversity of the presented materials (reviews, interviews, descriptions) scientific research of a theatrical nature, materials of historical and theatrical content form the content of these publications. Fundamental articles by critics and reviewers of theater life O. Verhelis, V. Zhezhera, V. Kotenok, A. Lypkivska, A. Pidluzhna, O. Sakva, I. Chuzhynova, Yu. Shvets reproduce the theatrical process of the 21st century as a synergistic one that exists in categories of non-linearities, non-systematics, instability (Korniienko, 2008).

In the modern Ukrainian theater today, the sociocultural model of society of the globalized era or metamodernity is presented in specific stage means. The role of modern theater in the formation of national identity is a priority. National stage art performs communicative and value-oriented functions in society and creates a spiritual resonance for important events. Modern theater is a powerful source of artistic communication.

The relevance of the media and presentation aspects of covering theatrical events in society is confirmed by the professional success of modern Ukrainian theater in the international arena, in the field of intercultural communication. Reproduction of stage events of national existence in theatrical journalism is presented today in specialized periodical publications, which are presented in art departments of regional libraries in Ukraine. Thus, in Kharkiv, the publication "Arterium" was initiated in 2013, positioning today a theatrical portrait of the "second capital of Ukraine", its stage school, educational and art tradition. The journal is noted for its analytical presentation of the material, and the depth of theatrical evaluations in the genre of reviews and essays.

The journal "Teatr Plus", founded by the interregional branch of the National Union of Theater Actors of Ukraine, has analytically and figuratively recorded the theatrical life of Dnipro for many years. The journal has become a chronicle of the creative achievements of theatergoers in Dnipro and Zaporizhzhya. Before the start of the Russian-Ukrainian war (February 24, 2022), 14 issues of the journal were published, which became a chronicle of the creative achievements of theatergoers from Dnipro and Zaporizhzhia. Interesting photographic and readable content, presented in interviews with well-known regional theater figures, created the popularity of the journal among performing arts professionals. The materials of the journal (authors T. Abramova, V. Zabolotna, N. Rekunenko, V. Doroshenko, V. Galats'ka, L. Tomenchuk, etc.) became a good basis and a comprehensive reference source for the preparation of thematic exhibitions in libraries for the International Theater Day.

The journal, which has been published since 2000, contains medium and large journalistic genres: interviews, reviews, and descriptions. This informational and cultural journal showed the

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most important stage events of the Dnieper region for more than 20 years, and reproduced the chronicle of the regional theater festival "Sicheslavna". The thoroughness of understanding the theatrical vectors of existence, and the meditateness of the author's thinking is inherent in the author's style of materials, generously illustrated with photos from performances and graphic works of famous artists of the Dnieper region: V. Nebozhenko, I. Shulyk, V. Mykoliuk, et al.

Reflections published in the journal on the outstanding stage masters of the Dnieper region, on the fate of theatrical productions, and the development of the art of Melpomene are of great theatrical value. Thus, the famous Kyiv Professor of theater studies V. Zabolotna in the review "Let's go!" states the problem of the future of the theater: "Contrasts...Contrasts...Contrasts...Today's Ukrainian theater gropes its way to its future. But the main thing is movement. Let's go! Where is the road to the temple?" (Zabolotna, 2001).

Valuable for acting training are the transcripts published in various issues of the journal of discussions by the authoritative jury of performances that were candidates for the highest theatrical award of the Dnieper region "Sicheslavna". Numerous interviews with viewers also outline the cultural problems of the region. Thus, the collective interview of the young viewers concerning "The Cathedral" through the eyes of students prepared by N. Shcherbyna deserves attention: "No one before V. Mazur took up to adapt the Honchar's novel for the stage. Probably because "The Cathedral" is a journalistic work and it is quite difficult to translate it into the language of the stage" (Shcherbyna, 2001). The spiritual and valuable aspect of such materials is obvious, they are a good illustration of the high cultural demands of the audience.

The modern regional journal "Teatralna besida [Theatrical Conversation]", founded by the Lviv interregional branch of the National Union of Theater Workers in Ukraine, is of great bibliographic value. Published in A5 format, illustrated with black and white photographs of actors and theater posters, the journal reproduces the unique style and printing culture of ancient Lviv as a city of significant cultural traditions.

The historical aspect of theatrical life in Lviv in the second half of the 20th and early 21st centuries is thoroughly researched in the headline articles of the former editor-in-chief of the journal, People's Artist of Ukraine Fedor Strygun ("The Glorious Years of the Ukrainian Theater Brotherhood"). The journal contains many sketches of actors, which are interesting from a bibliographic point of view.

Thus, A. Kanarska in the sketch "Hosanna of Love" analyzes the work of the Honored Artist of Ukraine Natalia Datsko. Describing the vocal skills of the actress, the author writes: "What could be more beautiful than a love story sung by a voice similar to all the wonders of the world, which absorbed all shades of human feelings..." (Kanarska, 2009).

Stefania Poluden presents a creative portrait of the actor Borys Mirus on the pages of the journal. Using the metaphor "Narodnyi lytsedii [People's Actor]", which means "folk histrion" – (obsolete) a stage actor or "folk performer", the critic emphasizes the difficult creative path of the well-known artist of the Zankivchanska scene: "The credibility of the actor is impressive in his most unexpected roles!... Borys Mirus is a real histrion, a real actor without role limitations" (Poluden, 2009). It is noteworthy that the authors illustrate valuable materials with high-quality photos from performances of different time intervals. The high culture of the author's thought, competence in all matters of theatrical life, selected literary language create the authority and unique creative value of this publication.

Since 1995, the cultural journal "Kino-Teatr [Cinema-Theater]" has been published in Ukraine (the founder is the Kyiv-Mohyla Academy). Today it is a popular science journal with a strong historical and cultural background, and a talented team of authors (the editor-in-chief is an Honored cultural worker of Ukraine, Larisa Briukhovetska).

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The journal has regular columns, which helps to qualitatively systematize publications, and quickly make a bibliographic description. In the columns "Actual", "On Stages", "Festivals", "Dialogue", "History", "Art Chronicle" significant events of theatrical life are presented. The genres of articles, interviews, reviews, and creative portraits of theater artists are actively developing. The journal is authoritative for the formation of expert opinion, uses polemical presentation of materials, and carefully monitors the events of the theater and cinema life of our country.

The "Dialogue" column, which presents interviews with famous theater figures: young and experienced, is worthy of attention. Thus, in one of the last issues of 2023, Alona Movchan's interview with Honored Artist of Ukraine Rimma Ziubina is presented: "We carelessly played the game that art is outside of politics". The actress professes a balanced patriotic position, as, in fact, does the "Kino-Teatr [Cinema-Theater]" journal: "For me, the war began in 2014 – since then I have been trying to be socially active... you have to join social projects, not just earn money" (Movchan, 2023).

The seriousness of the author's understanding of theatrical issues is expressed in the articles of the regular column in the journal "Actual". The analytical vector of the problem is creatively and perfectly researched in the article by Olena Bondarieva "Modern Ukrainian military drama": "The Russian-Ukrainian war, having become a battle for its own national identity, received an unprecedented artistic interpretation in modern Ukrainian drama" (Bondareva, 2023). Disputes, expression of the author's opinion, and creative honesty are characteristic of the style of today's most authoritative and long-lasting cultural journal of Ukraine, which continues the traditions of similar publications of past centuries.

Conclusions

The media presentation of the modern theater of Ukraine, which is developing in a globalized society, has a deep history that goes back a hundred years. Specialized art publications of the last century, present in Ukrainian libraries, create potential reflections of thoughts, feelings, and axiological aspects of art communication. This tradition is extrapolated to the periodicals of the late 20th and early 21st centuries, proving their continuity and innovation in the presentation of material. The rich content and illustrative component of the materials of Ukrainian theater periodical publications create the basis for their presentation in the library sector.

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GALATS'KA V. L.

Український державний університет науки і технологій (Дніпро, Україна),

e-mail: farion66@ukr.net, ORCID 0000-0002-1712-2712

FILIPENKO V. V.

Європейський медичний університет (Дніпро, Україна), e-mail: filvikvil@gmail.com,

ORCID 0000-0001-8945-7370

Театральна періодика в бібліографічному вимірі України: тематично-культурологічні орієнтири

Мета. Театральне мистецтво сьогодні являє собою самодостатню творчу субстанцію з особливою метафоричною мовою. Сценічний смисл людського буття органічно інтерпретується на сторінках унікальної періодики початку ХХ століття, яка видавалася в найбільших українських містах. Продовження традиції видання театральної періодики спостерігається наприкінці ХХ – початку ХХІ ст. Вона презентується спеціалізованими журналами «Кіно-театр», «Український театр», «Театральна бесіда» та ін. **Методика.** Застосовано індуктивно-дедуктивний, системний, семіотичний методи дослідження наукового матеріалу, елементи культурологічних досліджень ЗМІ. **Результати.** Проаналізовано театральні періодичні

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видання України XX–XXI ст., які містяться у фондах бібліотек Києва, Дніпра, Львова, Харкова. Досліджена їхня роль у створенні соціокультурного простору України, розглянуто жанрово-тематичний потенціал, культурологічний зміст. **Висновки.** Театральна періодика XX–XXI ст. характеризується різножанровою подачею театального буття свого часу, публіцистичною оригінальністю. Це дозволяє творчо використати її потенціал у бібліотечній діяльності як культурологічний маркер часу.

Keywords: мистецькі медіа; театральна періодика; публіцистика; жанри; бібліотека; культурологічний простір

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AKINOLA S. A.

Joseph Ayo Babalola University (Ikeji Arakeji, Nigeria), e-mail: saakinola@jabu.edu.ng,
ORCID 0000-0002-6010-5571

Capabilities and Apparent Implications of Artificial Intelligence (AI) Adoption in Nigerian Academic Libraries

Objective. This paper discusses the capabilities and implications of Artificial Intelligence (AI) in Nigerian academic libraries. The study emphasizes the importance of libraries using new technologies to improve their operations and services, especially in developing countries like Nigeria. **Methods.** The research conducted a literature review to examine the capabilities of AI in libraries and its impact on academic libraries. **Results.** Various AI tools such as natural language recognition, robotics, big data, and machine learning were identified. AI can revolutionize library services, improve information quality, increase productivity, and provide virtual assistance. However, there are challenges to the adoption of AI in Nigerian academic libraries, including high costs, resistance to change, poor network connectivity, privacy and ethical implications, and a lack of supportive cultures. To fully exploit the benefits of AI, libraries must develop plans and policies, train librarians with the necessary skills, and address the challenges associated with AI adoption. **Conclusions.** AI holds great advantages to enhancing library services in Nigeria, but careful planning and preparation are needed.

Keywords: artificial intelligence; academic libraries in Nigeria

Introduction

Libraries are constantly evolving to keep pace with technological advancements and changing information needs. The widespread use and rapid development of technology require libraries to adapt and embrace these changes in order to remain relevant and accessible. Information technology is rapidly evolving, and societies are becoming more sophisticated and competitive, relying heavily on technological advancements and the explosion of information (Thamaraiselvi2009). As a result, librarians and information professionals now work in a rapidly changing environment that requires smart and intelligent technologies to provide effective information services. Providing services that meet the changing needs of digital users has become a major challenge for libraries. Artificial intelligence (AI) has emerged as a key driver of change and development in modern society and plays a crucial role in transforming libraries into smart and intelligent institutions. AI has the advantages of transforming all aspects of human activity, including libraries and the information environment. It is considered an emerging technology that can bring new sources of growth and fundamentally change the way organizations, industries, and individuals work. In recent years, libraries have transformed from traditional repositories of information into dynamic data centers, undergoing significant changes in their operations and services. Modern technology has removed geographical barriers and made information easily accessible and rapidly movable. The impact of this technological revolution can be seen in the development of smart and intelligent technologies that enhance information intelligence, improve the organization of information resources, streamline service delivery, and enhance library management. Advanced technologies such as the Internet, big data, cloud computing, blockchain, Radio Frequency Identification (RFID), artificial intelligence (AI), and virtual/augmented reality will further shape the future library landscape (Yu, Gong, Sun, & Jiang, 2019). Libraries must adapt and embrace technological developments to remain relevant and meet the evolving information needs of their users. The integration of smart and intelligent technologies, particularly artificial intelligence, is crucial in optimizing the value of information services and enhancing their

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accessibility (Asemi As. and Asemi Ad., 2018). Continuous innovation and exploration of new technologies will be essential to keep up with the rapid advancements and define the future of library and information science. By proactively responding to these changes, libraries can position themselves as valuable resources in a digital and interconnected world. The incorporation of Information and Communication Technology (ICT) has greatly contributed to the growth and development of academic libraries in Nigeria. These libraries have embraced technology in their day-to-day operations, offering services such as computer access, scanning and printing, and online catalogs. However, the utilization of advanced technologies like the Internet of Things (IoT), big data, cloud computing, blockchain, and artificial intelligence (AI) is still limited in Nigerian academic libraries. The adoption of AI is in its infancy, and its effectiveness relies on librarians receiving the necessary training and refresher courses to acquire the technical skills and competencies required in the digital library environment. The emphasis of the traditional role of librarians has significantly changed over the past two decades therefore, librarians need to be flexible and acquire a wide range of technical skills to keep pace with current trends in the library profession. Machine learning and AI can then be used to enhance library operations and services, allowing librarians to adapt to a changing environment and meet the information needs of technology-oriented users. Despite previous studies on the impact of AI on library services, there is limited research specifically focused on its realization and apparent capabilities in Nigerian academic libraries. Therefore, the objective of this study is to investigate the position of AI realization in Nigerian academic libraries and examine the hindrances associated with its adoption. Additionally, the study aims to assess the advantages and benefits of using AI in these libraries. By doing so, it seeks to identify how AI can improve library services, enabling them to be seamless, efficient, innovative, and effective in meeting the dynamic information needs of users in the context of ICT.

Methods

The study reviewed the literature to explore the possibilities of artificial intelligence in libraries and its impact on academic libraries in Nigeria. The chronological framework for the study of professional literature: 2018-2023. The keywords used to search for literature on the topic of this study were "artificial intelligence" and "academic libraries".

Results and Discussion

The Concept of Artificial Intelligence

Artificial intelligence (AI) refers to the ability of machines to perform tasks that previously required human intelligence. This can include self-driving cars, robots, chatbots, and artificially generated images (Diaz, 2023). AI combines computers, computer-controlled robots, or software to think intelligently like humans, mimicking the problem-solving and decision-making abilities of the human brain (Duggal, 2023). It is an emerging technology that allows intelligent machines to understand reason, learn, and apply knowledge (Nwakunor, 2021). In the context of libraries, AI can be seen as a set of modern technologies that enable libraries to operate machines that can perceive, understand, act, and learn. This has implications for IT connectivity in libraries and can help meet customer demands and needs more effectively. The impact of AI and modern IT on the future of libraries is uncertain and can vary according to different experts (Vijayakumar & Cheshadri, 2019).

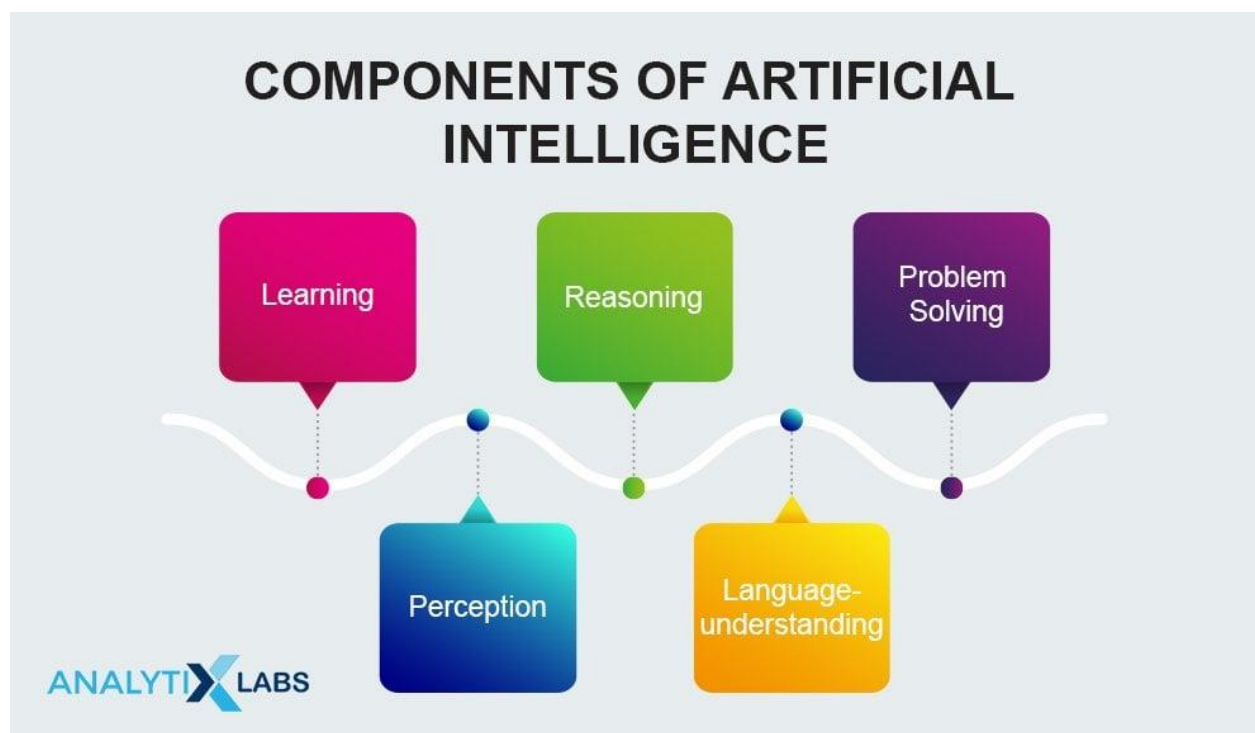


Fig. 1: Component of Artificial Intelligence

Diagram of AI Components (Fig. 1) showing components of AI including learning, reasoning, problem solving, perception, and language understanding (Bansal, 2021).

Among the benefits of AI in improving library services are **automating routine tasks, expanding collections, and enhancing user experience**. However, we also have to acknowledge the **shortcomings of AI, particularly in understanding the complexity of human language and culture**. Barriers to the adoption of AI in libraries include high costs, lack of technical skills, and privacy concerns. It is emphasized that librarians should acquire the necessary skills to adapt to the evolving technological environment. AI has the advantages of significantly improving library services by providing **personalized guidance, increasing efficiency, and automating wearisome tasks**. However, it is also important to address issues that may arise, such as **work delegation and privacy concerns**. AI has the advantages of enhancing library services, but careful consideration and adaptation are necessary to overcome the challenges associated with its implementation.

Artificial Intelligence in Academic Libraries and Its Perceived Impact

AI is transforming libraries into technologically advanced and user-centric institutions. It is causing significant changes in the field of library and information profession. AI technologies are being integrated into all aspects of human activity, including **research, data collection, transfer, storage, and access to information**. The combination of machine intelligence and machine learning allows for rapid automated assessment and computer-based feedback in libraries. AI has also revolutionized education and academic libraries, transforming **teaching, learning, and research processes**. **Image and face recognition technologies, adaptive learning, and other AI applications** are improving the educational experience for both teachers and students. In libraries, AI technologies enable **automated assessment of practical skills and improved resource discovery**. This revolution in libraries will profoundly impact their operations and services. AI has

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the advantages of enhancing **information processing and search**, helping information professionals find and provide specific information more quickly. With the application of AI, libraries will become more streamlined, convenient, and efficient in their operations and service delivery. Emerging technologies such as AI, the internet, cloud computing, and data mining hold great advantages for innovation and change in library services. Artificial intelligence (AI) is playing an increasingly important role in libraries and the information profession, revolutionizing the way these organizations operate and deliver services. As intelligent information technologies are integrated into all aspects of human activity, the applications and advantages of AI continue to grow rapidly. **In library and information science, AI facilitates research, data collection, transfer, storage, and access to information.** The combination of machine intelligence and machine learning is enabling rapid automated assessment and the generation of computer-based feedback and interventions. This paradigm shift is not limited to libraries but is transforming all sectors and industries. In the field of education, AI technologies are significantly changing teaching, learning, and research processes. Technologies like image recognition, face recognition, adaptive learning, and other AI-powered tools are bringing about several changes to improve teachers' work and students' learning experiences. AI's application extends to automated assessment of practical skills and providing appropriate feedback to individuals. For libraries, AI offers cutting-edge technologies to take advantage of, such as **metadata creation, translation search, and search integration.** It will revolutionize the way libraries operate, impacting knowledge processing and search methods. Information professionals can leverage AI to improve services, making it easier and faster for users to find and use specific information. AI will streamline and make libraries more efficient in their operations and service delivery. It will greatly impact areas like **search and resource discovery**, allowing for a more convenient and efficient navigation of libraries. Emerging technologies like AI, cloud computing, data mining, and smart technologies hold great advantages for innovation in libraries, services, and ICT management. AI has found its place in libraries as a **platform for discussion, responding to queries on library websites, providing alerts on overdue requests, and answering simple information requests.** Libraries have the opportunity to leverage AI to transform their operations and better serve their users. The integration of AI into the library and information profession is bringing about significant advantages, transformations, and developments. AI's advantages for revolutionizing libraries are evident in its impact on **knowledge processing, search methods, and efficient service delivery.** Libraries have the chance to embrace and harness these exciting new technologies to improve their services and enhance user experiences.

Artificial Intelligence Tools Applicable in Information Retrieval

AI tools are being increasingly used in information projects to improve data retrieval and analysis. **Natural language processing (NLP)** search engines, like Google, incorporate AI algorithms to understand and process natural language queries. By using techniques like semantic analysis, these search engines can provide more relevant and accurate search results. **Text classification tools** are another example of AI applications in information projects. These tools use AI algorithms to automatically categorize text documents based on predefined criteria, making it easier to organize and retrieve information. Additionally, **sentiment analysis tools** can determine the emotional tone of a text, which can be useful in understanding public opinion or sentiment toward a particular topic. Overall, AI tools are enhancing information projects by enabling more efficient and effective data retrieval and analysis. **Robots** are programmable machines that can perform automated tasks using AI technology. They improve the efficiency of

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library operations **by retrieving books or assisting in information retrieval for users. Big data** refers to the large volume, speed, and diversity of datasets used by AI to discover **patterns and relationships**. Data mining is an analytical tool used by AI to extract relevant information from datasets, helping users find new sources of information and support their research. **Chatbots** are AI software that engages in dialogue with library users, answering questions and providing personalized feedback. They can assist with research and navigate library resources. Chatbots differ from robots as they communicate verbally or via text, while robots use facial expressions, gestures, and speech. **Machine learning** is a subset of AI that automatically adapts to its environment with minimal human intervention and can be categorized as supervised, unsupervised, or deep learning. Deep learning involves complex neurobehavioral processes. Robots, powered by AI, automate functions in libraries and aid in information retrieval. Big data and data mining techniques enable the integration of library resources and facilitate precise research. Chatbots offer personalized assistance to library users and enhance efficiency. Machine learning encompasses various learning systems that adapt to their surroundings. These technologies collectively advance the capabilities of libraries and support users in finding relevant information.

Expediency of AI in Libraries and Information Centers

Artificial intelligence (AI) has the potential to revolutionize libraries by automating repetitive tasks, saving time and resources, and increasing productivity. By analyzing large data sets faster, AI relieves staff from performing tedious tasks, allowing them to focus on more meaningful work. Personalization of content and recommendations for library users can enhance customer satisfaction. AI-powered virtual agents also offer 24/7 availability, making information easily accessible and usable. Moreover, AI promotes collaboration and information sharing by connecting users with similar research interests, encouraging interdisciplinary cooperation, and fostering a sense of community. Additionally, AI can improve operational efficiency, enhance library services, and reduce operating costs, ensuring the sustainability of libraries. AI-powered virtual assistants and chatbots can offer direct assistance to users, answering their queries and guiding them toward relevant resources. Overall, AI holds the potential to transform libraries and enhance their efficiency in serving users.

Hindrances to the Successful Adoption of AI in Academic Libraries in Nigeria

Despite the possibilities of AI, its realization in libraries in developing countries, specifically Nigerian academic libraries, faces several hindrances. Among the hindrances are the inadequate ICT skills and technical expertise of librarians, which prevents effective application and use of AI technologies, inadequate financial support for libraries, backwardness in content digitization, fear of librarians losing the job, privacy and ethical issues, bad maintenance culture, irregular power supply, lack of essential infrastructure and technology, poor internet connectivity, and resistance to change among librarians are noticeable hindrances. Encouraging hands-on training and retraining of librarians, addressing financial constraints, improving content digitization efforts, ensuring data and information protection, enhancing maintenance culture, providing alternative energy sources, developing infrastructure and technology, and improving network connectivity are necessary to overcome these hindrances.

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Conclusion

The development and deployment of smart technologies, particularly artificial intelligence (AI), are transforming libraries worldwide and bringing about significant changes in how they operate. Nigerian libraries can greatly benefit from AI, as it has the potential to improve the efficiency, effectiveness, and accessibility of resources. However, some hindrances need to be addressed as enumerated above. Addressing these issues will allow libraries to harness the prospects of AI and other new technologies, enabling them to deliver high-quality services and assist researchers in discovering and synthesizing information. Therefore, to successfully apply AI, academic libraries in Nigeria should actively train and retrain librarians, develop clear guidelines and policies for responsible use of AI, and adopt innovative technologies to meet the evolving information needs of users in the dynamic ICT environment.

Recommendations

To meet the information needs of today's dynamic ICT users in a rapidly changing library environment, academic libraries in Nigeria and other developing countries must embrace innovative, intelligent, and cutting-edge technologies. Alongside adopting these technologies, clear guidelines and policies need to be developed to ensure responsible and ethical use of AI in libraries. This is crucial to maintain trust and protect user privacy. By improving the quality of teaching, learning, and research in academia, AI can ultimately contribute to the overall development of the education sector in Nigeria.

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AKINOLA S. A.

Університет Джозефа Айо Бабалола (Ікеджи-Аракеджи, Нігерія),

e-mail: saakinola@jabu.edu.ng, ORCID 0000-0002-6010-5571

Можливості та очевидні наслідки впровадження штучного інтелекту (ШІ) в академічних бібліотеках Нігерії

Мета. У цій статті обговорюються можливості та наслідки застосування штучного інтелекту (ШІ) в академічних бібліотеках Нігерії. Дослідження підкреслює важливість використання бібліотеками нових технологій для покращення своєї діяльності та послуг, особливо в країнах, що розвиваються, таких як Нігерія. **Методика.** У дослідженні було проведено огляд літератури для вивчення можливостей штучного інтелекту в бібліотеках та його впливу на академічні бібліотеки. **Результати.** Були визначені різні інструменти ШІ, такі як розпізнавання природної мови, робототехніка, великі дані та машинне навчання. ШІ може революціонізувати бібліотечні послуги, покращити якість інформації, підвищити продуктивність і надати віртуальну допомогу. Однак на шляху впровадження ШІ в академічних бібліотеках Нігерії існують певні труднощі, зокрема висока вартість, опір змінам, погане підключення до мережі, конфіденційність та етичні наслідки, а також брак сприятливих культур. Щоб повною мірою використовувати переваги штучного інтелекту, бібліотеки повинні розробляти плани та політику, навчати бібліотекарів необхідним навичкам і розв'язувати проблеми, пов'язані з впровадженням штучного інтелекту. **Висновки.** ШІ має великі переваги для покращення бібліотечних послуг у Нігерії, але потрібне ретельне планування та підготовка.

Keywords: штучний інтелект, академічні бібліотеки в Нігерії

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