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Problems and Prospects of Information Interoperability of Academic Libraries in Central Asia

Objective. The article is devoted to the analysis of the current state and prospects of information interoperability between academic libraries in Central Asia (CA). **Methods.** Publications on the topic of information and library interoperability, including in CA, have been studied, experience in the area has been analysed and summarized. **Results.** The authors proposed a comprehensive and systematic approach and methods to develop interoperability of academic libraries in CA. **Conclusions.** Summarizing the international experience of interlibrary cooperation at the regional level, it should be recognized that it is successful provided that there is a comprehensive approach to its provision, that is, the relevant bodies for planning, coordinating and monitoring information interoperability should be created and functioning, library personnel with relevant competencies should be trained and involved in the work, the relevant software and hardware and infrastructure should be available.

Keywords: academic librarianship; Central Asia; library cooperation; library consortia; information and library infrastructure; corporate network

Introduction

The digital transformation of higher education in Central Asia is an urgent and necessary condition for increasing its quality and competitiveness (Bugubayeva, 2021). A key factor in the success of the process is the availability of educational and scientific information resources, as well as tools for working with the resources, in digital form. Typically, academic libraries are responsible for providing the resources and tools, and for training users (students, teachers and researchers) how to use them.

Information interoperability between academic libraries in the region would significantly increase the information and functional potential of each of the libraries and could create a synergistic effect in information and library services for higher education in the region and contribute to its competitiveness in the global arena.

At the same time, as the case of Central Asia shows, there are such problems in the information and library support of higher education and research in the region's universities as "patchwork" automation, the lack of unified, internationally compliant standards and protocols for the creation, storage and exchange of data and metadata, a focus on the maintenance of the printed collection, rather than on the development of electronic information resources and the introduction of modern tools for working with information. There is no unified, operational and transparent system of statistical and analytical reporting on development of academic libraries based on collecting and analysing information about their resources and services such as licensed databases, open educational resources, institutional repositories, library web-portal functionality, etc. at the republican and regional levels. The lack of a union catalogue of academic libraries in the CA countries and ignoring international corporate resources such as WorldCat cause duplication of work on the creation of bibliographic records and metadata as well as insufficiently complete and effective information retrieval of necessary information to library users. Another major problem

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is the gap between the contemporary library practice requirements and outdated educational programs for training, retraining and advanced training of library personnel (Rakhmatullaev & Hedrich, 2024).

As is known, co-operation between libraries can yield more than any single library, and sharing information and knowledge leads to enrichment of information and knowledge for all those involved in such sharing (Ghosh, 2011). That is why interlibrary cooperation and information interoperability between libraries are so popular. They have existed in many forms, in many countries, for many years (Bostick, 2001). Some forms of interlibrary cooperation were and remain informal, while others involve fairly complex processes of sharing collections and services and carrying out certain processes, such as collaborative cataloguing, as well as staff development or improved user services.

There are two main types of library alliances:
1) A library association as an alliance of libraries and librarians at the local, national and international levels, which is usually created to protect the interests of librarians, enhance the status of the library profession in society, create conditions for improving the professional qualifications of librarians, etc.;
2) A library consortium as a cooperative organization of libraries created for the purpose of subscribing to information resources, purchasing, supporting software products at a significant discount, sharing information resources, maintaining resource exchange and reciprocity, and bound by generally recognized agreements and contracts.

Library associations usually support various forms of library cooperation, for example, interlibrary loan, electronic document delivery, which undoubtedly increases the efficiency and quality of services of the libraries that are members of the association.

Initiated or supported by a library association professional training and library staff certification opportunities also enhance library services because a library staff is a very valuable resource for that.

As for library consortia, the purpose of their creation is precisely to improve the information and library services offered by libraries, its members. Therefore, the range of jointly created and offered resources and tools in a consortium is wider (union electronic catalogue; shared (centralized or decentralized) cataloguing; electronic document delivery; common repository of rarely used and/or special collections of printed publications); network integration of institutional repositories of consortium members, etc.) (Moghaddam & Talawar, 2009). Although academic library consortia have traditionally focused on the financial aspect of creating, acquiring, and using information resources or software (Kumar & Rath, 2017), some also seek to demonstrate their involvement in achieving the strategic goals of the institutions to which the member libraries belong and their impact on the outcomes of the students to whom they offer their services (Arch & Gilman, 2017).

For successful and sustainable activities of a library association (consortium) in the long term, it is necessary to recognize the importance of an integrated approach to its management, based both on the analysis of the current state of the association and on a strategic analysis of future trends and directions for the development of information services. Local conditions, which both impose important restrictions and can provide certain advantages, should also be taken into account. It is necessary to distinguish between internal (national) and international cooperation as two important parts of the integration processes inherent in library and information corporations (Battalova, 2012). Such approach with an emphasis on cooperation and broad collaboration at the national, regional and international levels in the provision of information services, resources and library training will allow libraries to maintain their work and role in society at the sufficient level.

Currently, the countries of Central Asia have different levels of development of national library alliances, with Kazakhstan and Kyrgyzstan demonstrating more advanced experience in this area. There are three officially registered library associations in Kazakhstan: the Kazakhstani Library Union (headquartered at the National Library of the Republic of Kazakhstan in Almaty), the Association of University Libraries of Kazakhstan (headquartered at the Taraz Regional University named after M. Dulati in Taraz), and the Association of Librarians of the East Kazakhstan region (headquartered at the East Kazakhstan Regional Library named after A.S. Pushkin in Ust-Kamenogorsk). The Association of University Libraries of Kazakhstan and the Association of Librarians of the East Kazakhstan region have been members-associations of the International Federation of Library Associations and Institutions (IFLA) for a number of years. In Kyrgyzstan there are also 3 library associations operating as parts of the Library and Information Consortium of Kyrgyzstan: (1) the Public Association of Librarians of Kyrgyzstan, (2) the Association of Public Libraries, and (3) the Library and Information Consortium (Lapo & Davletyarova, 2020). Library associations in Kyrgyzstan are not members of IFLA or any other international library alliances, presumably due to financial constraints and language barriers (English has not yet become the working language of librarians in Central Asia, with a few exceptions). There are no library associations in Tajikistan, Turkmenistan and Uzbekistan, and international cooperation is supported at the level of individual libraries, primarily national libraries.

Library associations and libraries in Central Asia do a great job of providing information and library services to the population, promoting reading in society, improving the professional qualifications of librarians, popularizing best practices through printed professional journals, and implementing international projects. At the same time, it should be recognized that in general, libraries and librarians in the region consider international activities and participation in national and international associations and consortia as their peripheral activity. Such an attitude of the regional library community towards international cooperation, primarily in the form of associations and consortia, contradicts the reality in which libraries operate and which is characterized by the globalization of information activities, the need to overcome digital gaps in serving various communities and high international competition in labour markets and in various areas of professional activity, including higher education.

Effective cooperation can only be achieved if its participants have a number of generally accepted values, understandings, principles and standards that must be declared, discussed and adopted, which requires a great deal of preliminary work in the case of the Central Asian region.

The research objective was to identify the most important conditions and the necessary actions of stakeholders for the development of information interoperability between academic libraries in Central Asia.

Methods

The study was conducted on the basis of identifying and analysing publications on information and library interoperability, including in the Central Asian region, as well as analysing and summarizing practical experience in this area. It shows that the creation of a library association or a library consortium at the regional level will not solve the problems mentioned above unless a systematic and planned approach is implemented, in the implementation of which the creation of such a library association (consortium) is only one of the stages of their solution. In developing such an approach, it is necessary to proceed, first of all, from the cause-and-effect relationships that exist in librarianship, including in Central Asia. Therefore, the primary task should be the modernization of library education in the region based on modern requirements for the

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professional competencies and personal qualities of librarians. Central Asian librarians need a contemporary local library education, which suggests an opportunity for collaboration across governments, library associations, and universities in the region (Emmelhainz, 2020). One of the few examples of such successful collaboration is the introduction of a master's program in library and information sciences at the Tashkent University of Information Technologies named after Al-Khwarizmi in 2012 (Corradini, 2013).

Why the main focus in solving the problems mentioned above should be on library education and staff development? Because any effective and successful interaction is only possible if there is mutual understanding between its participants and their shared values and goals. That is why in the modern world, priority attention is given to the so-called "soft" skills. In addition, in the educational environment it is easier to set uniform standards and professional norms, including ethical ones, which specialists must follow in their work. As Todd Carpenter, the NISO Executive Director, noted, collaboration among institutions requires technical interoperability, consistent terminology, and shared business practices. Each of those requires trust and coordination, and standards are core elements of both things (Carpenter, 2022).

An important condition for the successful and effective solving of the problems is also the creation of conditions for regional librarians to acquire practical skills relevant to the current level of development of information and communication technologies and tools. Therefore, it is very important either to create modern sites for practical work of students at the departments of universities that train librarians or improve their qualifications, or to update the libraries of such universities as places of practice for students. Graduates of such universities will find employment in libraries of various national economy branches and thanks to such broad employment will consolidate the national library community and integrate the national information space thanks to the knowledge, skills and connections acquired during their studies.

Full-fledged professional cooperation and information interoperability between academic libraries is impossible without the creation of various forms of library cooperation (associations and consortia) and the involvement of teaching staff, students and practicing librarians in them to solve all library business issues in standing committees and special task forces.

Library schools as the alma mater of library personnel in the country and the region should become the focal points for the development of professional cooperation and information interoperability of all subjects of information and library activities in the region. At the same time, it is difficult to overestimate the interaction of library schools with national libraries and library associations that already exist. It is especially important given the centralized and hierarchical system of librarianship management inherent in the CA countries (Rakhmatullaev, 2022).

In the context of modern globalization of professional activity, it is very important to focus the attention of practicing librarians and teachers of library disciplines on the international aspects of the librarian's work - both in the field of information and library services and in the field of professional development. Of course, publications in international professional periodicals and monographs by foreign authors are a source of such information and knowledge, but the participation of regional practicing librarians, teachers and students of information and library specialties in international projects are seen to be a more productive and practice-oriented approach. The realization of such an international project is to provide an opportunity to build the infrastructure for information interoperability of regional academic libraries taking into account international standards and expertise (Rakhmatullaev, 2022). The infrastructure includes technical, social and policy infrastructure that will enable the partners to work effectively together, and all the kinds of infrastructure are equally important. The technical infrastructure that enables the discovery of network-accessible information across institutions is considered as middleware because not all institutions use the same infrastructure stack. The social infrastructure is to

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facilitate decision-making about information interoperability and further interlibrary cooperation development, and help manage governance of such a collaboration.

Results and Discussion

The approach to improving the information interoperability of academic libraries in Central Asia, in which the national library education systems are drivers of change and play a key role, has crystallized as a result of the participation of a group of experts from Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan in the preparation of the monograph "Internationalization of Library and Information Science Education in the Asia-Pacific Region" (Lapo & Davletyarova, 2020; Lapo, Makhmudov, & Rakhmatullaev, 2020). They studied the state of librarianship and library education in the CA countries, relevant decisions and regulations of government agencies, analytical reports and publications in professional and scientific journals, as well as the results of surveys of library and information workers. The experts' attention was drawn to the fact that for a number of years, at conferences, forums and meetings held in the region, leaders of the librarianship of the countries have regularly been discussing ideas and proposals for the creation of the Central Asian information and library consortium *CALINET (The Central Asia Library Information Network)*. The creation of CALINET would help solve such problems as: 1) information exchange between information and library institutions and the formation of corporate electronic information resources that are important for science and education in the region; 2) the development, advancement and application of technological solutions for the automation of information and library processes and management; 3) the development of human resources in libraries, which must meet up-to-date international standards and advanced information and communication technologies. The information resources accumulated in CALINET could become a source for research on big data in library and information sciences (Tastankulov, 2020). Academic libraries, as the most advanced technologically and in providing information and library services in the virtual environment, which is the most urgent direction in library activities today, are called upon to play the role of the backbone of the CALINET infrastructure.

The ideas for improving information interoperability between academic libraries, creating a network and modernizing library education in Central Asia were discussed with colleagues from Bulgaria, Hungary, Italy, Spain and Latvia and received their support. A joint project called *CANDELA (Central Asian Network on Digitalization of Education in Library and Information Sciences)* was prepared and submitted to the ERASMUS+ program. The CANDELA project strives to modernize and reform the system of information and library education and professional training of library personnel in the CA countries. It is designed to achieve synergy between the system of library education and the labour market through the cooperation between (1) universities preparing future librarians, (2) universities providing professional trainings for practicing librarians, and (3) the CA countries' national libraries, which are the national coordinating centres of the republican library networks covering all branches of public administration, academic institutions and industry sectors. The republican library networks form the technical, social and policy infrastructures of CALINET.

Conclusions

Academic libraries play an important role in ensuring the quality and competitiveness of higher education, as they are responsible for providing information resources and tools for effective information retrieval, as well as for training users (students, teachers and researchers) on how to use them. In order to successfully implement their mission and functions, academic libraries must

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continuously improve their activities due to such factors as highly qualified and highly motivated staff who constantly update their professional competencies; modern technological equipment of the library; constant and active participation in national and international library associations and consortia; involvement of library staff in regional and international projects. The article proposes an approach to creating such conditions for improving the activities of modern academic libraries in the context of their activities in Central Asia. It can also be implemented in other regions of the world, taking into account local conditions and opportunities.

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Проблеми та перспективи інформаційної взаємодії академічних бібліотек Центральної Азії

Мета. Стаття присвячена аналізу сучасного стану та перспектив інформаційної взаємодії між академічними бібліотеками Центральної Азії. **Методика.** Вивчено публікації на тему інформаційно-бібліотечної сумісності, зокрема в Центральній Азії, проаналізовано та узагальнено досвід у цій сфері. **Результати.** Запропоновано комплексний і системний підхід та методи розвитку взаємодії академічних бібліотек Центральної Азії. **Висновки.** Узагальнюючи міжнародний досвід міжбібліотечного співробітництва на регіональному рівні, слід визнати його успішним за умови комплексного підходу до його забезпечення, тобто створення та функціонування відповідних органів із планування, координації та моніторингу інформаційної взаємодії, підготовки та залучення до роботи персоналу бібліотеки з відповідними компетентностями, наявності відповідного програмного й апаратного забезпечення та інфраструктури.

Ключові слова: академічне бібліотекознавство; Центральна Азія; бібліотечна співпраця; бібліотечні консорціуми; інформаційно-бібліотечна інфраструктура; корпоративна мережа