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Model of Digital Competence of University Library Staff

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Abstract. The paper examines the views of scientists on the essence, structure and ways of developing the digital competence of university library staff. The influence of this process on the development of the university library is emphasized. The methodological and theoretical basis of this study was composed of leading theories and scientific schools according to a competent approach, set forth in the works of domestic and foreign scientists.
The structure of digital competence of university library staff is defined, including the following components: cognitive, functional-activity, motivational-value and communicative. Profiles of digital competencies of employees of the Scientific Library of the Siberian Federal University are proposed depending on the structure of digital competence and the selected categories of library employees: 1) cataloguers, 2) bibliographers, 3) managers, 4) employees of service departments.

Keywords: competence, competencies, digitalization, digital competence, digital competencies of library staff, profile of digital competencies, university library.

Research area: pedagogy.

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Модель цифровой компетентности сотрудников университетской библиотеки

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Аннотация. В статье рассматриваются взгляды ученых на сущность, структуру и способы развития цифровой компетентности сотрудников университетской библиотеки. Акцентируется влияние этого процесса на развитие вузовской библиотеки. Методологическую и теоретическую основу данного исследования составили ведущие теории и научные школы по компетентностному подходу, изложенные в трудах отечественных и зарубежных ученых.
Определена структура цифровой компетентности сотрудников университетской библиотеки, включающая в себя следующие компоненты: когнитивный, функционально-деятельностный, мотивационно-ценностный и коммуникативный. Предложены профили цифровых компетенций сотрудников Научной библиотеки Сибирского федерального университета в зависимости от структуры цифровой компетентности и выделенных категорий сотрудников библиотеки: 1) каталогизаторы, 2) библиографы, 3) менеджеры, 4) сотрудники отделов обслуживания.

Ключевые слова: компетентность, компетенции, цифровизация, цифровая компетентность, цифровые компетенции сотрудников библиотеки, профиль цифровых компетенций, вузовская библиотека.

Научная специальность: 5.8.1 – общая педагогика, история педагогики и образования.

Introduction

The library is one of the social and cultural institutions that have been demanded by society for many centuries, but today the content of the work of libraries under the influence of informatization is undergoing serious transformations. The competent approach led to a new view on the study and improvement of the professional development of the library specialist. The issues of determining the competence of a library employee are relevant throughout the world, which confirms the creation in 2016 of a working group on the formation of a system of strong library and information education of the International Federation of Library Associations and Institutions with the aim of developing an international quality assurance system that will define and promote educational standards in the field of library and information science.

In the Russian professional community over the past decade, the problems of determining the composition, content and formation of the competencies of library specialists have also been actively discussed. At a new level, discussions on this topic continued after the appearance of a draft professional standard for a specialist in library and information activities in 2014, which has not yet been approved, and disputes around which do not subside in the professional world.

Currently, a lot of attention is paid to the issues of changing and developing the digital competencies of university library employees by Russian and foreign scientists. Among Russian scientists, papers by G.A. Altukhova (Altukhova G.A., 2017), Baitemirova M.D. (Baitemirova M.D., 2015), Baryshev R.A. (Baryshev R.A., 2021; Baryshev R.A. et al., 2020), Elepov B.S. et

al. (Elepov B.S., Kryuchkova E.M., 2009), Carrera K. Diego (Carrera K. Diego, 2015), Kolkova A.A. et al. (Kolkova A.A., Seraya N.N., Dubko V.V., 2019), Kuznetsova T. Ya. (Kuznetsova T. Ya., 2008), Lee M.G. (Lee M.G., 2012), Makeeva O.V. (Makeeva O.V., 2019, Makeeva O.V., 2020), 2020), Mamontova M.S. (Mamontova M.S., 2012; Mamontova M.S., 2019), Sysoeva L.A. (Sysoeva L.A., 2019), Smolyaninova, O.G. (Smolyaninova, O.G. et al., 2021; Smolyaninova, O.G. et al., 2019; Smolyaninova, O.G. et al., 2019) et al. occupy a prominent place. Among foreign scientists, this problem was investigated by scientists such as Baker J. et al. (2016), Chalkiadaki A. (2018). Cox A.M. et al. (2019), Ducas A. et al. (2020), Raza Z. et al. (2019), Shen Y. (2019) et al.

Analysis of scientific research makes it possible to distinguish approaches to the competent description of library and information activities: competence as a universal characteristic of the personality of a library specialist and competence as individual qualities manifested in the performance of his professional duties. The competence of the librarian means the requirements for the personal qualities of library employees. In this sense, the concept of "competence" is used in assessing the knowledge and experience necessary for the effective professional activities of library employees. The main competencies of the modern librarian include gnostic (knowledge) competencies.

The formation of the digital competencies of the modern librarian is due not only to the development of new content of the educational system, but also to methodological, technological and didactic innovations, which are now actively used at all its structural and functional stages. It is important to note that in the modern information society, the librarian acts as an information specialist, and the digital era dictates its requirements for his competence.

The purpose of this paper is to determine the necessary competencies of library employees in the digital age.

Analysis of models of digital competencies of university library staff

Competences of the professional librarian of an era of digital communications consist of knowledge, abilities, skills and personal qualities. Today the librarian needs both general cultural knowledge, including knowledge of history, art, literature, the basics of philosophy, pedagogy, psychology and other sciences, as well as knowledge of the system of legislative acts governing the field of protection of intellectual property rights. In addition, the librarian needs an understanding of the role and tasks of libraries in the digital communication system, an understanding of the organizational structure of information activities. As the necessary skills, it is necessary to highlight the skills of working with major digital devices, searching and evaluating information from various devices. Of the personal qualities, we can note the innovativeness of thinking, activity and initiative, flexibility and adaptability of thinking, communication and leadership in combination with the ability to work in a team, the ability to establish and develop partnerships with consumers of information.

As for the development of a model of digital competencies of library employees, a large number of approaches to the formation of a competencies model of organizations employees were revealed during the analysis of the literature.

The most successful version was the multivariate model (for example, Delamare Le Deist, F., Winterton, J., 2005), since one-dimensional models do not adequately reflect the concept of "competence". Multidimensional models more clearly reflect the interaction of knowledge, skills and social components that are key to performance. Competencies necessary for the effective performance of work are reflected in four dimensions: cognitive, functional, social and meta-measurement. Meta-competencies are an entrance that allows you to master competencies. By combining these competencies in different proportions, it is possible to obtain practical competencies located on the faces of this tetrahedron. With such a multidimensional model, all the approaches considered are not in contradiction.

A. Weiss (Weiss A., 1998) listed factors that are considered to determine in the development of competencies as special states of

activity: motivation, abilities, knowledge, understanding, skills, actions and experience. The author cautioned against considering these factors as dimensions of competencies. A. Weiss points to the fact that a person may have competencies and at the same time not be motivated, therefore it is impossible to consider motivation as an element of competence, but motivation is undeniable as a factor in the development of competences.

Mamontova M.S. (Mamontova M.S., 2012) formed a model of information competence of a library specialist, which includes three components: cognitive, activity-creative and personality-motivational. The cognitive component is the completeness of theoretical knowledge, the level of knowledge that constitutes the essence of competence. The activity and creative component is the level of development of abilities and skills in the process of performing professional activities. The value-motivation component is a set of significant motives and values of a library specialist that contribute to the development of information competence, as well as the level of its introspection and self-esteem.

O.V. Makeev offers an integrated approach to building a competency model for a specialist in library and information activities. It is based on a combination of approved regulations and employer requests. For each group of competencies, a basic minimum must be determined (approved by federal bodies responsible for state supervision and ensuring compliance with the requirements for the composition of labor functions, knowledge and skills in approved documents) and a variant part that ensures compliance of the formed competencies with the peculiarities of libraries of various types (public, academic, special) (Makeeva O.V., 2020).

According to M.G. Lee, one of the grounds for developing a model of competencies of a specialist in the library sphere may be a technological approach. Its potential makes it possible to establish links between fundamental theoretical knowledge and practical activities, where this knowledge turns into specific processes and operations. The library as a technological system is a whole organism, preserving its stability and stability due to the organized interaction of all subsystems. In turn, each of the subsystems can serve as a foundation for identifying competencies. This makes it possible to create a system of professional competencies of a high level of the organization, which will reflect the essence of a competent approach – the development of qualities that allow a specialist to quickly respond to changing conditions of professional activity (Lee M.G., 2018).

Thus, the competency model is a set of characteristics that allows an employee of an organization to successfully perform functions corresponding to his or her position.

Materials and methods

Stages of the study

All the work carried out within the framework of this study can be divided into three main stages.

At the first stage, a detailed analysis of scientific sources was carried out, on the basis of which it was possible to identify existing approaches to the definition of the concepts of "digital competence" and "digital competencies".

At the second stage, the state of the problem of developing digital competence and competencies of university library staff in domestic and foreign science and the practice of higher educational institutions in modern conditions was analyzed. The influence of this process on the development of the university library in the conditions of digitalization is emphasized.

At the third stage, experimental work was carried out to develop the digital competencies of library employees at the university. The structure of digital competence of university library staff is defined, including the following components: cognitive, functional-activity, motivational-value and communicative. The content of each component is discussed in more detail. Digital competence profiles of employees of the Scientific Library of the Siberian Federal University are proposed depending on the structure of digital competence and the selected categories of library employees: 1) cataloguers, 2) bibliographers, 3) managers, 4) service department employees).

Experimental base of the study

The scientific library of the Siberian Federal University is the experimental base of this study.

Digital competence model for federal university library staff

The content of the concepts of "competence" and "skills" is multifaceted. As the basic definitions of "competence" and "skills," we shall take the following definitions:

Competence – a multifaceted and multi-structural characteristic of the personality, which establishes various connections between elements (knowledge, abilities and skills, relationships, motives, personal qualities) in the process of activity (Bekuzarova N.V., Ermolovich E.V., 2011).

Skills are a set of the interconnected qualities of the personality (knowledge, abilities, skills, the mastered modalities of action, strong-willed characteristics) providing a possibility of high-quality and productive actions in specific situations (Hutorskoi A.V., 2003).

Digital skills are necessary both for the fulfillment of professional tasks and for the full interaction of the individual with the outside world and the solution of everyday tasks.

Based on psychological ideas about the structure of the personality and on psychological and pedagogical judgments about the structure of competence, as well as by conducting a comprehensive analysis of the draft professional standard of a specialist in information and library activities, the professional activities of library employees, approaches to describing key and professional digital competencies, it is possible to determine the structure of digital competence of university library employees.

The following components are identified in the structure: cognitive, functional and operational, motivational and valuable and communicative. Consider the content of each component in more detail.

The cognitive component includes knowledge, abilities, skills and experience of intellectual activity necessary for effective processing of professionally significant digital information. This includes ideas about the prospects for the development of a digital society, trends in the digitalization of higher education and library activities, knowledge of the principles of information and data management technologies (Big Data, blockchain, virtual (VR), augmented (AR) and mixed reality (MR)), understanding the fundamentals of cybersecurity and digital hygiene.

Functional and operational includes a set of abilities and skills for using digital technologies to solve professional problems, including knowledge of methods of library and information activities based on digital technologies. The use of this component in professional activities means that the library employee must be able to perform the relevant work and be able to demonstrate high standards within the framework of his functional duties at a particular workplace using modern information technologies. This includes the ability to use basic methods, methods and means of production, storage, processing of information for implementation of different activities of libraries in digital environment, the ability to digitize the library stock and apply standards for describing and indexing electronic documents, skills of searching and evaluating digital information in various sources corresponding to the profile of scientific and educational programs of the university, understand the basics of scientific and bibliometric processes in the digital environment, the ability to digitally monitor and analyze the publication activities of university employees, and provide digital information that meets the needs of users.

Motivational and valuable includes understanding the responsibility and safety of the use of digital technologies in professional activities, taking into account social and legal norms, readiness to increase the level of development of digital professional competence. This includes the ability to apply laws and other regulatory legal acts of the Russian Federation, the regulating questions in spheres library and archiving, information, information technologies and information security, copyright and related rights in the digital environment, the ability to evaluate the achievements of bibliographic and informational work of domestic and foreign libraries, analyze and predict user

requests, the ability to create a positive image of the library in a digital environment, willingness and skills to contribute to the development of digital competencies and the formation of a digital culture of colleagues and users of the library.

Communicative includes the ability to use communicative techniques and services to carry out productive professional interaction in a digital environment. This component allows you to describe the ability of a person to communicate qualitatively and efficiently with other people in a digital environment, using various digital means that allow you to interact with other people to achieve your goals. At the professional level, it is necessary to be able to adequately interact with colleagues and users of the library, make the right decisions even in stressful situations and overcome difficulties of various nature. This includes the ability to use digital services in communication with colleagues and users of libraries, readiness to participate in digital professional collaborations, the ability to organize library design activities using digital technologies, and the skills to work with digital services to plan the work of library structural divisions.

Let us highlight and consider in more detail the main categories of university library staff:

1) **Cataloguers** – employees of the university library, ensuring the compilation of a bibliographic description of the document and the formation of access points, indexing the content with classification indexes, subject headings and keywords in accordance with established standards and rules, as well as carrying out work on the organization and maintenance of card and electronic catalogs, including their editing.

2) **Bibliographers** – employees of the university library who carry out work on organizing the library reference and bibliographic apparatus in a traditional and automated mode, as well as performing reference and bibliographic and information services for readers.

3) **Managers** – employees of the university library, leading the scientific, production, economic and financial and economic activities of the library, the centralized library system, as well as organizing the interaction of the structural divisions of the library and directing their activities to the development and improvement of the library, taking into account social and cultural priorities and the modern level of library development.

4) **Employees of the service departments** – employees of the university library who perform work on providing library processes in accordance with the direction and technology of one of the production areas (staffing, processing of the library fund, organization and use of catalogs and other elements of the reference and bibliographic apparatus, maintenance and use of automated databases, accounting, organization and storage of funds, servicing readers and subscribers).

Based on the above-described structure of digital competence and the selected categories of university library staff, we present the Digital Competence Model (see Table 1).

Based on this digital competency model, you can distinguish special (specialized) competency models that describe certain competencies and standards of behavior of employees in the course of a particular activity. Competency Profile – a list of competencies related to a particular position. The competency profile determines not only what is expected of employees, but also how they should act.

Conclusion

Thus, the rapid development of electronic library resources necessitates the formation of highly competent professionals who are fluent and efficient in digital technology. Knowledge of digital technologies determines the need for library specialists to develop digital competence. In today's environment, digital competence should be seen as an important professional development resource that ensures the mobility of library staff. But it is already clear that a significant number of employees with developed digital competencies in the organization will provide her with a competitive advantage.

The proposed model of digital competence of librarians was developed on the basis of the experience of the Scientific Library of the Siberian Federal University. It unleashes the poten-

Table 1. Digital competence model of a library employee of a federal university (in accordance with the categories of specialists in library and information activities)

Employee category	Digital Competency Components			
	Cognitive	Functional and operational	Motivational and Valuable	Communicative
1	2	3	4	5
Cataloguers	Knowledge of the procedure for formation, scientific processing and disclosure, ensuring preservation, accounting of the library document fund in the digital environment; Knowledge of theoretical and practical methods of information processing using modern technologies; Knowledge of regulatory and methodological documents on the security of library collections	Collection of the library fund with electronic documents, network resources; Microcopy and digitization of the library stock; Organization and maintenance of electronic/traditional catalogs; Storage, processing of information for implementation of different activities of libraries in digital environment; Use of electronic document description and indexing standards	Knowledge of the fundamentals of cybersecurity; Knowledge of basic methods of development of critical and creative thinking	Participation in digital professional collaborations; Use of digital communication programs in communication with colleagues in the course of professional activity
Bibliographers	Knowledge of new forms of library processes and integration with partner systems (fundamentals of scientific and bibliometric processes, etc.); Knowledge of the fundamentals of librarianship, bibliography, information work; Knowledge of achievements of bibliographic and informational work of domestic and foreign libraries	Library and information activities based on digital technologies; Use of multimedia tools in information and library activities; Monitoring and analysis of university staff's publication activities	Development of library and information projects; Creative approach to solving problems; Anticipation of user requests (proactivity); Knowledge of the fundamentals of cybersecurity; Knowledge of basic methods of development of critical and creative thinking	Use of modern means of communication in the process of information and library activities; Promoting the development of digital competencies and the formation of a digital culture of library users; Participation in digital professional collaborations; Use of digital communication programs in communication with colleagues in the course of professional activity
	Knowledge of the development prospects of the digital society; Knowledge of trends in digitalization of higher education;	Optimize information and library processes with digital technologies Organization of library cultural and educational, edu-	Self-motivation and motivation of colleagues; Manifestation of positive emotions; Understanding the state of another person (empathy);	Creating a positive image of the library in a digital environment; Participation in digital professional collaborations;

Conclusion of Table 1

1	2	3	4	5
Managers	Knowledge of digitalization trends in library activities; Knowledge of the main directions of development of digital technologies; Knowledge of new technologies of library automation system; Knowledge of the prospects of technical, economic and social development of the cultural and library industry	cational and event events; Organization of library project activities; Planning of library structural subdivisions	Knowledge of the fundamentals of cybersecurity; Knowledge of basic methods of development of critical and creative thinking	Use of digital communication programs in communication with colleagues in the course of professional activity
Service Department Employees	Improvement of professional knowledge and skills in the field of library and information processes in the digital environment; Knowledge of digital library and information technologies	Remote user service; Maintenance of library sites/portals, network social services; Use of psychological and pedagogical approaches and methods in online service of different user groups	Manifestation of positive emotions; Understanding the state of another person (empathy); Self-motivation and motivation of its readers; Anticipation of user requests (proactivity); Knowledge of the fundamentals of cybersecurity; Knowledge of basic methods of development of critical and creative thinking	Use of digital communication programs in communication with users in the process of library services; Participation in digital professional collaborations; Use of digital communication programs in communication with colleagues in the course of professional activity

tial of the employee, helps his effective work. The model is determined by the structure of digital competence of university library employees (components: cognitive, functional and operational activity, motivational and valuable and communicative) and the selected categories of library employees (categories: cataloguers; bibliographers; managers; employees of service departments).

The digital competence model of librarians is necessary in the library, as it will solve various tasks in the field of personnel management, move the library to achieve strategic goals and meet the needs of users. It is developed on the basis of corporate culture, strategic plans and other aspects, individual for each university library.

It should be borne in mind that each library has its own characteristics, norms of corporate culture, so it is not always reasonable to use standard models of competence. Nevertheless, the application of the proposed model may be justified in the libraries of the country's leading universities.

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