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Information Competence of a Library Specialist as a Condition for Their Professional Development

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ABSTRACT

The relevance of the study is due to the intensive introduction of information technology to library activities. Active use of information technology has a significant impact on the professional development of a librarian. It requires a high level of information competence. The purpose of the paper is to present and describe an information competence model of a librarian. The leading method in the study is the method of modeling which has allowed us to consider this issue as an organized process for improving professional competencies and formation of special competencies of librarians they need for effective practical activities. The paper presents the author's structure of information competence of a librarian. As a system, information competence includes objectives, functions, properties, has its own characteristics and structure which includes three components: cognitive component, activity and creativity component and value and motivation component. The study has identified the factors in information competence development of a librarian. They are divided into two groups: internal (individual and personal) and external (professional and social). The model aims at the development of professional and personal competencies to control changes in professional development. The paper is of practical value for specialists and managers of library and information institutions; for specialists of libraries and other cultural institutions for their selfeducation and practice; centers for advanced training and retraining of specialists of library and cultural institutions; for specialists of cultural institutions engaged in recruitment.

KEYWORDS

Information competence; library specialist; library; information technology

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Introduction

The current stage of the development of library and information activity is characterized by intensive use of information technology. This process is caused by the latest achievements in science and technology, the development of the global information technology market. Computerization allows the library to

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carry out its primary function more efficiently - to provide open access to information to all categories of users. It has become the key to the integration of the library into a single global information space.

Active informatization has a significant impact on the professional development of a library specialist. The rapid growth of computer park and the constant demand for electronic library resources cause the necessity for highly qualified professionals who freely and effectively use information technology (Zbarovskaya, 2005).

Mastering information technology skills is becoming the key to the high competitiveness of library specialists, contributes to the development of the librarian profession, allowing them to play an important role in the society of the future. Prospects for libraries to enter the global information space require a deeper understanding of the problems of staff development system and professional development of library specialists. Thus, information competence should be considered as an important resource for professional growth which provides a mobile library staff (Elepov and Kryuchkova, 2009).

The issue of information competence development as a condition for professional development is more relevant for practitioners who do not master the required degree of information competence for various reasons. Formation of competencies that meet the requirements of our time is one of the directions of advanced training of library specialists (Parshukova, 2006).

Aim of the Study

The aim of the study is creation of theoretical and methodological model of information competence of library specialist in the context of his professional development and experimental approbation of it.

Research questions

The overarching research question of this study was as follows:

Theoretically develop a model of information competence.

In the second experimental stage, testing of the proposed model and diagnostics of levels of information competence development of the librarians have been carried out.

Method

To solve the problem, the following methods were applied: theoretical (literature analysis, synthesis, modeling); empirical (observation, survey, testing, interview); statistical methods (ranking, comparison, mathematical method).

The bases of the study were: The National Library named after S.G. Chavain; centralized library system of the city of Yoshkar-Ola; centralized library system of Orshanka; centralized library system of Mari-Turek; centralized library system of Kilemary.

Object, subject, structure, boundaries, purpose, objectives, hypothesis, methodology, techniques and conceptual apparatus have been identified in the first search and theoretical stage based on the study of the scientific literature on the issue of the research. The study of scientific literature has allowed us to analyze the state of the research problem in the theory and practice of library science, to identify trends and approaches to its solution in related sciences, to

develop our own scientific position and theoretically develop a model of information competence.

In the third summarizing stage, analysis and systematization of the research results, refinement and updating of data, statistical processing of research materials have been conducted, research findings have been summarized, conclusions and recommendations have been formulated.

Data, Analysis, and Results

As a system, information competence includes objectives, functions, properties, has its own characteristics and structure.

The objectives of information competence development of a specialist are:

- to acquire the knowledge of computer science and information technology skills;
 - development of communication skills;
 - implementation of the interactive dialogue in a single information space.

The functions of the information competence include:

- regulation (indicators for achievement and development, acts as a system of moral norms, legal norms that need to be guided in the information society);
 - epistemology (systematization of knowledge and self-knowledge);
 - communication (providing communication in the information society);
 - adaptation (adaptation to the conditions of the information society);
- evaluation (evaluation of the significance, usefulness of the information, etc...);
- development (formation of an active life position, self-dependence, self-realization on the basis of a specific system of knowledge and standards adopted in the information society).

Information competence has the following properties:

- dualism the existence of objective (external assessment of information competence by the society) and subjective (inner self-assessment of their information competence by individuals) parties;
- relativity knowledge becomes obsolete quickly, therefore, it can be considered as new one only in a certain space-time interval;
- structuredness each person has their own knowledge bases which are hierarchically ordered in a certain system of knowledge about information, its types, properties, functions and methods of work with it, the use of information technology in professional activity;
- accumulation knowledge and knowledge bases tend to "accumulate"; new knowledge is added to existing one;
- selectivity knowledge is selected on the basis of the utility, possibility of practical use in professional activities;
- dynamism the ability to update knowledge continuously and use it in professional activity;
- integration relation of a library specialist with social-cultural environment and the development of the society as a whole;

- multifunctionality - various subject-specific knowledge bases (semantic component of the knowledge base is multifunctional) contribute to the professional development of librarians.

Peculiarities of information competence are:

- self-renewal, the application of new forms and ways to meet the information needs of subjects who adapt information competence to changing conditions:
- self-development, complication of structural-functional and organizational parameters of the entire system of information competence;
- extension of specialization of certain components and level of their interconnection and interaction.

The study has identified the factors in information competence development of a librarian. They are divided into two groups: internal (individual and personal) and external (professional and social). Internal factors include motivation, intellectual development, capacity for reflection, the desire for selfdevelopment, etc., external factors include information and library professional environment and advanced training system and self-education.

The model of information competence of a library specialist consists of three components: cognitive component, activity and creativity component and value and motivation component.

- 1) Cognitive component the level of knowledge which is the essence of the competence;
- 2) Activity and creativity component the level of skills used in professional activity;
- 3) Value and motivation component a set of significant motives and values of a library specialist, contributing to the development of information competence, as well as the level of self-awareness and self-esteem.

In developing the model of information competence, a peer structure was used as the most optimal for the library and information activities and corresponding to objectives of the study. Each component includes related competencies (clusters). The cognitive component includes 7 competencies, the activity and creativity component - 22, the value and motivation component - 5. Their total aggregate of 35 competencies describes the basic knowledge, skills and motives of a library specialist. The percentage distribution of the number of competencies (20% - cognitive component, 65% - activity and creativity, 15% value and motivation component) corresponds to the practice-oriented principle in the advanced training system and professional education. The information competence model is represented in the diagram (Figure 1).

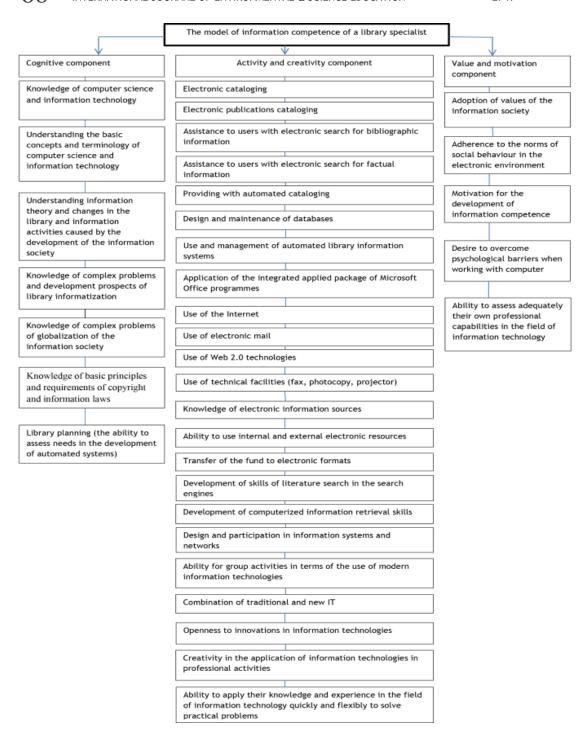


Figure 1. The model of information competence of a library specialist

To study the information competence of the librarians of the Republic of Mari El, the author's system of criteria and indicators was created which reflects the level of information competence of a librarian. It is presented in Table 1.

Table 1. Criteria and indicators for information competence

Component	Criteria	Indicators
Cognitive	cognition	formation of the knowledge of the basics of
		computer science and information technology
		formation of the knowledge of the problems
		of library informatisation
	regulation	formation of the knowledge of the basics of
A 42 24 1		information and copyright laws
Activity and	activity	level of mastering the package of integrated
creativity		applied Microsoft Office programs
		level of mastering automated library and information systems
		level of mastering the Internet technology
	interactivity	formation of creative and innovative
	interactivity	components
Value and	value	formation of patterns of cultural behaviour in
motivation	, 3,12,2	the electronic environment
		formation of positive attitudes to information
		technology
		formation of positive attitudes to the
		application of information technology in the
		library
	reflection	formation of the desire for professional
		development
		self-esteem of a specialist

The model implementation suggests the following stages of experimental work:

- diagnostics of levels of cognitive, activity and creativity, value and motivation competencies of librarians.
- development of a training programme "The basics of information competence of a library specialist" for continuing education courses.

Table 2. Average statistical distribution of competencies in the model

The list of competencies	National library named after S.G. Chavain	Libraries of the city of Yoshkar-Ola	library system of Novotoryal	library system of Orshanka	library system of Mari-Turek	library system of Zvenigovo	library system of Kilemary	library system of Sernur	The average distribution
Knowledge of computer science and information technology	10,5	33,3	20,5	14	20,5	28,33	27,33	26	22,557
Understanding the basic concepts and terminology of computer science and information technology	7	29	20,5	14,33	27	19	24	23	20,478



Table 2. Continued.

Table 2. Continue	eu.								
The list of competencies	National library named after S.G. Chavain	Libraries of the city of Yoshkar-Ola	library system of Novotoryal	library system of Orshanka	library system of Mari-Turek	library system of Zvenigovo	library system of Kilemary	library system of Sernur	The average distribution
Understanding information theory and changes in the library and information activities caused by the development of the information society	4,5	28,33	16,5	21,66	28,33	29	25,33	23	22,081
Knowledge of complex problems and development prospects of library informatization	2,5	27,33	16,5	22	31	32	27,33	27,33	23,248
Knowledge of complex problems of globalization of the information society	7,5	29,33	17,5	23	29,33	34	35	33,33	26,123
Knowledge of basic principles and requirements of copyright and information laws	16	27,66	25	17,66	20,33	12	16	17,33	18,997
Library planning (the ability to assess needs in the development of automated systems)	6,5	20,33	4,5	4,33	17,66	13	12	11	11,165
The use of computer programs for word processing, graphics, tables, etc.	17	17,66	15	11,66	24,33	27,33	28,33	29,33	21,33

Table 2. Continued.

Table 2. Continue	ed.								
The list of competencies	National library named after S.G. Chavain	Libraries of the city of Yoshkar-Ola	library system of Novotoryal	library system of Orshanka	library system of Mari-Turek	library system of Zvenigovo	library system of Kilemary	library system of Sernur	The average distribution
Electronic cataloging	5	27,33	21	16	5	4	8	6,5	11,603
Electronic publications cataloging	6	17,66	5,5	6	25	14	18	6,5	12,332
Assistance to users with electronic search for bibliographic information	14	16,33	13	11,33	16,33	18,66	16,66	20	15,788
Assistance to users with electronic search for factual information	15	16,66	14	12,33	11,33	7,33	20	19,66	14,538
Providing with automated cataloging	8	19,66	6	7,33	20	16	19,66	18,66	14,413
Design and maintenance of databases	12,5	15,33	9	9,66	32	11	19	18,66	15,893
Use and management of automated library information systems (MARC-SQL)	9	7	9	10	6,33	7,66	5	4,5	7,311
Application of the integrated applied package of Microsoft Office programmes (Word, Excel, Power Point etc.)	19	6,33	14,5	14	10	16,66	9,66	11,66	12,726
Use of the Internet	19	9,33	14,5	14,33	7	11	12	14,5	12,707
Use of electronic mail	22,5	10,33	18	17	15	12	10,33	14,5	14,957
Use of Web 2.0 technologies (blogs, social networking, mailing etc.)	24	27,33	24	12,33	21,33	27,33	28	31	24,415
Use of technical facilities (fax, photocopy, projector)	25	13,66	23,5	21,33	23,5	19,66	17,66	25	21,163



Table 2. Continued.

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The list of competencies	National library named after S.G. Chavain	Libraries of the city of Yoshkar-Ola	library system of Novotoryal	library system of Orshanka	library system of Mari-Turek	library system of Zvenigovo	library system of Kilemary	library system of Sernur	The average distribution
Knowledge of electronic information sources	18	16,33	16,5	17	19	23	22,5	25	19,666
Ability to use internal and external electronic resources	24,5	12,33	13	15	24,5	22,33	24	27,33	20,373
Transfer of the fund to electronic formats	24,5	14,66	23	22	17,66	20,33	23	26	21,393
Development of computerized information retrieval skills	16	9,66	14,5	16,66	15	18	16	13,66	14,935
Design and participation in information systems and networks	22,5	26,33	17	18,66	19	24	32,33	34	24,227
Ability for group activities in terms of the use of modern information technologies	23,5	19	17	19	19,33	20	22	21	20,103
Combination of traditional and new IT	17	8	9	14	9	18	7	8	11,25
Openness to innovations in information technologies	30,5	19	22,5	23,33	30,5	31,5	30,33	31,5	27,395
Creativity in the application of information technologies in professional activities	31,5	14,33	26,5	26,33	32	26	31	17	25,582
Ability to apply their knowledge and experience in the field of information technology quickly and flexibly to solve practical problems	21	10	20	22,33	20	24	17	22	19,541
Adoption of values of the information society	32,5	12,66	27,5	28,33	32,33	30,66	30,66	32,5	28,392

Table 2. Continued.

Table 2. Continue	eu.								
The list of competencies	National library named after S.G. Chavain	Libraries of the city of Yoshkar-Ola	library system of Novotoryal	library system of Orshanka	library system of Mari-Turek	library system of Zvenigovo	library system of Kilemary	library system of Sernur	The average distribution
Adherence to the norms of ethics and social behaviour in the electronic environment	28,5	21,66	28,5	29,33	29,33	28,5	27	33	28,227
Motivation for the development of information competence	26	15	27	27,33	24	25	26,33	22,5	24,145
Desire to overcome psychological barriers when working with computer	31	16,33	31	30,33	26,5	17	23,5	17	24,082
Ability to assess adequately their own professional capabilities in the field of information technology	31	15	30	31,66	32	26	31	22	27,332

The monitoring data have shown that library specialists realize the relevance of improving information competence as an essential element of professional development of a modern librarian in the information society. The majority of respondents (62%) believe that the information competence is an important part of professional development. 57% of respondents note that the level of information competence will determine the quality of professional work of a librarian in the future. At the same time, it should be noted that there is a group of librarians (38%) who deny the importance of the development of information competence. It is possible to conclude a double perception of this phenomenon. This indicates a problem situation in the libraries, but at the same time it is also an indirect confirmation of the relevance of theoretical understanding and the study of experience of libraries in the formation of information competence.

The level of competence was rated on a scale of 1 to 5: "1" - the lack of competence; "2" - a low level; "3" - an average level; "4" - a sufficient level; "5" a high level. Three levels of development of information competence were identified: high, average and low. To analyze the results, the differentiation of levels was adopted with respect to the arithmetic mean of indicators: low - from 0 to 2; average - from 2 to 4; high - from 4 to 5.

Such competencies as: "the use and management of automated library and information systems", "a combination of traditional and new information technology", "library planning (ability to assess the need for the development of



automated systems)", "e-cataloging", "cataloging of electronic publications", "the Internet use", "the use of integrated applied package of Microsoft Office programmes", "the use of e-mail", "the development of computerized information retrieval skills", "assistance to users with searching bibliographic information electronically" are ranked highest.

Analysis of the results of the ranking of competencies that characterize the informational competence has led to the following conclusions.

Firstly, we can state a clear predominance of the practice-oriented competencies over theoretical ones. Secondly, the list of competencies reflects the main areas of application of information technology in the library and is the basis for the development of information competence of a library specialist. Thirdly, consistent and targeted study of these competencies makes it possible to measure the level of information competence, to solve the problems of its formation, support and correction, i.e. to create an effective system of information competence development.

The diagnosis of information competence level has identified problem areas in the components of information competence:

- The results of analysis data describing the cognitive component show that 60% of librarians have theoretical knowledge at a low level; 28% at an average level and 12% at a high level. The poor theoretical base characterizes mainly rural librarians. It is caused by a small number of specialists with professional education (9% with higher education and 36% with secondary vocational education). The normative criterion causes a particular problem: 50% of respondents have a low legal culture (for example, librarians do not consider infringement of copyrights as a problem);
- Data describing the activity and creativity component indicate that such competency as "mastering application software" takes the leading place. The level of mastering was measured on a scale of 1 to 5. The level of mastering application software appeared to be low: MS Word - 3,8; MS Excel - 3,2; MS Power Point - 3,5; other programs of MS Office - 1.3; the Internet - 2.4; MARC-SQL - 1,7; office equipment skills - 3.4. The data show that the highest rates are due to the fact that librarians often use these programs not only in their professional activity, but also to meet their personal information needs. One of the lowest rates is typical of the block "Work with MARC-SQL". The reason for this is the fact that in most of the libraries ALIS was installed in 2011 and employees are at the initial stage of learning the automated library system. Based on these data we can predict the positive dynamics of the level of mastering ALIS as its use will only grow. Interdependence between information competence development and creative component has been confirmed (61% of respondents have confirmed that the growth of information competence is accompanied by creativity).
- Data describing the value and motivation component indicate the presence of two basic motives that stimulate the development of information competence of library specialists: "the improvement of professionalism", "the enhancement of self-esteem".

Data analysis has allowed us to identify the complex of motives that influence library specialists who use information technology.

It should be noted that every third respondent has psychological barriers when dealing with information technology (42% of respondents experience severe computer anxiety, 35% sometimes experience psychological difficulties and 23% don't experience any difficulties).

The factors contributing to the development of information competence (good computer technology, colleagues' high level of mastering computer technology, monetary incentives, i.e. external factors to stimulate activity) and the factors constraining the development of information competence (the lack of theoretical knowledge, the imperfection of computer technology, inadequate methodological work and the lack of training courses) have been identified.

Identification of the motivation that encourages librarians to improve the level of information competence makes it possible to determine the following patterns: the regulation of the process of development of information competence can reduce computer anxiety, the process of librarians' psychological adaptation to introduction of information technology and, ultimately, increase the efficiency of the library as a whole.

Thus, the process and the results of experimental work performed to check the effectiveness of the model of information competence of a library and information specialist indicate that the test librarians have the properties and skills which constitute information competency of a library specialist. Nevertheless, the level of information competence of the librarians of the Republic of Mari El is low: most of the librarians have a low (42%) and an average level (43%) of information competence. Only 12% of respondents have a high level of information competence.

In addition, the poor technical equipment of libraries leads to the fact that the knowledge of information technology remains of low demand. The problem of raising the level of information competence is solved through self-education. Information competence should be inherent not only in individual experts, but also in all the staff of the library. Therefore, the process of formation and development of information competence should be goal-oriented and systematic.

Discussion and Conclusion

The essence of competence and professional competencies of a library specialist is studied in the works of S. A. Ezova (2002), B. S. Elepov (2009), G. M. Kormishina (2010), S. A. Mishina (2003), S. B. Nikolaeva (2005), Y. V. Ovchinikova (2005), E. R. Sukiasyan (2004), G. B. Parshukova (2007). Competence approach in the advanced training and additional vocational training is discussed in the works of S. I. Golovko (2005), L. V. Grekova and N. V. Sorokoletova (2008), Y. N. Dresher (1996) and others.

The results of empirical research on the development of information competence of specialists in the libraries of educational institutions are presented in the works of L. A. Ulieva (2008), R. A. Chuchukalova (2010) and others.

The problem of formation of information competence of the population is discussed in the PhD thesis by G. V. Parshukova (2006). O. P. Kutkina (2006) studied the formation of media competence of a library specialist, I. N. Churikova (2004) studied computer competence of a library specialist. However, there are few studies on the problems of information competence of library specialists.



After analyzing different scientific approaches to the studied concept, we have come to the conclusion that the information competence of a library specialist is professionally significant personal quality, which manifests itself in the ability to deal effectively with the social and professional tasks with the help of information and communication technologies, to develop their information technology skills, to adapt professional knowledge to the changing environment of the information society.

The paper is of practical value for specialists and managers of library and information institutions; for specialists of libraries and other cultural institutions for their self-education and practice; centers for advanced training and retraining of specialists of library and cultural institutions; for specialists of cultural institutions engaged in recruitment.

Implications and Recommendations

The developed approaches offer a number of scientific issues for further research: generalization of scientific and methodological experience (including foreign experience) in the development of professional knowledge and skills of library specialists that form the basis of information competence; further development of methods for determining the criteria and indicators, other indicators of information competence of a library specialist; improving the process of development of information competence of a library specialist on the basis of other theoretical and methodological approaches.

To develop information competence of a library specialist which implies not only the mastery of information technology and their professional implementation in library activities, a new outlook focused on the solution of individual tasks and facilitated the success of the library as a whole is required. The development of information competence of a library specialist includes:

- additional training in the system of higher and postgraduate education focused on learning new information technology;
 - specialized courses on the basics of information competence;
- self-education as a way of individual adaptation of a specialist to the new professional duties.

The practical result of the study is the author's training programme "The basics of information competence of a library specialist" for continuing education courses, the purpose of which is the formation of information competence of a library specialist as an important condition for professional development in modern society.

The course aims at solving the following problems:

- to form information outlook (the system of views on the world of information and an individual's place in it);
- to form theoretical ideas about the basics of computer science and information technology, the basics of copyright and information laws;
- to provide knowledge and skills of modern information technology necessary for the practice of a library specialist.

Distinctive features of the course are its interdisciplinary nature, practicaloriented training, modularity of material presentation. The course consists of the following modules: 1. Information competence and modern society; 2. Library and Information Technology; 3). The package of integrated Misrosoft Office applications; 4. ALIS «MARC-SQL»; 5. The Internet in the library activity; 6. Information technology and creativity.

The whole course or its modules in the system of advanced training of library specialists contribute to understanding the essence of information competence, give an idea of the level of information competence of a librarian and help determine the ways of its further improvement.

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No potential conflict of interest was reported by the authors.

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