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## DIGITALIZATION OF LIFELONG EDUCATION AS A MEANS FOR FORMING PROFESSIONAL COMPETENCES OF STUDENTS

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## ЦИФРОВИЗАЦИЯ НЕПРЕРЫВНОГО ОБРАЗОВАНИЯ КАК СРЕДСТВО ФОРМИРОВАНИЯ ПРОФЕССИОНАЛЬНЫХ КОМПЕТЕНЦИЙ СТУДЕНТОВ

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*Abstract.* The article is devoted to the study of the role of digitalization in the organization of lifelong education as a means of developing professional competencies in the context of informatization of education. The relevance of the study lies in the study of the system for implementing the effective functioning of the mechanism of continuous education at the university, as one of the effective means in implementing the strategy for the sustainable development of students' professional competencies. The issues of continuous education should be considered as a multifaceted phenomenon in solving educational and cognitive problems, the essence of which is the formation of professional competence of students in conditions of independent cognitive activity. In this regard, it is especially important that students, mastering knowledge and methods of obtaining it, realize that independent work on writing scientific papers is designed to fulfill the tasks of all other types of educational work, since no knowledge that has not become the subject of one's own activity can be considered a true property of professionalism and competence. Considerable interest in the development of continuous education allows us to conclude that the topic of the formation of professional competencies is in demand in the conditions of informatization of education. The article develops recommendations on the formation of professional competence of students in the context of digitalization of education, as a form of active organization of the "culture of educational and labor activity of a student".

*Аннотация.* Статья посвящена исследованию роли цифровизации в организации непрерывного образования как средства развития профессиональных компетенций в условиях информатизации обучения. Актуальность исследования заключается в изучении системы реализации эффективного функционирования механизма непрерывного образования

в вузе, как одного из эффективных средств в реализации стратегии устойчивого развития профессиональных компетенций студентов. Вопросы непрерывного образования следует рассматривать как многостороннее явление в решении учебно-познавательных задач, сутью которого является формирование профессиональной компетентности обучающихся в условиях самостоятельной познавательной деятельности. В связи с этим особенно важно, чтобы студенты, осваивая знания и способы их получения, осознавали, что самостоятельная работа по написанию научных работ призвана выполнить задачи всех других видов учебной работы, поскольку никакие знания, не ставшие предметом собственной деятельности можно считать истинным свойством профессионализма и компетентности. Значительный интерес к развитию непрерывного образования позволяет сделать вывод о том, что тема формирования профессиональных компетенций востребована в условиях информатизации образования. В статье разработаны рекомендации по формированию профессиональной компетентности студентов в условиях цифровизации обучения, как формы активной организации «культуры учебно-трудовой деятельности студента».

*Keywords:* continuing education; informatization of education; information technology education.

*Ключевые слова:* непрерывное образование; информатизация образования; информационные технологии образования.

Scientific information today is a resource that determines the level of development of the state. The digitalization of the system of continuous education at the university can be safely called as a strategic course of society.

*The relevance* of the study lies in the study of the implementation of the effective functioning of the system of continuous education at the university, as one of the effective mechanisms for implementing the strategy for the sustainable development of students' professional competencies in the context of informatization of education.

The educational process of the student is accompanied by a large amount of independent work that the student must be able to perform. This has a positive effect on the professional competencies and potential of the future specialist, mastering the information culture is the key to a future qualified and successful work activity. The skills of independent search for information contribute to improving the quality of assimilation of lecture material, working with basic and additional literature, improving the received knowledge in the process of educational activities.

*The purpose of the study* is to develop recommendations for the formation of professional competence of students in the context of informatization of education, as a form of active organization of the “culture of educational and labor activity of a student”.

*The objectives* of the study are to determine the place of information technologies in education in the formation of students' professional competence in the conditions of informatization of society.

*Scientific relevance with a brief review of the literature.* The modern period of the development of society is characterized by fundamental changes: the acceleration of the pace of technical development, the creation of new intellectual technologies, the transformation of information into the most important global resource of mankind. There is a process of transition of society to a qualitatively new era, called the information society, where information and knowledge occupy a dominant position. Under these conditions, in order to fruitfully navigate in a huge,

constantly replenished information space, a correct approach is needed in organizing independent learning activities of students in the context of informatization of education.

The importance of organizing continuous education of students is emphasized in the scientific research of E. R. Nurkulova and M. R. Nurkulova, which resulted in the development of a concept, the essence of which is to assert the thesis that "... the formation of professional competence in the conditions of informatization is possible only with the organization of special training for modern consumers of information, that is, with the organization of continuous education of students" [1, p. 336–342].

Proposed by E. R. Nurkulova and M. R. Nurkulova the interpretation of the concept of "organization of continuous educational activities of students", along with the definition of the concept, includes the rationale for the general methodological principles of information education, the model of the training course for the organization of educational and cognitive activities of students, which says: "information culture of the individual is one of the components of the general culture of man; a set of information outlook and a system of knowledge and skills that provide purposeful independent activity to optimally meet individual information needs using both traditional and new information technologies" [1, p. 336–342].

In the "Program of information and communication technologies in the Kyrgyz Republic", it was stated that "... For universities, the social order of the information society should be considered to be the provision of the level of information culture of the student, necessary for work in a particular field of activity. Moreover, along with the study of theoretical disciplines of the information direction, a lot of time should be devoted to computer information technologies, which are the basic components of the future field of activity ... Therefore, in the informatization program, special attention should be paid to the informatization of education as a direction associated with the acquisition and development of human information culture. This, in turn, puts education in the position of an "object" of information, where it is required to change the content of training in such a way as to provide the future specialist not only with general educational and professional knowledge in the field of computer science, but also with the necessary level of information culture" (<https://kurl.ru/BCwZb>).

The achievement of this goal today should be based on a new system of advanced and developing education, on a radical strengthening of managerial and pedagogical activities and the introduction of new information technologies in education, including the forms and methods of the information retrieval system, into the educational process. in the educational process.

In the context of the pandemic, it has become objectively inevitable to reduce the share of all types of classes with a teacher in the educational process and transfer the main burden to the independent work of students, noted by the authors as: I. R. Gafurov, G. I. Ibragimov, A. M. Kalimullin, T. B. Alishev [2, p. 101–112].

This means that all teachers face the task of its effective and reasonable organization, management, and provision. The basis for improving the quality of the system for training highly qualified specialists is the use of pedagogical tools that integrate new information and traditional educational technologies as a mass consumer culture in the information society of the XXI [3, p. 106–112].

"Informatization of education has led to the fact that information has become the highest value, and information culture has become a determining factor in the competent professional activity of a student. In addition, all human activities are associated with the processing of information" [4, p. 55–59].

An important link in the development of information competence is information culture. The

role of information training is great, and when conducting research work, it is one of the important factors in research activities [5, p. 87–92].

Consequently, in the new conditions, the need for active formation of a competent professional activity of a student becomes obvious. The scientific basis for the process of organizing continuous education as a means of developing professional competencies in the conditions of informatization of education should be the introduction of an information retrieval system into the educational process.

By definition, D. G. Kochergina, E. E. Zhernova and N. R. Nurmeeva, the main features of the information society are: resolution of the contradiction between the information avalanche and information hunger, the so-called information crisis problem; priority of information in comparison with other resources; information economy is the main form of society development; information technologies, covering all spheres of social activity of the state and the individual, acquire a global character; formation of the information unity of the entire human civilization [6, p. 406–409].

In the period of the information society, it is necessary to prepare a person for the rapid perception and processing of large amounts of information, mastering modern means, methods and technologies for working with information. A person must have a certain level of culture of handling information. Today's educational activity of a student is characterized by active interaction with the new information environment that has emerged as a result of a dynamically developing information society, which is characterized by such phenomena as: globalization of processes and phenomena in society with the transformation of information into the most important global resource of mankind; an increase in demand for an information product and securing the status of an economic category for it; the emergence of an information product offer and the emergence of an information market; the emergence of a new type of competition and the creation of a new information environment [7].

The study of the problem made it possible to create a model of the system of continuous education in the conditions of informatization of education.

The information environment, as the basis of a single information space of the country, includes the following main components: telecommunication environment; information resources, information systems and mechanisms for providing services based on them; organizational infrastructure that ensures the functioning and development of the information environment; system of training and retraining of specialists and users of the information environment [8, p. 49–61].

Today, it becomes relevant to introduce a discipline into the curriculum that contributes to the formation of a student's information culture, which should contribute to the development of students' cognitive independence. The organization of continuous education as a means of forming professional competencies in the conditions of informatization of education must be considered as an integral part of the student's training program for mastering the curriculum.

The main goal of the program should be the formation of a knowledge system necessary for making decisions on organizing an independent search for information.

The specific goals of the program are as follows:

- Help students to master the skills of independent search for information necessary for their academic work;
- To give skills to use the traditional reference and search apparatus of the library (fund of reference publications, catalogues, file cabinets);
- Show the possibilities of using information technologies in educational activities (electronic catalog, Internet, full-text information retrieval databases, information and legal system);
- We help to master the method of information retrieval for writing and designing abstracts,

term papers, diploma and other scientific papers in accordance with the requirements of state standards of higher professional education [9, p. 80–82].

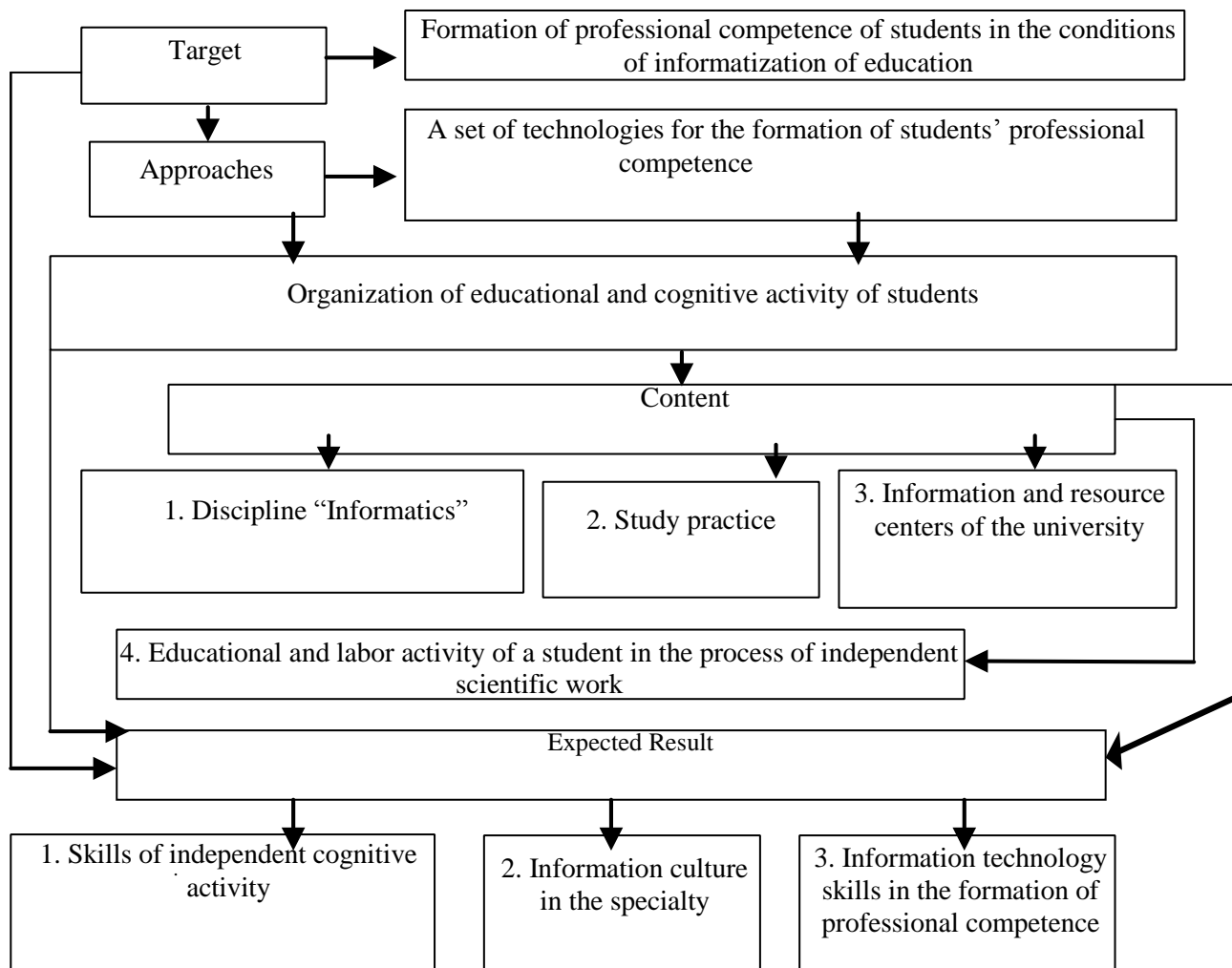


Figure. Model of information technologies in the formation of professional competence of students

Information resource centers are the information and business center of a higher educational institution. Its goals and objectives are to provide access to knowledge in the learning process. Information centers have rich experience in the field of searching and obtaining the necessary data, and at the present stage, not only from their internal, but also from remote sources. A group of researchers like N. S. Semenov, D. G. Kochergin, E. E. Zhernov, the level of information culture of a modern person is defined as awareness of one's needs, knowledge of publicly available sources of information, the ability to use these sources, search and find them [10–12].

*Methodological recommendations for the organization of continuous education.* Modern achievements in the automation of the information retrieval system, carried out in the Information Resource Centers, put forward the problem of user training among the priorities, and it is advisable to start training already from junior courses. Therefore, the program of educational practice should include a topic on search methods in the automated information-basic system (AIBS): IRBIS; Advizer; Electronic library system IPR BOOK etc.

Taking into account the requirements of the State standards of higher professional education, foreign experience in the field of information education [13], as well as the current level of development of information technology tools and practical work on preparing students of various

specialties, a number of issues can be identified, the consideration of which contributes to the targeted formation of a given level of information culture among specialists. In the process of organizing continuous education through the promotion of an information retrieval system, students are invited to consider the following issues for training practice:

1. *Scientific information in the educational process.* Effective use of information in the educational process. At this stage, the student must be aware of the role of scientific information in the educational process: the relationship between the effective use of information resources and the development of society; information culture; types and forms of information, forms of information presentation: text, sound, image; source documents; electronic document; reproduction and transformation of information; secondary documents; copying; replication; translation.

2. *Types and types of literature.* At this stage, the student should be able to distinguish between the following types and types of literature: textbooks and teaching aids; reference publications; bibliographic indexes; information publications; scientific and popular science literature; dissertations and abstracts; deposited manuscripts; official and regulatory documents; periodicals.

3. *Bibliography and its importance in the educational process.* The listener should know: the importance of bibliography in the educational process; a general idea of the role of bibliography in the educational process; modern systems of bibliographic information; general characteristics of bibliographic objects; types of bibliographic aids: index, list, review; types of bibliographic aids and features of their classification; bibliographic information system; state bibliographic indexes; scientific auxiliary, bookselling and other bibliographic aids.

4. *Information and resource centers of the university as an information base.* At this stage, the student should know the role of information resource centers in meeting the scientific and educational needs of the student: University Scientific Library (characteristics of the fund, structure, rules of use, funds, mode of operation); rights and obligations of readers; information culture of users; information Services; MBA (Interlibrary Loan); additional (paid) library services; electronic resources of the Scientific Library and the Resource Center; electronic catalogs of NB; full-text databases; access to full-text databases.

5. *Main information and resource centers of Bishkek.* The listener should be familiar with the system of libraries and resource centers in Bishkek: the main types of libraries, their features, service rules; Republican Scientific and Technical Library (RNTB. Funds and services); National Library of the Kyrgyz Republic named after. A. Osmonova (characteristics of the fund, legal deposit, rare fund and its features); National Book Chamber.

6. *Reference and search apparatus of libraries.* At this stage of the lesson, the student should know the meaning of the reference and search apparatus, its role in the organization of reference and information services, library catalogs, their role in the disclosure of library funds, its purpose, structure and organization. principle.

7. *Information search skills.* It tells about the modern purpose, the structure of information retrieval systems: library classifications; location of cards in the systematic catalog; alphabetical-subject index to the systematic catalogue; directories, reference and reference cards in the catalog; book code; book requirements.

8. *Information technologies in information resource centers.* At this stage, the student should have an idea of what information resources, products, services and their market are: access to information resources; new information technologies; automated information and library systems IRBIS, SCANAR, Interregional List of Articles; information resources of libraries; electronic catalog of books; electronic catalog of articles of periodicals; electronic catalog of teachers' works;

search strategy; make a request; search and selection of documents; formatting search results; features information on CD-ROM, DVD-ROM.

9. *Electronic reference and legal systems.* The listener should know about the main characteristics of electronic legal reference systems (ATS): ATP Consultant; legislation of Kyrgyzstan; tax calendar; business information; completeness, chronological coverage, updating; types of search: thematic, by details, by keywords; context search; respondents and correspondents; link to the document; Text editor; system features; search types; search technology.

10. *Look for information in Internet resources.* At this stage, the student should know: Internet; local and global computer networks; hypertext systems; information retrieval (IP); types and varieties of IS: bibliographic, factographic, sectoral, thematic, full text, etc.

11. *Stages of information search.* The student must know the stages of information search: the formation of the task, its implementation, storage and processing of data, presentation of results; search engines; review of Kyrgyz, Russian and foreign search engines; make a request; search area; search depth within the document; request language; output of search results; electronic libraries; catalogs and databases; economic information on the Internet; full-text databases and access to them.

12. *Registration of scientific works.* At this stage, the student must know the standard requirements for the design of scientific work: types and structure of scientific works; language and style of scientific work; compositional construction; title page layout; content and title; registration of the list of references; location of information in the list; bibliographic description of the document. GOST 7.1-84; description of the works of the 1st author, a team of authors, analytical description (articles, chapters, etc.); design of bibliographic references and footnotes; design of scientific articles using Word text editors, application practice.

Such an integrated approach to learning should help students navigate the world of information more freely, expand their system-information picture of the world, and therefore should serve to increase the level of information culture of the individual.

### *Conclusion*

Summing up the results of the above study, we can conclude that the subject of the organization of lifelong education that we are considering as a means of forming professional competencies in the conditions of informatization of education in the first and second years should reveal all the functions and capabilities of information centers and allow the student to independently and competently navigate in the funds of information centers of different types and structures.

It is important for a future specialist to correctly evaluate the information received, use it, store and process it for their own needs, if necessary, transfer it for collective use, and create new information at a qualitatively new level.

For a person, continuous education in the conditions of informatization of education takes place throughout life; and for a future specialist, it is laid in the period of obtaining professional knowledge. Consequently, the task of the education system is to educate a specialist in those foundations of information culture and student independence, which in the future will serve as the foundation of the entire professional culture of society as a whole. From the success of the formation of the information culture of future specialists in a particular country, the role and place of this state in the world community will be determined.

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