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## **INFORMACJA I KSZTAŁTOWANIE KOMPETENCJI KOMUNIKACYJNYCH PRZYSZŁYCH WYKWALIFIKOWANYCH PRACOWNIKÓW W ASPEKTACH INFORMATYZACJI SZKOLNICTWA WYŻSZEGO**

### **INFORMATION AND COMMUNICATIVE COMPETENCE FORMATION OF FUTURE QUALIFIED EMPLOYEES IN THE ASPECTS OF HIGHER EDUCATION INFORMATIZATION**

**Streszczenie:** Idea „społeczeństwa informacyjnego” jest szeroko badana. Analizowane są główne zadania i szczególne cechy informatyzacji we współczesnej edukacji. Potwierdza się konieczność posiadania przez nowoczesnego nauczyciela kompetencji informatycznych. Zdefiniowano rolę, dokonano analizy cech szczególnych i zidentyfikowano komponenty kompetencji w zakresie informacji i formacji komunikacyjnej przyszłych wykwalifikowanych pracowników, a także działania podjęte w celu ich utworzenia.

**Abstract:** The essence of the “information society” concept is widely examined; the main tasks and peculiarities of informatization in modern education are analyzed; the information competence necessity for a modern teacher is proved; a role has been defined, the analysis of peculiarities has been made and the components of the information and communicative formation competence of future qualified employees have been identified, as well as the actions taken for its formation.

**Słowa kluczowe:** kompetencja informacyjna i komunikacyjna, wykwalifikowani pracownicy, informatyzacja edukacji, kompetencje informacyjne nauczyciela

**Key words:** information and communicative competence, qualified employees, informatization of education, information competence of a teacher

The fast development of the world and information society is aimed at professional education to achieve the task of forming a person who can think

creatively, quickly acquire new knowledge and be able to apply it to find a solution in new non-standard situations. A modern graduate of a higher institution must be competitive in the labor market, and to become such a person, when studying he should acquire not only highly specialized, but also systemic fundamental knowledge that leads to the holistic perception of the world scientific picture, the intellectual development of a person and its adaptation to rapidly changing socio-economic conditions and technological development.

The transition from industrial to the information society has also changed the gist of the professional work of qualified employees, because a modern qualified employee is a representative of the production processes manager, whose duties include not only understanding and managing the actual production process, but also the deduction of its potential opportunities, market influence, scientific-technical progress, social changes, etc.

Moreover, modern socio-economic conditions require a specialist to have continuous improvement of professional skills and knowledge of the latest workings, modernization and inventions. The solution of this task is possible on the condition of the employee's sufficient knowledge of the informational and communicative competence, his active creative search, which in its turn can exist only provided the improvement of the learning process, in particular, by means of information and communication technologies introduction in the educational process is held.

According to O. Klymenko [1], the use of traditional technical means does not lead to the learning process intensification, while the introduction of the information and communication technology into the educational process provides an opportunity to improve the quality and efficiency of the learning process, provide a high level of student motivation and gives a chance to individualize the learning process.

The questions of educational process informatization, as well as informational and communicative competence formation of specialists are studied in the scientific works of many foreign and our native researchers, among which one can find works of such scientists as N. Abu-Amara [6], V. Bykov [3], O. Glazunova [4], N. Morse [4], M. Castells [5], S. Pypert [7], T. Poyasok [8], D. Sanford [6], O. Spivakovsky [2], V. Chang [6], etc., who conducted research on the problems of educational process informatization; M. Kisil [10], I. Kostikova [11], N. Kulga [9], T. Kurova [13], L. Khudolii [12], and others, who carried out scientific investigations as for the informational and communicative competence formation of specialists.

However, the pedagogical literature analysis allows us to make a conclusion that, despite the large number of works presence, the problem of the informa-

tional and communicative competence formation of future qualified employees is not considered to be enough and therefore requires a more thorough study.

### **The main material presentation**

Each historical stage of the society development is accompanied by factors that determine the direction of its development. As E. Dubrovsky claims, the level and nature of social communication, technology and technique of so-called information-exchange processes are the dominant factors of the society development at the beginning of the XXI century [14].

The concept of "information society" appeared in the early 90's of the twentieth century and is defined as a society of knowledge economics and global competence. According to V. Bykov [3], N. Morse [4] and O. Glazunov [4], the main objective factors of the information society emergence is the sharp emphasis that is paid to the knowledge and information part, which become an important strategic resource of a society, provide adequate development of the personality, accelerated development of high-tech branches of the economics.

The definition of M. Castells points out that commonly accepted features of the information society are: the possibility to obtain information on any issue; the availability of the information technology and the corresponding infrastructure necessary for work in the state; wide development of communication networks; information transfer on a global scale; ensuring the formation of a single world information space [5].

Today the professional training of a specialist acquires new features and directions, one of which is the informatization of educational process. Foreign scientists and researchers N. Abu-Amara [6], D. Sanford [6], V. Chang [6], S. Paypert [7] and others, as well as Ukrainian scholars, contributed greatly as for solving problems of educational process informatization.

V. Bykov believes that informatization of educational process is a set of interrelated organizational and legal, socio-economic, educational, methodological, scientific and technical, production and management processes aiming at fulfilling information, computing and telecommunication needs (other needs that are associated with the introduction of information and communication technologies methods and means) of the educational process participants, as well as those who manage and provide this process (including its scientific and methodological support and development) [3].

The main goal of the educational informatization process is to increase the efficiency of the educational process through the transition from illustrative and explanatory methods as well as the mechanical getting of factual knowledge to

mastering the ability of acquiring new knowledge without any help, expanding the amount of it and improving the quality of information presentation, improving methods and techniques for its processing, as well as the necessity for participants of the educational process to acquire practical skills how to use advanced information technologies in a particular activity [8].

Informatization of education allows to take into consideration the multiplicity of directions of use of informational technologies within the educational establishment, involves the creation of a single information and educational space on the basis of informational and communicative technologies, setting up communication between the participants of the interactive informational exchange. At the level of a separate institution of higher education, informatization of education provides the use of informational technologies for the organization of educational process, provision of scientific-research work and implementation of administrative and management functions.

Modern information technologies are characterized by the presence of the World Wide Web, e-mail, providing wide communicative opportunities. Therefore, information technologies can be called informational and communicative technologies.

The use of informational technologies in the educational process puts tasks before psychological and pedagogical sciences that require a review of the fundamental provisions of the theory of learning, rethinking of the experience of implementing new informational technologies, analyzing and evaluating the possibilities of their use in the professional training of qualified employers. Creating the theoretical conception of computer training, scientists should have taken into consideration the technical capabilities of computer technologies, general psychological and pedagogical patterns of educational activity, and separately – the peculiarities of the use of informational technology in the training of qualified employers. [15, p. 36].

The realization of information and computer technologies into education has led to the appearance of new forms of learning, based on electronic means of processing and transmitting information.

The up-to-date (modern) level of information and computer technologies development greatly enhances the access to learning information for teachers and students, improves the efficiency of educational management institution as a social-pedagogical system, simplifies the integration of the regional system of education into national and world, greatly facilitates access to international sources in the branch of education, science and culture, etc. [16, p. 95].

O. Spivakovsky notes that the use of modern information technologies in education helps to discover, to preserve and to develop the individual abilities

of students which exist in each person as a unique combination of personal qualities; the creation of cognitive interests, the desire for self-improvement and self-actualization of schoolchildren; provides the complexity of studying the phenomena of reality, the relationship between natural science, technology, humanities and art; permanent dynamic updating of the content, means, forms and methods of learning and educational processes [2, p. 254].

As S. Sysoev notes, the functions of informational and communicative technologies in higher education are [17, p. 17]:

- social – recognition the role played by informational and communicative technologies in society today, representation of educational institutions the interests of society;
- pedagogical – support of the process of teaching, providing more modern and high-quality materials, increasing the efficiency of communication between the teacher and the student;
- professional – preparing students for the types of professional activities that require the skills of using informational and communicative technologies;
- administrative – automation of administrative and economic activity and educational process of a higher educational institution, ensuring their openness.

As N. Kulga notes, one of the most important tasks of informatization of education is the formation of information competence of a specialist whose level of formation is determined firstly, by knowledge about information, informational processes, models and technologies; second, by skills and abilities to apply means and methods of processing and analysis of information in various activities; thirdly, by the ability to use modern informational technologies in professional activities; fourthly, by the outlook of the world as an open informational system [9, p. 193].

So, there is a problem of the formation of the informational and communicative competence of future specialists, in particular qualified employers, which includes the inconsistency of students' professional training with modern requirements for graduates of higher education who are not able to use the opportunities of informational and communicative technologies in professional activities and resources of the World Wide Web for implementation tasks of professional direction.

The important condition of using ICT in higher education is teachers' interest in using them. But the conservative views of the personnel of higher educational institutions, the great pedagogical load, the low level of informational and communicative competence of teachers, the absence in most of them of basic

psychological and pedagogical training and preparation for the use of informational and communicative technologies in the educational process negatively affect the effective implementation of ICT in teaching of future qualified employers. M. Kysil [10], I. Kostikova [11], L. Khudolii [12] emphasized the necessity of the development of informational and communicative competence of teachers of higher education, changing the role and character of the teacher in the conditions of informatization of education.

Information and communication competence is understood as the integral characteristic of a person, which involves the motivation to master the relevant knowledge, the ability to solve problems in training and professional activities through computer technology and devices [13].

Components of ICT competencies, described by the International Society for Technology in Education (ISTE) [18]: ICT Vision: Understanding and Understanding the Role and Importance of ICTs for Work and Life-long Learning; ICT culture: a way of understanding, constructing, world-view vision of digital technologies for life and activity in the information society; ICT knowledge: a set of factual and theoretical knowledge that reflects the ICT industry for learning and practical activities; ICT practice: the practice of applying knowledge, skills, skills in the field of ICT for personal and public vocational and educational purposes; ICT-Improvement: the ability to improve, develop, generate new ICTs and ICT tools for learning, professional development, and personal development. That is, ICT competence today is an obligatory part of the professional competence of a specialist of any direction.

We agree with the opinion of L. Khudolii, who thinks that the integration criterion of a teacher's thorough preparedness in modern conditions can be represented by a triad of qualities: pedagogical skill + art of communication + application of new technologies [12]. According to I. Kostikov, "in the presence of the ICT competence of the teacher and the student, one can speak of the effectiveness of education: literacy (general and professional) → education and experience → professional competence and self-education → culture and mentality" [11, p. 39]. We agree with the opinion of L. Khudolii, who believes that the integration criterion of a teacher's thorough preparedness in modern conditions can be represented by a triad of qualities: pedagogical skill + art of communication + application of new technologies [12].

Thus, the level of ICT competence of the teacher becomes one of the decisive conditions for the successful use of information and communication technologies in the process of training the future skilled worker and is one of the problems of informatization of modern higher education, namely: the problem of the readiness of teachers of higher educational institutions to work with information – communication technologies, electronic learning tools, software products

for professional use and the ability to combine tools and methods of traditional and computer education. Despite the outline, the process of implementing ICTs in higher education institutions tends to be spontaneous, under the conditions where there is an urgent need for informatization of the educational process based on the widespread use of information technology education in the lack of elaboration of pedagogical aspects of the use of these technologies in higher education institutions and is accompanied by a number of contradictions, as indicated by M. Kademiya, M. Kozyar, T. Tkachenko, L. Shevchenko [19], such as: orientation only on the possible didactic potential of information-computer thinner technologies (increase of visibility, operational control, training of typical skills, increase of interactivity, etc.), and not on the necessity of development of educational process with their use; orientation of models of use of information and computer technologies to improve the efficiency of the teacher and student in the framework of traditional goals, results and content of training, when a part of the functions of the teacher is transferred to the computer that does not allow to fully use the potential of the latest information technologies and to modernize the learning process; use of information and learning environments only as an instrument, means of activity and communications, sources of information, without paying much attention to its content part and pedagogical conditions for its effective functioning.

Today, information has become a social strategic resource that provides the competitive advantage of higher education institutions, among them competitive competition in the educational services market, in this regard, significant changes in the role of information and in the management of higher education institutions are taking place. The decision of these difficulties heads of higher educational institutions are solved by means of information and computer technologies of the information system of the higher educational institution, which contains information on the organization and monitoring of the initial activities of students.

An information system that provides quality monitoring that meets the needs of a particular institution will reflect: student achievement and performance indicators; opportunities for graduates to get a job/job placement; satisfaction of students with the educational programs they perform; the effectiveness of the teachers; character of the student's staff; available teaching resources and their cost; key indicators of the activity of this educational institution is one of the components.

According to P. Lizunov, A. Biloshchitsky, R. Lisnevsky, T. Lyashenko, the information system, which, on the one hand, provides access to the necessary, valid, consistent and complete information necessary for users, on the other hand, is a necessary tool for the activities of employees higher education and

student training, allows managing processes, data and people, can be considered in terms of supporting the life of a higher education institution [20].

Accepting the opinions of scholars, we believe that the effective use of information and computer technologies in the process of training future skilled workers in a higher educational institution will be effective if:

1. they will be presented as a systematic method of designing (from the goal to the learning outcomes, implementation, adjustment and subsequent reproduction of the learning process);
2. focused on the creative development of the student's personality;
3. the personnel and material and technical resources of the higher education institution will be mobilized and effectively used;
4. the process of informatization of the activity of the higher education institution will be of a complex nature, meet the requirements of the world quality management system and go in two directions: the use of information and computer technologies directly in the educational process and scientific activities, and for the organization and pedagogical monitoring of the professional training of future specialists.

The organization of professional training of a future specialist in a higher education institution involves the following areas of use of information and communication technologies:

- as a means of learning that provides both the optimization of the process of knowledge and the formation of an individual style of professional activity;
- as a subject of study, which involves familiarization with modern methods and technologies of information processing, taking into account the specifics of the organization of information processes in the professional environment;
- as an instrument for solving professional problems, managing and monitoring the process of professional training.

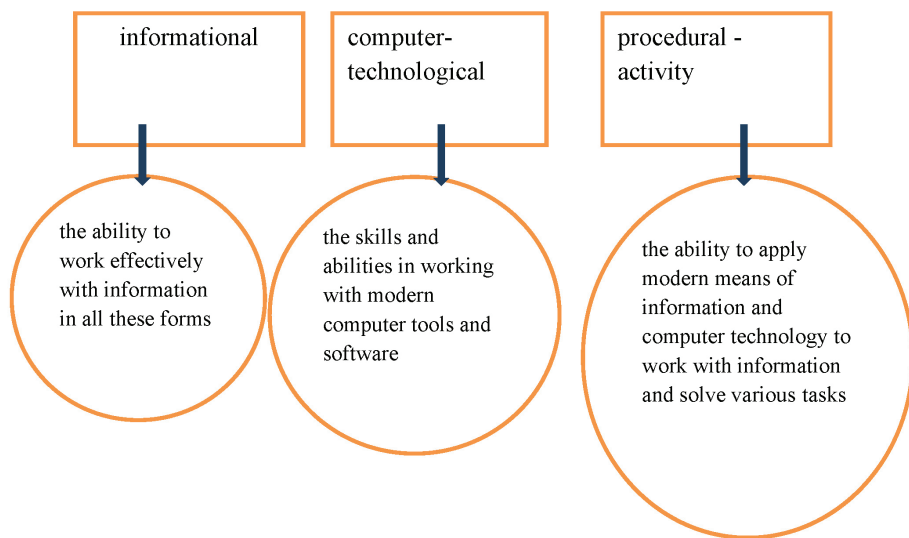
Taking into account the functions and directions of the use of informational and computer technologies in the activity of a higher educational institution, informational subsystems of a higher educational institution can be divided into logical units:

- informational and subject unit – provides professional training of a future specialist, includes: direct use of informational and communication technologies in the process of vocational training and research work; informational and substantive accompaniment of the specialist training process; computer diagnostics of knowledge, which is an integral part of the learning process and is related to the administrative component;



- administrative-organizational unit – provides planning, control, accounting, analysis, regulation, data exchange, that is, to provide the organization and support of the specialist training process;
- site of the higher educational institution – a link connecting the informational-subject and administrative-organizational units and performs the following functions: reporting to external users and students of operational information about the activity, present and scientific achievements of the educational institution; organization of educational process; support for communication with other scientific and educational institutions; realization of access of students to electronic educational resources.

Taking into account the directions of use of information and communicative technologies, in the information and communicative competence of a skilled worker we can distinguish such components as information, computer-technological and procedural-activity (Pic. 1).

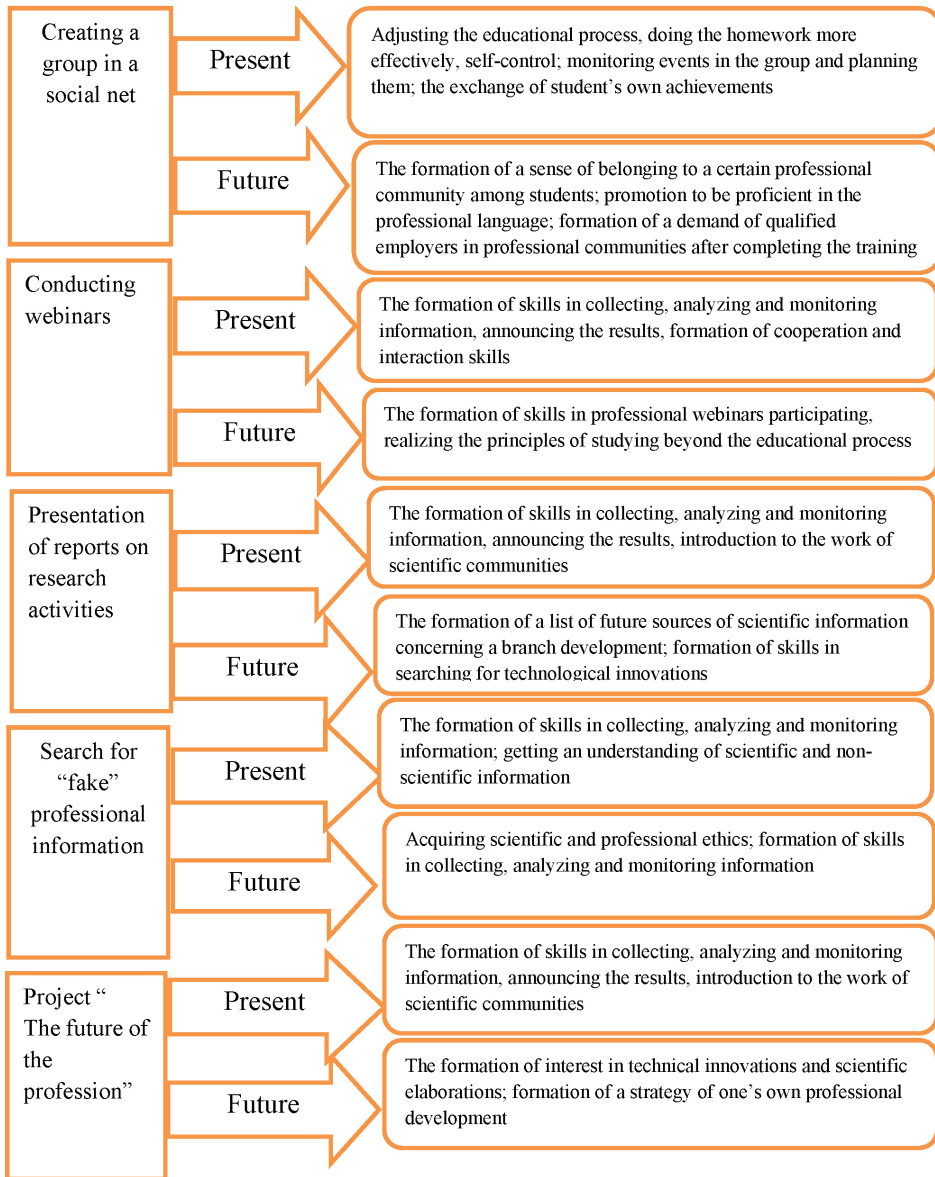


**Pic. 1. The components of information and communicative competence**

These components reflect the functions of information and communicative competence of future skilled workers, which are:

- Cognitive, aimed at systematization of knowledge, knowledge and self-knowledge.
- Communicative, aimed at reception and transmission of information.
- Adaptive, which allows you to adapt to life in the information society.

- Normative, which is subject to the moral and legal norms of the information society.
- Informative, which characterizes the ability to navigate in fast-moving information flows.
- Interactive, which provides self-development, self-realization of a person.



**Pic. 2 Activities for information and communicative competence of future qualified employees**

In order to create the information and communicative competence of future skilled workers, we consider it expedient to implement the following measures:

1. Creation within the training group of its own information and communicative environment based on social networks. To create a group you can use such world-wide networks as Facebook, Twitter, LinkedIn, or Ukrainian – UkrOpen, Ukrainians, Friends and others.
2. Conduct webinars with the participation of future skilled workers as presenters. You can use Google+Hangouts, Skype, AnyMeeting, FastWebinar, OnWebinar, and others.
3. Presentation by students of scientific publications on research work carried out within the framework of the activities of scientific societies, research institutes and patent organizations.
4. Searching for and providing students with “fake” professional information on the Internet.
5. Presentation by students of the “The Future of the Profession” project.

The above-mentioned manners include obtaining the results, oriented both for today and the future (Pic. 2).

## Conclusion

Thereby, modern information society requires ability to perform professional tasks, ability to think independently and critically, to have a creative approach to solving professional tasks, focus on the latest elaborations and inventions from the future qualified employer. It means that ability of a professional employee to constant self-improvement becomes a guarantee of his professional success.

Every year the role of information technology increases in the organization of educational process, including the training of qualified employees. A large number of modern educators are increasingly using computer-based methods of education, which help to activate pupils' cognitive activity. Modern information technologies are characterized by the presence of the World Wide Web, emails and provide broad communicative possibilities, which help to process the data, improve the pupils' work, manage an educational process, endorse taken decisions.

The growth of the information load in production processes requires a high level of information and communicative competence from a qualified employee. Its formation is accompanied by a change in the depth of a holistic state of personal identity and activity, the formation of the life goal occurs, the orientation

for education lifelong is formed as a priority by a qualified employee.

In the process of communicative formation of future qualified employees it is advisable to use the following information technologies: multimedia presentations, eBooks and manuals, video and audio recourses, on line tests, cloud technologies, Internet communication.

Conducting activities in the educational process to create the information and communicative environment in a tutorial group, conducting webinars, presentation of scientific societies, revealing of distorted and non-scientific information on the Internet, work on the prospects of professional development, etc., can significantly increase informational and communicative competence of a future qualified employer and guide to his self-development and professional self-improvement.

Perspective research directions are considered to be the formation of informational and communicative competence of a future qualified employer by means of interactive technologies.

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