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## **INFORMATION COMPETENCE AS A NECESSARY COMPONENT OF A SYSTEM OF CONTINUOUS PROFESSIONAL PEDAGOGICAL ACTIVITY**

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**Abstract:** *In accordance with the Federal Law "On Education in the Russian Federation", the informatization in domestic education is a fundamental condition for the modernization of the educational system and the involvement of the Federal State Educational Standard in educational activities. An exceptional feature of the Russian education reform is its focus on the European approach to diagnosing the quality of knowledge and professional training of graduates from an educational institution. A radical revision of the performance indicator system containing the requirements for knowledge, skills and personal characteristics of teachers from the standpoint of the competence-based approach has taken place. The problem concerning the creation and development of information competence of future teachers is particularly relevant in these conditions. Digitalization of social life has significantly enriched the "information competence" concept regarding the requirements for professional pedagogical activity. Of course, informational competence has become a key aspect and has literally penetrated into all areas of professional pedagogical activity in a very short time, systematically revealing the features of solving professional problems and typical tasks that arise in the process of education and upbringing [14]. In their daily activities, teachers are exclusively engaged in the formation and development of students' personalities, which requires the possession of the finest impact tools. This situation allows us to consider information technology in professional teaching activities as an effective tool for mastering,*

*interpreting and creatively engaging relevant information. Experts note an increasing continuous expansion of the entire spectrum of components, which demonstrates the active penetration of informatization in all areas of the teacher's daily activities. This situation obliges teachers not only to have a good command of computer equipment and information and communication technologies, but also to be able to create appropriate resources, develop computer tests and student rating systems, manage the accounting and educational process through the active use of computer programs; have their own websites, web pages, and web portfolios; develop and implement distance learning modules (which has now become especially relevant and extremely necessary in the context of total quarantine due to the coronavirus pandemic) for a subject based on ready-made program shells, etc. As can be seen from the foregoing, the features of professional pedagogical activity in the conditions of informatization in education actualize the need for clarification and concretization of general pedagogical representations that have been formed in recent decades in specialized scientific literature based on a competence-based approach.*

**Keywords:** *modernization of educational, informational and educational environment, informational competence, competence-based approach, professional pedagogical activity.*

## INTRODUCTION

One of the most urgent tasks of a post-industrial society in the context of the digitalization of life is to prepare the younger generation with the creation and development of their information and communication culture, which obliges teachers to be at the forefront of information technology, which means to have a sufficient level of competence in this area. In the course of our research, we studied scientific works on improving the efficiency of the teaching process in universities in the context of informatization in education (Vagramenko Y.A., Vostroknutov I.E., Kozlov O.A., Lavina T.A., Henner E.K., etc.). The analysis and generalization of special literature on the issues under consideration suggest that the position declared by the Federal State Standard of Higher Professional Education on the inclusion of the subject "use of information and communication technologies in education" in pedagogical specialties and areas in the context of preparing students for and professional pedagogical activities in schools under the conditions of total informatization did not adequately solve a number of the main problems on using information and communication technologies in professional teaching activities. It is worth noting that according to experts, the content of students' training in computer science and information technology (in almost all specialties) does not allow to fully master this discipline. Attention is also drawn to the insufficiency of hours assigned for the proper study of information technology, and imperfection of the methods used for teaching the subject through the use of information technology tools, etc. It is necessary to get away from the fragmented nature of training, which prevails in most educational institutions and does not provide the necessary education level. All this actualizes the need to obtain modern knowledge in full allowing the efficient use of information and communication technology regarding any type and form of pedagogical activity, including also teaching practice.

## METHODS

The theoretical and methodological basis of our study was the scientific works of Russian and foreign scientists in the field of pedagogy and psychology, personality-oriented education, professional competence, and informatization in education. This approach allowed us to identify the characteristic features of professional pedagogical training of future teachers, to update the subjective position of teachers working in pedagogical universities in the context of the implementation of information activities and information interaction based on information and communication technologies. In the course of the study, we used general scientific and special methods of the pedagogical process cognition: a personality-oriented approach, an activity approach, and a systematic approach. Analysis methods such as deduction and induction, synthesis and analysis, elimination, integration of research results, and generalization were used, as necessary.

## RESULTS

In our opinion, the modern professional pedagogical activity of a university teacher should be manifested in the form of a system and a specific algorithm of pedagogically appropriate measures for designing, organizing, monitoring, controlling, and diagnosing the final training outcomes in the context of the active use of information and communication technologies. Such an approach should allow: Effectively solve problems in the context of increasing the actualization of students' educational activities; Increase the absorbability of academic disciplines taking into account the practical orientation of professional knowledge; Elaborate analytical skills for developing and making managerial decisions.

The content of professional pedagogical activity initially orientates teachers to consider the means of information and communication technologies as an effective tool for improving the efficiency of the educational process, while providing freedom in choosing approaches to its implementation. Of course, the success of the implementation of a given target setting depends on the influence of many multidirectional facts, including the level of preparedness of the teacher in the field of computer science and information and communication technologies; the perfection of the used methodological approaches of informatization of society; and also on the psychological and pedagogical components of informatization in education (2; 6; 9). The totality of the information competence components of a teacher in any academic subject consists of the following groups:

- Technological components: certain cognitive actions are performed through their use regarding the collection, processing, structuring and systematization, presentation and transmission of information by traditional and new technologies;
- General professional components: they are characterized by the skills and abilities of working on a personal computer with information at all stages of its formation, which in itself involves the construction of pedagogical activity through the active use of new technologies in accordance with didactic requirements;
- Special (particular methodical) components: in addition to the above components, they are characterized by the modernization of the curriculum taking into

account specialized training, the ability to organize out-of-class and extracurricular activities, implement and develop creative educational projects, facultative studies, etc.

Proper use of the totality of the information competence components allows us to create the information and educational environment of a university (school), which will undoubtedly contribute to building the information competence of future teachers (3; 5). We identified a number of problems that impede the proper use of the technical and technological capabilities in the field of information and communication technologies in the course of our study of educational institutions in the North Caucasian republics. For example, the respondents noted the inconsistency of the teacher training once every three years with the accelerated pace of innovations in information and communication technologies, the lack of inter-course training in schools in the format of in-school training of subject teachers regarding the active use of information and communication technologies in professional pedagogical activities, etc.

In rural schools (especially in mountainous areas), there is practically no specialized training for subject teachers to work with information and communication technologies based on the principle of module learning, although there is a wide range of modules for this, such as “editor”, “user”, “demonstrator” and etc. All this, undoubtedly, deprives rural subject teachers working in the field of informatization in education a possibility to obtain modern functional knowledge, to master advanced teaching methods of the educational process using the advantages of information and communication technologies; sometimes they even have no idea about the possibilities of using various means of information technology in the disciplines taught by them. Courses for novice PC users have been organized for subject teachers in the republics; but, as their practice shows, this allows them to solve only the elementary task of acquiring the teacher’s user skills.

In fairness, it should be noted that in recent years many non-governmental centres for training teachers in the field of computer science and information and communication technologies have been created and are actively functioning. This is, for example, the Open Society Institute (Soros Foundation), the Harmony project, and the Internet Technologies for Subject Teacher Centre. However, it must be remembered that they are very selective in choosing the topics on the problems of informatization in education; in our opinion, their profile component of the subject area is only fragmentary in questions of preparation, as well as the methods of teaching a subject using information and communication tools technology.

Despite the fact that each North Caucasian republic has centres (institutes) for the advanced training of teachers in the field of using information and communication technologies in their professional pedagogical activity, practically none of them have coordinated (interrelated) special training programs in the field of informatization in education: neither vertical (with universities), nor horizontal between themselves. Initial computer training, and even more, in-depth training regarding the possibilities of using network technologies and Internet resources in educational activities is structured in such a way that the features of using information and communication technologies in a particular subject practically fall out of it. Very little time is devoted to the problems of organizing distance learning, and especially, remote post-course support for teachers; there is virtually no need to talk about the provision of adequate training of teaching staff to the growing technical and technological development of information and communication technologies based on local and global computer networks.

The concepts of “competence” and “professional integrity” have been used not so

long ago in domestic pedagogy. The acmeological understanding of professional competence acts as a main cognitive component for the subsystems of teacher's professionalism and activities, reflects the level of knowledge, experience, etc. necessary and sufficient for the implementation of certain types of activities associated with the need for decision-making (4; 15; 11; 12).

The features of each subject, for example, the methodology of teaching biology or history, etc., as well as the specifics of the professional pedagogical activity of a teacher (concerning biology, history, etc.) requires concretization of general pedagogical representations formed in specialized literature on the principles of competence approach. Hence, the information competence of a teacher of biology, history, etc. acts as a new quality of the teachers, which is manifested in their ability to organize, implement and manage the educational process in a particular academic subject, to constantly engage in professional self-education based on new knowledge and skills regarding the processing of relevant information and the implementation of a set of information procedures. It is indisputable that all this will meet the proper level provided that the teachers themselves personally and directly possess modern scientific knowledge and skills, great interest and internal motivation to implement information activities in the educational institution (8).

The effective formation of informational competence by students, for example, biologists, is based in a pedagogical university on the informational competence of a graduate from a previous educational institution (school, lyceum). Of course, schools differ from each other in the level of training of their students, in the availability of their information competence components. In (14), the subject-resource and subject-subject information activities based on the use of both traditional and modern technologies are considered. The first type of activity uses a variety of sources for the formation of an information base (information requests are compiled, etc.), and a set of formalized methods for analytical, statistical and synthetic processing of the received information; the materials for independent work in the organization of educational and scientific-cognitive activities are prepared here.

The second type of information activity is the use of modern technologies for preparing and conducting public speeches, participating in conferences, drawing up business letters, etc. The continuous expansion of the range of components is extremely pronounced for advanced educational institutions; this allows organizing the continuity of information processes in all spheres of human life. In other words, we are talking about the fact that the process of forming the information competence of graduates from secondary schools is formed in the course of study of all disciplines, including computer science lessons. Although, computer science teachers have the priority in the formation and development of technological components of information competence. It is pertinent to note that the structure of competencies consists of informational, active and reflective components (6; 7; 13).

To assess the level of formation of information competence, it is customary to distinguish:

- Initial level - it is formed within the framework of the basic educational standard of secondary (complete) general education;
- Medium level - active users;
- Advanced level - users are able to create their own digital sources and master the basics of programming, etc (Khutorskoy).

It is clear that a teacher of any subject must know and skilfully use the



psychological and pedagogical laws, considering the laws of interaction with a continuous information flow, etc.

## CONCLUSIONS AND PROPOSALS

Analysis and generalization of scientific and theoretical research and special educational and methodological developments allows us to state that the training of teachers in Russian universities is organized on a thematic basis with the predominance of general pedagogical and psychological disciplines without taking into account the content of professional pedagogical activity. This situation ignores the need for practical orientation of teaching staff for universities and eliminates a key feature of the competence-based approach which is a focus on the practical nature of training, and on the training of a competent specialist. The fragmented use of information and communication technologies in most North Caucasian universities prevents the effective implementation of the didactic capabilities of those technologies and the development of informatization in education. Informatization in education has significantly changed the content of the components which comprise the professional pedagogical activity of university teachers; it necessitated the development of new requirements for the formation of the structure and content of professional pedagogical competencies.

For the proper implementation of personality-oriented training in vocational education, it is necessary: to form modern professional pedagogical competencies; to gain experience in the implementation of professional pedagogical activity in the conditions of total informatization in education; to provide informational interaction between subjects of the educational process.

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