

**INFORMATION COMPETENCE OF FUTURE BIOLOGY TEACHERS:
CONCEPTUAL ESSENCE AND COMPONENTS**

*Xaydarov Shavkat Shamsiddin ugli,
Xujaniyozov Baxrom Shuxratovich
Ramatullaev Botir Sobir ugli
E-mail: ms.fetkullova@mail.ru*

Abstract: In the conditions of the modern world there is a revision of the system of minimum requirements to the knowledge, skills, abilities and personal qualities of a teacher from the perspective of the competence approach. The importance of ensuring the training of highly qualified specialists capable of professional growth and professional mobility in the conditions of informatization of society is emphasized in the Federal State Educational Standard of Higher Professional Education in the direction of training "Pedagogical Education". The development of information competence of a future biology teacher today plays a key role in the development of students' information literacy and successful implementation of the educational process. The purpose of this study is to reveal the essence of the concept of "information competence of future biology teachers" and its component parts.

Key words: information competence, structure of information competence, components of information competence.

The development of information competence of a future biology teacher today can be considered as a continuation of the implementation of basic educational programs at the stage of secondary and secondary vocational education. In a pedagogical university, the concept of "information competence" is expanded in accordance with the requirements of the teacher's professional activity. Obviously, information competence plays a key role and permeates all aspects of pedagogical work, determining the ability to solve professional problems and typical tasks that arise in the process of teaching and education. The teacher's activity is aimed at the formation and development of the student's personality, and therefore the instrument of influence must be subtle. Consequently, information technologies in the pedagogical system serve as a means for mastering, interpreting and creatively applying information, that is, the process of cognition, which leads to the formation of new knowledge and personal qualities. It is important to note that simple proficiency in a computer and information and communication technologies is not enough for successful pedagogical work. Therefore, the concepts of "computer literacy" and "information competence" are not the same. According to the definition of V.A. Slastenina, I.F. Isaev, E.N. Shiyanova [4] computer literacy is a set of information skills necessary for preparation for the use of innovative educational technologies. The concept of "information competence", "information competencies" are disclosed in the works of many authors. For example, O.A. Kizik [3] describes elements of information activity in the context of professional competence. E.V. Ivanova [2] also considers the information competence of a teacher as part of professional competence, including a certain set of specialized knowledge necessary for a successful pedagogical process. A.V. Khutorskoy [6] considers the concept of "information competencies" as skills in working with information in academic subjects, educational areas and everyday life, which clarifies the practical significance of the concept under study, since

competencies can be considered as specific tasks performed in activities. One of the key characteristics of information competence in a broad sense is the ability to use universal methods of information search in an ever-growing information space, such as working with the Internet, electronic libraries, databases, etc. It is also necessary to be able to navigate this information flow and select what is necessary. The teacher is in the conditions of an open educational space, being a part of it and at the same time possessing many resources for its development and specification. Thus, understanding and awareness of oneself as a subject of the information space creates the basis for an active personal position of the teacher in the conditions of modernization of Russian education.

The ability to operate with one's knowledge, to apply it in non-standard situations is taken into account in the system of formation and development of a professional teacher. A modern biology teacher works in conditions of an ever-increasing volume of information about natural processes and phenomena characterizing both individual objects and the biosphere as a whole. The peculiarity lies in the increase not only in the quantity of this information, but also in the forms of its presentation. More and more often, a teacher has to work in electronic libraries, select digital photographs, video materials, find resources on the Internet, etc. The selected materials must be processed and systematized in a form convenient for storage and use: archived, digitized (scanned), compiled into catalogs, recorded on various electronic media. The next task is to choose a method of presenting materials to students, colleagues, the public. All these manipulations with information are an integral requirement of the time, functional tasks or competencies of pedagogical activity, the implementation of which in accordance with methodological requirements contributes to the achievement of success. Speaking about the characteristics of the content of the concept of "information competence" and the personal qualities of a teacher, it is important to highlight the following components:

- competence in the subject of teaching;
- competence in teaching methods;
- competence in subjective conditions of activity (knowledge of students and educational groups);
- the ability to independently search for information.

Thus, in our study, under the information competence of a future biology teacher we will understand a new formation (quality) of a person, manifested in the ability to organize, implement and manage the educational process in biology, professional self-education based on knowledge and skills in the field of methods of working with information and performing information procedures.

The use of electronic technologies in information activities is not a new phenomenon, so it is important to determine which aspects of information competence have already been developed by students in the learning process and how they can use them in the process of biology classes. These include the following skills and abilities:

- completing an assignment at the board (traditional and interactive); – making crosswords, cards (on paper and with the help of software);
- keeping a diary of observations (phenomenological observations, dynamics of development of processes and phenomena, etc.) in paper and electronic form;
- completing assignments of laboratory practical training (traditional and virtual);
- using software information managers to manage information on the Internet (thus, using Internet services, people without special knowledge in the field of computer science can perform simple actions, for example, get a search result in a database, etc.).

As part of this study, we analyzed studies to determine the structural components of information competence. Thus, according to A.V. Khutorskoy and S.V. Trishina [5], information competence includes the following components:

- cognitive, which is a system of acquired knowledge necessary for the creative solution of professional problems;
- activity-creative, contributing to the formation and development of various methods of activity in students necessary for self-realization in professional activity;
- personal, reflected in the personal qualities of the subject and responsible for needs and motives;
- axiological, providing students with assistance in determining the most significant value orientations. In our study, relying on the essence of the definition of the concept of information competence of a future biology teacher, we identified the following components:
 - technological components: performing cognitive actions such as defining, searching, processing, structuring, systematizing, storing, interpreting, presenting and transmitting information using both traditional and new information technologies.
 - general professional components: skills in searching, storing, systematizing, processing, applying and presenting information for self-education, improving professional qualifications, organizing the educational process as a whole; presenting information flows using a personal computer and receiving feedback; organizing pedagogical activities using new technologies in accordance with didactic requirements;
 - special (specific-methodological) components: skills in using new information technologies in teaching biology, modernizing courses in the context of specialized education, organizing extracurricular and extracurricular activities in biology, introducing and developing creative educational projects, elective classes, collecting and processing field and laboratory research data, etc.

In the framework of this study, a survey was conducted among 30 first-year bachelor's students in the field of study 44.03.05 Pedagogical Education (with two training profiles: biology and English language) to identify the level of development of information competence in educational activities. The survey results showed that all students use digital resources for educational purposes. When answering the question about strategies for effectively organizing and managing digital information, 67.7% of students mentioned the use of note-taking applications, and 33.3% prefer to use folders and structure files. Most students (66.7%) are confident in their skills in using search engines and databases to find relevant information. However, only 66.7% are partially familiar with the ethical aspects of citing and using digital information in academic work. When asked about additional development of information competence skills within the academic program, 66.7% of students expressed a preference for master classes, 33.3% - practical assignments, and 4.2% - seminars. Thus, it can be noted that the survey results indicate a high level of formation of information competence of future biology teachers. However, there is a need to further improve the understanding of the ethical aspects of citing and using digital information in academic work. To improve information competence skills, students prefer master classes and practical tasks within the curriculum. In conclusion, I would like to note that an important aspect of modern pedagogical education is the need to prepare future teachers to implement innovative educational activities in the information society. Biology teaching methods are developing, providing new opportunities for the teacher. Personal interest of the future teacher, the presence of sustainable motivation to master new forms and methods of teaching, multiplied by knowledge, the ability to competently perform all possible operations on



interaction with information will allow them to achieve success and take a worthy place in the modern education system.

References:

1. Дикарева, И.Г. Условия формирования информационной компетентности учителя биологии // Молодой ученый. — 2010. — № 7 (18). — С. 254-257. — URL: <https://moluch.ru/archive/18/1828/> (дата обращения: 18.02.2024).
2. Иванова Е.В. Информационная компетентность учителя в современной школе // Электронное научное издание «Письма в Emissia Offl ine». СПб., ART 922. 2003 г. URL: <https://chatinfo.ru/sostavit-spisok-literaturi>
3. Кизик О.А. Становление информационной компетентности учащихся в образовательном процессе профессионального лица: дис. канд. пед. наук. Петрозаводск, 2004. - 159 с.
4. Сластенин В.А., Исаев И.Ф., Шиянов Е.Н. Педагогика: учеб. пособие для студ. высш. пед. учеб. заведений. М.: Академия, 2002. 576 с.
5. Тришина С.В., Хуторской А. В. Информационная компетентность специалиста в системе дополнительного профессионального образования // Интернет-журнал «Эйдос». 2004. URL: <http://www.eidos.ru/journal>
6. Хуторской А.В. Ключевые компетенции и образовательные стандарты // Отделение философии образования и теоретической педагогики РАО, Центр «Эйдос». URL: <http://www.eidos.ru/news/compet.htm>