

## Development of research activity through the formation of student competencies in biology education

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**Abstract.** This article discusses the importance of the formation of competencies in the formation of competencies in the educational process through the acquisition of knowledge, skills and competencies in science, as well as the systematic, consistent and continuous development of research activities through the formation of competencies in biology education in higher education. information on how to apply and organize it in the educational process, thereby raising the level of research competence.

**Key words:** competence, student, biology, information, educational process, innovation, reproduction, science, object, research, education.

The current education system of higher education institutions of Uzbekistan is aimed at providing students with the theoretical and practical knowledge necessary for successful professional activity, which, in turn, requires the formation of certain competencies. In the formation of competence in the educational process, the first priority is not the student's awareness of the information, but the ability to solve various problems. In addition, the competency approach involves creating conditions for the acquisition of competencies that contribute to the development of an individual who is able to adapt in a multifaceted socio-political, economic, informational and innovative environment.

The concept of "competence" has entered the field of education as a result of psychological research. Competence therefore means "having a plan of action in unconventional situations, how a specialist behaves in unexpected situations, communicates, interacts with competitors in a new way, performs ambiguous tasks, uses conflicting information, and develops in a coherent and complex process" [1].

About Competence A.B. Zvezdova, V.G. Oreshkin states that "Competence is the ability to successfully apply knowledge, skills, abilities, as well as other personal qualities in the personal and professional activities of a person in certain conditions" [1].

According to IA Zimnyaya, competence is manifested in the actions, activities, behavior, deeds of a person and is an integral personal trait based on a certain level of his intellectual development, primarily mental abilities such as analysis, synthesis, comparison, systematization, generalization considered as [4].

Another definition of the term competence refers to the scope of someone's powers, rights. The scope of these powers is determined from the outside, so AV Khutorsky argues that competence is "a pre-determined social requirement (norm) allocated for the preparation of a student for the education necessary for high-performance productive activities in a particular field" [6].

I.S.Sergeev presents research competence as an integral personal feature, manifested in the readiness and ability to independently understand and acquire new knowledge [5].

In our opinion, research competence (ability and readiness to carry out research activities) can serve as an indicator of the quality of student preparation. This is because the student faces different

challenges in the process of learning different areas. It is during the solution of research tasks that the student demonstrates high professionalism and creativity.

In the system of higher education, students are required not only to acquire knowledge, skills, qualifications in the disciplines, but also to form in them the formation of competence, a competent approach to the educational process. This is evidenced by the fact that science programs and textbooks have been updated on the basis of these requirements.

At present, the development of pedagogical education, the requirements for it, the formation and development of private, that is, biological competencies on the basis of basic competencies through its teaching. The following basic competencies are envisaged for the upbringing of a perfect person who will be able to take his rightful place in society, defend his position independently and boldly, and solve any complex problems that may arise during his career:

1. Communicative;
2. Work with information;
3. Self-development as a person;
4. Socially active citizenship;
5. General cultural competence;
6. Competence in knowledge and use of mathematical literacy, scientific and technical innovations.

Specific competencies are formed using core competencies. In order to effectively organize the educational process in the teaching process, ie in the classroom, extracurricular activities, based on the nature, goals and objectives of the science defined in the curriculum of biological sciences, to independently perform research tasks proposed by the teacher it is ensured that students develop special competencies during the performance of the recommended tasks.

It is known that each discipline develops its own specific competencies. In the process of mastering the science of natural sciences, the expediency of the formation of biological competencies in students, based on the specificity and content of this science, was determined:

1. Competence to recognize biological objects, to understand and interpret the processes that take place in them;
2. Competence to conduct observations and experiments on biological objects, processes;
3. Healthy lifestyle and hygienic competence
4. Environmental protection and ecological competence.

The formation of these competencies leads to the composition of certain activities in students and certain results.

In Table 1:

т/р	Competent activity of students	Results
1	Assimilation of knowledge	Observation, understanding, explanation of natural processes and events
2	Acquire the skills to apply biological knowledge	An ecological culture is formed based on biological knowledge.
3	Development of intellectual and creative interests in knowledge	Apply the knowledge gained from biology in an independent and creative approach to research activities in unexpected situations,

4	Appreciate wildlife and have a positive attitude towards it	Recognize the components of living nature based on their knowledge of biology and apply a positive attitude to them in practice
5	Ability to apply the acquired knowledge and skills in practice.	Apply the knowledge gained from biology to full practice

As can be seen from the table, the student acquires a basic scientific understanding of nature, its components, and events and phenomena in nature, forms an imagination, and engages in independent and research activities through initial observation.

Competent approach to teaching biology - allows students to organize independent and research activities at the required level, and allows students to form basic and biological competencies based on the results of independent and creative activities. The end result will play an important role in the development of students in the future as a person who meets the requirements of the times, mature in all respects, scientifically inquisitive, able to work independently and creatively, independently and reasonably defend their views and positions.

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It is no secret that only strict adherence to the curriculum, study of theoretical material, abstracting is a key part of the educational activity, but it is not enough for the next labor activity, which is one of the main goals of study in higher education. The practical component of teaching materials in the process of teaching students helps to improve the quality of teaching in the development of students' research competencies and, accordingly, their creative ability and independence.

Competence can only be formed in practical training. Therefore, the teacher is required to pay more attention to the practical direction of the lessons. As a result, the student develops the ability to see the problem, analyze the current situation, develop the ability to apply the acquired knowledge in new non-standard situations.

Currently, there is a tendency for students to lose interest in education. Professors of higher education institutions (HEIs) should use research methods to move from the reproductive process to the active creative work of students in the educational process. As a result, students' interest in learning increases.

Research competence is one of the key elements in teaching a university student and determines his or her professional success. Research activities encourage students to transfer the knowledge, skills and abilities acquired in the study of science to the level of interdisciplinary relations. Thus, students acquire research competence. The student focuses his or her efforts on developing important qualities such as creative thinking, responsibility, the ability to defend one's point of view, and personal qualities. Students trained in this way acquire research competence that contributes to their competitiveness.

In recent years, there has been a growing interest in the specifics of the research activities of researchers, employers and vocational education staff, the psychological and environmental conditions for its effective implementation.

The student must be ready to work in the company as a future highly qualified specialist, but for this he must develop research competence. First, research competence stimulates the capacity of personal resources to independently create an educational situation, design their own educational activities, increase the level of intellectual ability, and acquire new areas of activity. It is this feature that enhances the socialization effect of education in human life activities.

In this regard, the university student should increase the level of formation of research competence. Thus, several levels of research competence can be distinguished.

At a low level, students understand the importance of research activities, but are not convinced that it is important for their future. Interest is manifested only in simple episodic tasks of a practical nature. In scientific conferences, roundtables, such students play the role of listeners. They know some research methods and can apply them to solve the simplest research tasks. However, he has no experience in research activities. Completed course work and graduate work are of a reproductive nature, the methodological apparatus of the research, as a rule, is not used.

At the intermediate level, students have the opportunity to solve research assignments to enhance the skills of a future qualified professional. They are interested in mastering research methods and have a responsible attitude. At the same time, they are limited to curricula and educational research activities. They are not interested in research activities, but have good knowledge and can apply research methods. Completed course work and graduate work are characteristic of the educational-research description. However, the methodological apparatus of the research is not fully defined (mainly, the goals and objectives of the work are disclosed). Students participate in scientific conferences at the university with lectures. It is not intended to solve problems other than scientific novelty. Does not participate in foreign, national competitions.

At a high level, the student's motivational circle is sufficiently formed. Motives focus on self-realization and self-improvement. Research activity is an important condition for future career. Strives to learn and master more than is provided in the curriculum. Students participate in research competitions, not only at the educational institution where they study, but also at inter-university, regional, national and international scientific conferences and seminars. There is a desire to continue the research. They will have a strong and in-depth knowledge of the subjects taught at the university. The most important research skills are problem identification, formulation of goals, objectives and scientific hypotheses, observation and planning of experiments, analysis of initial data and evaluation of research results. The methodological apparatus of the research is fully formalized. Achieves high results in research activities, is awarded diplomas of I-III degrees.

Thus, a student's well-organized research activity in higher education is an important component of the formation of research competence. Its implementation and organization in the educational process is one of the main conditions for raising the level of research competence.

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