



Organization Of Experimental Works on The Development of Professional and Methodical Competence of Future Biology Teachers

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ABSTRACT

The main purpose of the experimental work is to increase the level of compliance and expediency of the system of vocational education of students of pedagogical higher education institutions with the requirements of modern biological education. A variety of methods of collecting empirical data were used: observation of the pedagogical process in higher education institutions, individual interviews with teachers and students of higher education institutions; student and teacher questionnaires; analysis of pedagogical documents.

Keywords:

vocational education, student and teacher questionnaires, education institutions, education institutions

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The emphasis phase of the experiment. The emphasis phase was exploratory. It was devoted to the study of the level of formation of students in the graduating group before the start of targeted work on the development of professional competence. The pilot phase of emphasis on alumni groups was conducted in three higher education institutions.

In order to check the formation of professional competence in one of the professional courses - the methodology of teaching biology, a test was conducted with students. A total of 230 students participated in the highlighting phase

of the experiment. To conclude, the result was determined for a group of 200 people using a random selection method.

The test-based answers on the methodology of teaching biology included questions that allow to objectively assess the level of formation of scientific, methodological and reflexive competencies in graduates of pedagogical higher education institutions.

The basic level of formation is the necessary minimum: practice shows that without mastering it, a future teacher cannot work in a school. A high level is characterized by a broader outlook and the ability to apply knowledge in non-standard situations, but without a high level of competence, a future teacher cannot work in a school. Unfortunately, in the graduation certification, we emphasize once again that all graduates of vocational education have a qualification level in which they have this or that competence.

The general expert assessment of graduates of the control group of pedagogical higher education institutions on the methodology of teaching biology was found to be very low. A low level of training of graduates of

pedagogical higher education institutions was identified, which led to the conclusion that it is necessary to make significant changes in the process of training teachers of biology.

Based on the research objectives, the purpose of the formative experimental phase was to test the technology for the development of methodological, scientific and reflexive competencies in future primary school teachers and to determine its effectiveness. At this stage of the experimental work the following tasks were identified:

- 1) to determine the initial level of formation of professional competence in students;
- 2) practical testing of the technology of development of elements of professional competence on the basis of the course material "Methods of teaching biology" in students of pedagogical higher educational institutions;
- 3) to determine the effectiveness of the use of educational and methodological complex developed in the development of special competencies in future teachers of biology.

A system of criteria was used to monitor the formation of professional competencies of students of pedagogical higher education institutions in the methodology of teaching biology, which consists of determining the level of formation of individual competencies.

A criterion is a sign on which an assessment is made on a defined indicator. In our case, the criteria are the leading competencies in the structure of professional competence of the primary school teacher. Each criterion has a number of indicators that characterize the most important and necessary expressions of the quality being diagnosed. Separation of criteria and their indicators is necessary to determine the degree of formation of competencies (high, medium, low) and on the basis of which the professional competence of the primary school teacher is formed in general (see Table 3.1):

Table 3.1.
Criteria for professional competence of a future biology teacher

Criteria
Competence in science
Methodical competence
Reflexive Competence

The high level of competencies formed includes:

scientific competence: the student knows the scientific basis, content, current programs and effective methods of teaching the course of biological education and is ready to apply this knowledge in their professional activities; knows how to organize the work of students of biology in each subject; knows the health technologies of teaching and is ready to apply them in their work;

methodical competence: the student knows how to independently plan and organize their activities and children's activities in all disciplines of biological education; conducts the methodological process competently, ensures the achievement of educational goals; qualified in teaching health technologies;

reflexive competence: the student is able to choose the optimal decision in different pedagogical situations, sees his mistakes in work and tries to correct them, has acquired independent learning skills.

The intermediate level of competencies formed is:

scientific competence: it is determined that the student has acquired a special knowledge of the scientific basis.

The purpose of teaching in our experimental work is to develop specific competencies that are part of the professional competence of a primary school teacher.

As the experimental work was carried out in the material of the course "Methods of teaching biology", the formation of scientific, methodological and reflexive competencies, which are developed only in the above-mentioned course, was assessed.

The principle of uniform differentiation was adopted as the basis for conducting the formative experimental phase, i.e. most of the initial conditions were equated, including:

- graduate students participated in the training;
- equal number of requirements studied in control and experimental groups;
- a comparative analysis of the results of the control controls of the students of the control and experimental groups showed the same level of preparation. More than 80 percent of the 400 students experienced difficulties on

many issues related to the special competencies of the teacher (both scientific and methodological).

The only difference was that a specially developed "Biology Teaching Methodology" manual was used to organize the lessons in the experimental groups, while the control groups practiced traditional methods.

The control groups were trained according to the programs trained by the experimental groups, but without the use of the indicated training manual. All students of the control groups studied the method of teaching writing to first-graders in the study of the subject "Methods of teaching biology" without allocating individual hours to the method of writing (out of the total number of hours).

In conclusion, it can be said that each test experiment is in fact aimed at enhancing and defining the professional and methodological competence of the future biology teacher.

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