



PROBLEMS OF USING ELECTRONIC EDUCATIONAL RESOURCES IN IMPROVING THE EFFECTIVENESS OF TEACHING MICROBIOLOGY AND VIROLOGY

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Annotation. *This article presents the problems of using electronic educational resources to improve the effectiveness of teaching microbiology and virology, as well as proposals and recommendations for their elimination.*

Keywords: *microbiology, virology, e-learning, resource, interactive method, information technology.*

In today's world, where the field of information and communication technologies is developing and improving rapidly, the organization of education using information technology tools and the full assimilation of its content into the consciousness of students is considered a pressing problem [1]. In the context of modern information and educational technologies, the problem-based teaching method is widely used in combination with informational and reproductive methods. In this environment, e-learning resources are used as tools for improving the quality of teaching, developing the student's cognitive interest, and managing and controlling cognitive activity by presenting educational content [2].

Therefore, the introduction of new approaches to the introduction of computer technologies, didactic electronic educational resources into the process of teaching microbiology and virology in higher educational institutions is one of the urgent problems.

In this regard, in our country and the Commonwealth of Independent States, research on improving the methodology of using information and



communication technologies and electronic educational resources to increase the effectiveness of teaching biology has been conducted by such scientists as G.S.Ergasheva, U.B.Bakhodirova, M.N.Ibodova, L.M.Karakhonova, Sh.B.Khasanova, E.A.Filippov, O.G.Petrova, T.I.Krilova, E.S.Gladkaya, A.S.Lisenko, Yu.A.Komarov, V.A.Smirnova.

Although the above-mentioned pedagogical studies are devoted to the methodology of using electronic educational resources in increasing the effectiveness of teaching biology in the system of continuous education, in their works, the methodology of using electronic educational resources in increasing the effectiveness of teaching microbiology and virology in pedagogical higher educational institutions has not been studied in a special monograph. Therefore, at present, there is a need to improve the methodology for organizing lectures, laboratory classes, and students' independent learning activities in the field of microbiology and virology in higher educational institutions using electronic educational resources.

According to the analysis of scientific and methodological literature on the research problem and the state of teaching subjects in existing higher educational institutions, it was established that the implementation of new approaches to the introduction of electronic educational resources in increasing the effectiveness of teaching microbiology and virology is one of the urgent problems of today. For this, it is necessary to eliminate a whole range of problems:

- Creation of electronic educational resources on microbiology and virology based on the sanitary and hygienic norms and rules of the Republic of Uzbekistan;
- creation of an information and educational environment that forms the competence of students in the subject of microbiology and virology;
- creation of an online self-assessment system for students in microbiology and virology;



- improvement of the methodology for organizing classes in microbiology and virology using electronic educational resources and problem-based learning technologies;
- improvement of the methodology for organizing students' independent educational activities in microbiology and virology using electronic educational resources;
- increasing the culture of students in using educational information in microbiology and virology through the global network;
- development and testing of lesson plans based on the integration of didactic electronic educational resources and interactive methods related to the subject.

In conclusion, it is advisable to use information and communication technologies and personality-oriented, developmental, and problem-based learning technologies in organizing classes (lectures, laboratory work) in microbiology and virology. As a result, it is possible to increase students' interest and motivation in science, develop their creative abilities, cognitive thinking, and form professional competence.

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