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USE OF INNOVATIVE EDUCATIONAL TECHNOLOGIES IN THE SCIENCE OF MOLECULAR GENETICS

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Abstract
This article provides information on the effectiveness of increasing the learning ability and cognitive potential of students through the use of innovative educational technologies in teaching molecular genetics.

Keywords: innovative educational technologies, molecular genetics, creative technologies, didactic games.

Introduction

The President of the Republic of Uzbekistan, Shavkat Mirziyoyev, in his address to the Oliy Majlis, proposed naming 2023 as "Year of attention to people and quality education". Through these proposals of the head of our state, it is not difficult to understand how important quality education is for a high and knowledgeable future through attention to people. It is necessary to use innovative approaches and educational technologies to improve people's living standards and quality education. Regarding the importance of innovation, our honorable president always emphasizes the following: "Innovation means the future. If we start building our great future today, we should start it on the basis of innovative ideas and an innovative approach." Since 2018, the main tasks of the development of innovative technologies in our country have been defined: "In the coming years, the task of developing scientific research and innovative activities, mobilizing the necessary financial resources, and supporting the participation of talented young people in this process, creative ideas and developments "will be in the center of our attention". Therefore, today it is important to carry out the activities of every sector and system on the basis of innovative ideas and technologies. First, let's talk about the meaning of the word "innovation". The concept of innovation (Latin novus new) began to be used in research and scientific work in the 19th century. At first, it represented the application of individual elements from one field to another. Then, many organizations learned the rules of introducing technical innovations and adopted the "innovation policy" as a whole system for the financial benefit of their organizations. This activity has general characteristics, laws, and a mechanism for the renewal of the voluntary part of society's life. Innovative technologies are innovations and changes in the activities of teachers and students in the pedagogical process, and their implementation requires the use of interactive methods. Interactive methods are based on the activity of each student participating in the educational process, free and independent thinking. Learning becomes an interesting activity for students when innovative educational technology methods are used.

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The main part

When interactive methods are used, students gain skills and abilities to work independently with the help and cooperation of teachers. Young specialists acquire new knowledge on the basis of scientific research, research, and experimental tests.

When innovative technologies are used in the teaching of molecular genetics, the participants of the educational process work in small groups. Assignments are not given to individual students, but to all members of a small group, and mutual communication and exchange of ideas are improved, and at the end of the assigned assignment, the best conclusion is given. The main form of organizing the teaching process is the lesson, and the achievement of the goals set in the lesson is somewhat improved.

Currently, we are also introducing various non-traditional forms in the classes of molecular genetics. For example, in solving genetic problems, we conduct "Solving the problem by screenshotting" or "STEM" in addition to giving picture situational problems and assignments. Such lessons serve to develop students' creative abilities, strengthen their intellectual potential, expand their scientific outlook, and develop the skills and abilities to quickly and fully accept any genetic changes that may be encountered in the future.

The use of innovative technologies during the lesson arouses students' interest in scientific research, develops creativity and creativity. As a result, acquired knowledge, skills and abilities are applied in practical activities, the quality of learning increases. For this, the teacher should be skilled and properly plan lessons according to the content of the topics, and make all students work actively and consciously during the lesson. After all, the teacher is the main executor of the educational reform. It is important to teach each teacher to learn, process and apply a large amount of information in a short period of time. In solving it, the teacher will be helped by the use of modern information technologies, including computers, along with traditional methods of teaching. Pedagogical innovation is innovation in pedagogical activities, changes in the content and technology of teaching and education, aimed at increasing their effectiveness. Innovation is understood as the result of innovation, and the innovation process is considered as the development of three main stages: creation of an idea (in a certain case, scientific discovery), development of ideas in practical aspects, and implementation of innovations. [2]

As a measure of the effectiveness of pedagogical innovations, optimality requires that teachers and students spend effort to achieve a guaranteed result.

Different teachers and students achieve different levels of effectiveness in the course of their personal pedagogical and educational activities. This is why it determines the level of optimality of pedagogical innovations. Effectiveness as the most important sign of innovative methods is manifested only when positive achievements are made in the teacher's work. The technological, observability, and recording of results in measurements is demonstrated by evaluating new methods and methods of teaching. The important aspect of this measure is manifested in the unity of the formation of the person, his perceptions and concepts.

The innovative process can be considered as the process of bringing the scientific idea to the stage of practical use and implementing changes in the social and pedagogical environment. The activity that ensures the transformation of ideas into innovation and forms the management system of this process is an innovative activity. There is another characteristic of the innovation process development stages. The creative application of pedagogical innovations in

pedagogical experience is manifested at the initial stage of the work of individual teachers. The experience of these innovations will be tested and objectively evaluated and then presented for public use. It is desirable to develop the creative functions of teachers using innovative methods that are widely popular and allow to achieve positive results. From the simple repetition of memorized knowledge of pedagogical culture, from assimilation of ideas, concepts, technologies known to the scientific and pedagogical community into their personal activities, to their heuristic, creative development and implementation into practice, the daily actions of future specialists should form its content. It is important to inculcate the content of pedagogical innovations and their application into the experience of future genetic specialists. In order to bring pedagogical innovations into the life of an educational institution on a large scale, it is necessary to create an environment of innovation, to form a certain moral and psychological state, and to apply measures of an organizational, methodical, and psychological nature.

For this purpose, it is necessary to develop the creative functions of future specialists, provide them consistently with innovations, and teach them to analyze and implement innovative methods. In the field of molecular genetics, as in other disciplines, innovations in the educational system and in the field are constantly being studied by experts.

Thus, the creation of a socio-pedagogical context that supports private innovations and socio-pedagogical innovations of a certain size, scale and level can significantly enhance the development of the regional education system as a whole. [3]

In particular, V. I. Zagvyazinsky, a specialist in pedagogical innovation, who studied the life cycles of various innovative processes, emphasizes that, having achieved positive results as a result of the development of innovation, teachers unreasonably strive to universalize it, to apply it to all areas of pedagogical practice.

Conclusions

First, the creation of creativity in the teachers of molecular genetics, independent learning and creative thinking in young geneticists. In addition, it is necessary to pay special attention to the use of creative environment, specific spiritual and mental state, organizational, methodical and psychological measures among teachers.

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