



THE USE OF THE FSMU METHOD AND ITS IMPORTANCE IN IMPROVING GENETIC KNOWLEDGE IN THE EDUCATIONAL PROCESS

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Abstract

This article provides information on effective methods of undergraduate education, on the introduction of new mechanisms for teaching genetics as a science. At the present stage of development, attention to the development of new modern pedagogical technologies in higher education has increased even more, one of the main goals was to improve the quality of the lesson, bringing it to the level of world patterns.

The "FSMU method" is used in solving controversial issues, as well as in conducting a debatable learning process, since this technology allows students to defend their opinions, think freely, express their personal opinions to others, openly argue and at the same time teaches a culture of argumentation. In the future, the main attention will be paid to the possibilities of wider application of these approaches in teaching genetics courses, greater attention to the practice of genetics as a science, and the use of new methods for assessing student academic performance.

Keywords: competence, model, accreditation, multidisciplinary, knowledge, skills, pedagogical technology, FSMU, chromosome, technology, gender, autosomes, heterogamete, homogamete. active learning, artificial intelligence, learning, learning practice.

Introduction

The task of assessing students' academic performance in a particular subject, which arises at all stages of learning, is more difficult, since each subject, as a rule, forms from two to four or more competencies. Therefore, the task is set in such a way that



in the process of intermediate certification it will be necessary to determine the level of formation of all these competencies during one assessment procedure.

When accrediting educational programs, the expert faces similar tasks, in one session of multidisciplinary testing it will be necessary to assess the level of formation of 4-5 competencies based on answers to 20-30 control questions. It is impossible to solve such a multidimensional task of assessing competencies using simple linear algorithms for analyzing test results.

From the point of view of today, it is necessary that students have a high level of knowledge, mental performance and be able to think independently. Teachers develop such qualities in students.

Circumstances such as the constant organization of the educational process in a strictly defined and long period of time, repeated reference to subjects in the subject of the specialty in each academic year, not always a high level of educational activity of students, can sometimes provoke, even the teacher himself, indifference to lesson preparation. The only effective way to prevent or overcome such a negative state is considered to be a creative approach to professional activity.

On the other hand, the use of complex methods for analyzing test results with elements of artificial intelligence creates another problem due to the insufficient level of trust of students and teachers in such assessment systems [1]. The degree of trust in intelligent systems strongly depends on the degree of transparency of such a system, the simplicity and legibility of the algorithms used in it.

Today, interest and attention to the use of pedagogical and information technologies in the educational process is growing every day. One of the reasons for this is that while traditional education has so far taught students to acquire only ready-made knowledge, modern technologies teach them to independently search for acquired knowledge, independently study and analyze it, even draw conclusions on their own. In this process, the teacher creates conditions for the development, formation, acquisition of knowledge and education of a personality and at the same time performs a managerial, guiding function. In the learning process, the student becomes a key figure.

The most fundamental basis of pedagogical technology is the joint achievement by the teacher and students of a guaranteed result from the set goal, the technologies chosen for this purpose will depend on this basis.



Pedagogical technology is commonly referred to as the direction of pedagogy, the purpose of which is to increase the effectiveness of the educational process, to achieve the intended results in education (M. Clarin, 1989).

In teaching genetics, which is considered a field of biological sciences, the use of collaborative learning, problem-based research and logical methods in combination with verbal, visual and practical methods is also becoming important.

The FSMU method is used to resolve controversial issues, as well as to conduct discussions in the educational process, as this technology teaches students to defend their opinions, think freely, express their opinions to others, openly argue, as well as the culture of argumentation.

The purpose of this technology is to teach students to present arguments or refutations confirming their opinion clearly and concisely on a simple piece of paper distributed. This technology can serve both to accelerate and expand the mental activity of students before in-depth study of a new subject. As well as consolidate, assimilate well, summarize the topic covered and encourage students to express their vision of the topic in writing, with evidence and evidence. *Note:* only knowledgeable and sensible students who are well versed in the text of the lecture will be able to use this technology correctly from a scientific point of view. When using FSMU technology, when choosing topics for qualifying and master's scientific papers for undergraduate and graduate students, students and undergraduates learn to scientifically substantiate their opinions on selected topics. FSMU technology fully responds to this:

- F-formulate your point of view;
- C-specify the reason for your statement;
- M-give an example proving the reason you have given;
- Y-summarize your opinion.

The FSMU analysis provides participants with a basis for faster and more successful acquisition of professional and theoretical knowledge based on practical exercises and existing experience. When assimilating existing knowledge, it is important that students master thinking skills. This method develops students' skills such as developing quick thinking skills, the ability to express thoughts according to their level of thinking, the ability to indicate a reason for expressing their thoughts, the ability to provide convincing evidence of the reasons they indicate, and generalize their opinions.

Research Materials and Methods

The procedure for the introduction of technology:

- ✓ participants are offered a final conclusion or an idea related to the topic;
- ✓ Papers with the stages of the FSMU technology are distributed to each participant:
- ✓ The relationships of the participants are presented individually or in a group order.
- ✓ The analysis of the FSMU will become the basis for faster and more successful assimilation of professional and theoretical knowledge by participants based on practical exercises and existing experience.

Sample:

Idea: “The law of chromosome constancy is unchangeable; they are taught differently all over the world.”

Task: analyze your attitude to this idea through the FSMU

F - The chromosomes of every living organism have an invariable number of chromosomes, which are called autosomes and sex chromosomes. Organisms have homo- and heterogamous chromosomes.

S - The chromosome theory was experimentally proven by Thomas Morgan and his students for the inheritance of eye color pigments in *Drosophila* (*Drosophila melanogaster*) and is based on this law.

M - a set of chromosomes of some organisms:

Types	number of chromosomes	
	diploid-(2n)	haploid-(n)
Cotton	52	26
Durum wheat	28	14
Soft wheat	42	21
Rye	14	7
Oats	42	21
Barley	14	7
Millet	36	18
Corn	20	10
Marjumak	16	8
Sunflower	34	17
Beetroot	18	9
Flax	32	16
Alfalfa	32	16
Beans	22	11
Pea	16	8
Man	46	23



U - this means that chromosomes are an integral part of the cell nucleus of all eukaryotic organisms. It consists of nucleotides and retains hereditary characteristics.

When assimilating existing knowledge, it is important that students master the skills of thinking, thinking. This method develops students' skills such as developing quick thinking skills, the ability to express thoughts according to their level of thinking, the ability to indicate a reason for expressing their thoughts, the ability to provide convincing evidence of the reasons they indicate, and generalize their opinions.

Conclusion

The problematic situation aimed at activating students in the learning process, the use of the FSMU method was touched upon. This, of course, serves to increase the effectiveness of teaching, as well as contributes to the development of personal qualities of students, the formation of independent thinking skills and a high level of mastery of subjects, ensures the interaction of students with the teacher. It also increases the responsibility of students for independent work on themselves, because in interactive methods the role of the teacher is great, he exercises constant control and always controls students, as well as directs students to the right path, teaches them to think independently and concentrate their thoughts, increases their curiosity, encourages them to find a solution to the problem with the help of questions.

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