INTERNATIONAL MULTIDISCIPLINARY JOURNAL FOR RESEARCH & DEVELOPMENT
SJIF 2019: 5.222 2020: 5.552 2021: 5.637 2022:5.479 2023:6.563
eISSN 2394-6334 https://www.ijmrd.in/index.php/imjrd Volume 10, issue 11 (2023)

THE INTENSIFICATION OF COGNITIVE ACTIVITY IN THE TRAINING MODULE "GERMINATION, FRAGMENTATION AND GASTRULATION"

Ikromova Y.E.

Nurmamatova F.M.

Jo`rayeva I.M.

Maxramova I.O.

Jizzakh State Pedagogical University

Annotation: Further increased attention to education in recent years has paved the way for the entry of new pedagogical technologies directly into the educational process. Thus, the scope of application of interactive methods that contribute to the development of subject areas is expanding, which creates a number of convenience in bringing subject topics to the student by the teacher. As a result, both the learning process and the conscious world between the learner and the educator are radically changing.

Keywords: Biology, education, knowledge, skills, activity, module, fragmentation, gastrulation, fertilization, cognition, competence, private, DTS, project, collaboration, modular.

Acceptance as a module of a chapter or section of a training course contained in the curriculum of an educational institution is considered teaching these courses in a modular system.

When transferring courses from the curriculum to a modular system, it is assumed that each subject is a separate module, and each chapter in the curriculum is taught on the basis of a module.

The use of a modular system in the teaching of biological sciences provides the following advantages:

1. The use of a modular system in the teaching of biological sciences prepares the ground for the activation of cognitive activity of students. Defining learning goals and assigning them to students in accordance with Blum's taxonomy over each lesson makes them subjects of their own learning activities and prepares the ground for improving efficiency.

2. The use of a modular system of teaching biological sciences allows you to prepare competitive personnel that meet the qualification requirements of teaching staff by forming students not only knowledge, skills, skills, standardized DTS, but also general and private competencies.

3. The definition of learning objectives in the subjects contained in the modules, the development of control tasks in accordance with it enrich the content of the didactic provision of biological sciences, create the basis for the development of the syllabus of science.

4. Teaching biological sciences by modules and establishing targeted control over them makes it possible to accurately assess the level of mastering by students and eliminate shortcomings in their activities, fill in and correct gaps in their knowledge.

The educational process focused on the student's personality, in turn, requires interactive teaching methods and innovative technologies. Interactive methods are understood as methods of problem research, logical, independent work, stimulation and justification of students' activities in learning, as well as methods of control and self-control.

The issue of activating the cognitive activity of students and improving the effectiveness of teaching is one of the main problems of the discipline methodology of teaching biology.

The activation of cognitive activity of students is understood as a high level of motivation of students, a conscious need for the assimilation of knowledge and skills, high performance and the appearance of behavior corresponding to social norms. This type of activity does not always arise, but only due to the purposeful pedagogical influence of the teacher and the ability to organize a favorable pedagogical and psychological environment. The appropriate impact and creation of a favorable socio-psychological climate in the teaching of biology will depend on the pedagogical technologies used by the teacher.

Any technology developed in didactics serves to activate the cognitive activity of students and increase the effectiveness of learning, but in the following technologies this issue occupies a central place:

1. Didactic game technologies.

2. Problematic educational technologies.

3. Modular learning technologies.

4. Technology of collaborative learning.

5. Design technology.

In combination with the specifics of technologies that make it possible to activate the cognitive activity of students and increase the effectiveness of learning, such functions as education, development, upbringing, guidance to creative activity, communicative, logical thinking, formation of ways of thinking, analysis of one's own activities, career guidance, training in the correct achievement of goals, the formation of cooperation are implemented in the educational process. does. However, when comparing the functions of pedagogical technologies, it turned out that these functions do not have the same value. The leading place in didactic game technology is occupied by educational, developmental, educational, communicative functions, the remaining functions are an application to them.

Consider the application of the module of fertilization, crushing, gastrulation based on didactic game technology.

When the content of the topic is covered on the basis of didactic game technology, the process of students ' acquisition of knowledge is harmonized with didactic game. For this reason, the lessons that are harmonized with the learning activities of students, the activities of the game, are called didactic playful lessons.

The success of didactic game lessons depends, first of all, on the thorough and intense preparation of students for these games, on the organization and skillful management of this activity by the teacher. Students ' activities preparing for the didactic game should include: 1. acquaintance with the purpose, function, procedure for conducting, rules of the didactic game;

1. awareness of the problematic situation arising from the purpose and task of the didactic game;

2. finding ways out of a problem situation;

3. each student will be able to understand the tasks that he must perform, receive the necessary instructions and instructions from the teacher;

4. choosing the optimal option for solving a problem situation using various sources of knowledge;

5. mutual cooperation, mutual assistance and mutual control should arise between the participants of the didactic game.

It is advisable to use the above topic from didactic game lessons::

Creative game-creative games are important in the development of creative search, independence, logical flkrling of students, in meeting their needs for additional knowledge. Didactic games should be called creative games, which prepare the basis for solving the problem situations that arise in the educational process through the creative application and search for previously acquired knowledge, skills and qualifications in the interaction of a group of students.

For the lesson, students are divided into an equal number of groups, which are given such names as “fertilization”, “grinding”, “gastrulation”. Members of each group Tell monand news to the name of the group they are named for. Feedback is exchanged between groups. That is, each student in the group, and even, the groups, work cooperatively, providing continuity, acquiring new skills by saying new knowledge and concepts(Table 1).

1 – jadval

To test students' ability to think creatively

	Process name	**General aspects**	**Go on plants**	In animals		
				Invertebrates	Vertebrates	
					Ananmnia	**Amniota**
	Breeding					
	Grinding					
	Gastrulation					

Conference classes occupy an important place within didactic play classes. Conference classes are important in activating the cognitive activity of students, expanding the scientific worldview, introducing them to additional and local materials, developing skills and qualifications for independent work with scientific and popular literature, preparing young people for independent life, consciously choosing a profession.

Before taking a conference lesson, the teacher clearly defines the topic, purpose and tasks of the lesson and examines additional scientific, popular science literature on this topic. Iymiy examines the popular science literature.

10 days before conducting this lesson, the topic of the lesson is published and literature is recommended to prepare for it. In the published didactic game lesson, students divided into groups will be at the discretion of students to choose their task, to comprehensively cover the topic, to prepare a lecture in accordance with the interests and abilities of each student. The

predominance of positive stimulation by the teacher during the course preparation period and the communication culture of the teacher towards success, mutual assistance are considered an important factor in the intense preparation of students for the lesson. It is recommended to conduct a scientific conference lesson as follows: Teacher's introduction. In this, the teacher introduces the subject of the lesson, its purpose and tasks, the "knowledgeable" who perform the corresponding roles.

1. Listening to scientific lectures. "Connoisseurs" describe their lectures on the topic on the basis of visual weapons.

2. Lecture discussion. In this case, an argument, a discussion will be held between all students in the class on the topic.

3. Conclusion of the scientific conference. The teacher concludes by highlighting the most important concepts and ideas on the topic.

4. Assessment of students. Students who actively participate in the lesson are encouraged and evaluated according to the rating system. Give home a task. General completion of the lesson.

Problematic educational technology also plays an important role in the illumination of the" fertilization, grinding, gatrulation " module.

A specific aspect of these lessons is based on the problem situations that arise during the lesson.

Problem education is said by the teacher, using the most alternative option of pedagogical influence, relying on the laws of reasoning, to a process aimed at the goal of developing students ' ability to think in the process of mastering knowledge and satisfying the need for knowledge, preparing the ground for the general and special development of the individual. In the process of problematic education, a problematic situation is created under the guidance of a teacher, and this problem allows you to creatively master knowledge, skills and abilities and develop mental activity as a result of active independent activities of students.

For example, various problematic, thought-provoking puzzling questions about the subject are thrown in between:

1. Why do germ cells differ in size, does this matter in the process of fertilization? Dear readers What do you think?

2. In the process of fertilization, thousands of germ cells are ishirok, why not all participate in fertilization?

3. What kind of reproduction would have been acceptable to the organism if it were not for the fertilization process?

4. Why does the number of cells increase in multiples during the grinding process?

5. What is the process of grinding in a group of animals in different ways?

Problem education technologies are used for the purpose of gaining the level of knowledge acquisition of students, bringing skills to the level of competence, in which the student analyzes, compares, synthesizes educational material, summarizes information and receives new information. In other words, using previously acquired knowledge and skills in new situations, deepens, expands knowledge.

This method of mastering knowledge cannot be taught by any textbook and mentor, only students are sought in the process of solving problem situations and find solutions to problems.

Problem situations can be used successfully at all stages of the educational process: a new topic statement, RNAs and knowledge control. In cases where problem situations successfully create a ridge, it is recommended to pass this topic in the form of a problem lesson.

To apply rnuammoli classes to the teaching process, the teacher must solve the following rnasalas:

- determines which subjects can be passed in the form of a problematic lesson according to the curriculum;

-identifying questions, assignments that cause a problematic situation on issues in the text of the topic, in which didactics adhere to the principles of science, systemality, logical sequence, consistency;

- it is necessary that students identify the tools and methods that enable them to activate and manage their cognitive activity, and determine the ways in which they can use them in their place and effectively.

Controversial classes are also based on problematic educational technology. Discussion classes will be devoted to the study of a specific topic in the program. Didactic purpose of this lesson:

1. Gaining interest in education and science by activating the cognitive activity of students, expanding their knowledge.

2. Achieving the acquisition of new knowledge through the application of previously acquired knowledge, skills and competencies of students in common, familiar and unexpected new situations;

3. Identification and elimination of abstract concepts in students ' knowledge, development of the desire to acquire knowledge;

To cultivate the speech of students, to present their opinion in a concise and logically correct way, to form the skills of their argument (Table 2).

Fill in the table below based on the knowledge you have acquired

Table 2

Names	**Comparable aspects**		
	Breeding	**Grinding**	**Gastrulation**

Tuberous plants			
Centipedes			
Qirqbo`g`im			
Open seeders			
One seedpallales			
Two seedpallales			
Simple animals			
Bats			
Artropoda			
Chordata			
Pisces			
Amfibia			
Reptelia			
Aves			
Mammalia			

Modular education technology is based on modules. In the use of modular educational technologies in the teaching of biology, the topic used in the lesson is separated into logical completed thought parts, that is, modules, and educational tasks are drawn up so that students can independently master each part. On the basis of the same training assignments, a question and answer is conducted at the conclusion of each module and a conclusion is drawn. In these lessons, the cognitive activity of students is organized with the intention of sequentially mastering the modules.

Collaborative training provides for teaching each student to Daily intense mental work, to maintain a creative and independent flkr, to educate conscious independence as a person, to create a sense of personal dignity in each student, to strengthen confidence in his own strength and abilities, to form a sense of responsibility in education. Collaborative teaching technology prepares the ground for regular and diligent mental work, quality implementation of educational tasks, thorough assimilation of educational material, cooperation and mutual assistance with comrades, realizing that the success of each student in studying leads to group success.

LIST OF BIBLIOGRAPHY

1. Tolipova J.O. The use of new pedagogical technologies in the teaching of biology. T.2005.
2. Sayidaxmedov N. Pedagogical technology and pedagogical skill. -T.: O‘zMU 2005
3. E.Qodirov “Histology” Tashkent “Teacher”, 1994 y.
4. E.Qodirov., O.Eshonqulov “Sitologiya, embriologiya, gistologiya” Tashkent 2004 y.

5. K.A.Zufarov “Histology” Tashkent 2005 y.
6. B.Xoliqnazarov “Individual development biologist” Toshkent 2006 y.
7. www. pedagog. uz