

DEVELOPMENT OF CLUSTER TECHNOLOGIES IN BIOLOGY LESSONS: ACHIEVEMENTS AND PROBLEMS

Askarova M.R.

Lecturer at the Department of Biology,
Chirchik State Pedagogical University
askarovamiribon@gmail.com

Abstract

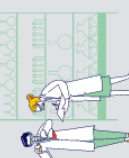
Higher education institutions in the field of pedagogy in our country have the responsible task of preparing inquisitive, creative and deep-thinking personnel. This article discusses the effectiveness and problems of effectively using the cluster method in biology lessons. We hope that the use of the cluster method during the lesson will further increase the level of students' knowledge.

Keywords: education system, innovation cluster, student interns, specialists.

Introduction

In recent years, our President, Sh. Mirziyoyev, has taken seriously the reform of the education system, improving the quality of qualifications, especially the implementation of the experience of developed foreign countries. Reforms in this area were adopted on April 20, 2017, "On measures to improve the public education system," May 22, 2017, "On measures to improve the postgraduate education system", Resolutions of the President of August 8, 2017 "On improving the work of the Ministry of Public Education of the Republic of Uzbekistan" and "On the Establishment of the Ministry of School Education of the Republic of Uzbekistan" of September 30, 2017 otherwise. The introduction of an innovative cluster of pedagogical education in the education system prohibits the need to ensure the modern requirements for the sustainable development of pedagogical education, the problems in the system, and the relationship between the departments of science and education in solving them. [1]

The effectiveness of using methods in a biology fan depends both on the teacher and the student's ability, and there are methods that will be effective in addition to interesting lessons. The mentioned methods were recommended as a result of experiments. There are many methods of teaching natural sciences in the field of public education, which are used in different types of courses to achieve one goal, namely, to educate students. A notable feature of these methods is that they update traditional teaching and offer innovative methods of learning. Such teaching methods include classroom methods. Organizing classes in the classroom system in higher and secondary areas is good. The student will have a good opportunity to apply his or her knowledge of biology in higher education to practice and improve his or her teaching skills. At the motivation stage, children represent and record all available knowledge, their assumptions and associations on the subject. It serves to stimulate the cognitive activity of schoolchildren, encouraging them to think before they start studying the subject. The use of a

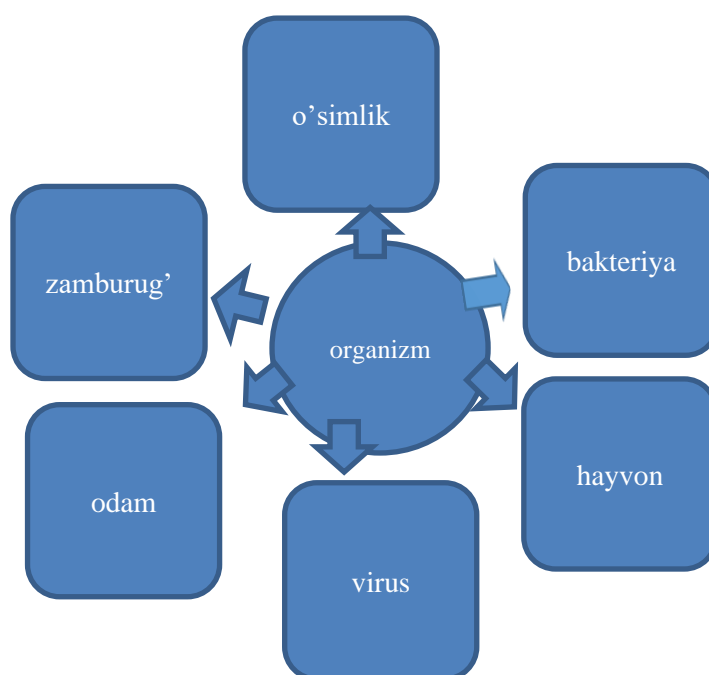


cluster at the comprehension phase allows the structure of the educational material. At the thinking stage, the classroom method performs the function of systematizing the knowledge gained. A classroom allows you to imagine the thought processes that take place when you think about a certain topic.

It is optimal to systematize large volumes of data using clusters, making the work more accurate and logically structured. Classrooms also save time in the classroom. Given that the writing speed of the students varies, it will take longer to write information in text form.[3]

In biology classes, the classroom model can be used to explain new material, repeat and strengthen the subject studied, work independently with textbooks, and throughout the course. With the help of a cluster, you can assure or inspect homework. Example: You can assign the word "cell" as a homework assignment, in which the student (reader) uses this keyword to write down ideas, facts, phrases, or phrases that match the subject in classroom mode.

The words that appear when you are writing are tied to the basic concept through straight lines. Each "satellite" in turn has "satellites" and new logical connections will be established[3]. The result is a classroom that graphically expresses ideas and determines the information space of the subject presented. In the process of assigning homework to students, tasks are an acceptable option using topics that are interesting and easy to master. If the assigned task is of interest to the student, he will take a creative approach to the topic and participate in the next sections of the classroom with his active thoughts and creativity.



For example, using the "Organism" cluster in this picture, you are instructed to continue it. Cluster sizes may vary. In fact, it is desirable that the cluster consists of three or four elements, since an extended cluster can take a lot of time. Such an approach to material learning will increase students' interest in learning and increase interest and research in understanding the issues being studied. [3]

Compliance with the following rules plays a major role in working in the way of clusters.

First: Try to write down the idea that little of you imagined and came to your mind.

Second: Keep working without any plans, keep working until the time is up or the ideas are over.

Taskari cluster.

The reverse class serves to stimulate students' interest in science, to activate them, and to identify the subject of the lesson at the motivation stage or at other stages to identify the main ideas, content, ideas, and a question mark is placed in the center of the classroom. This type of class is formed as follows: a question mark will be placed in the center of the cluster, additional categories will be written around it, an empty frame will be left to determine the keyword or main theme, and students will be given for discussion. For example, during the difficulty phase, the teacher shows students the following class and asks them to name the subject of the lesson:



Advantages

It provides an opportunity for participants to exchange views on the topic, to express their views on solving the given problem. Allows the student to join and leave the discussion process. It develops analytical thinking, concentration and observation, develops speech and feedback techniques.

Difficulties.

There may be controversies and conflicts among students in the process of discussing the problem. Therefore, the teacher should prepare carefully for the lesson and prevent serious conflicts among the students.

So, there are several ways to work with the cluster:

Define The Main Term

Cluster to'ldirish.

Fix bugs.

End an unfinished cluster[3].

At the end of the lesson, students can be instructed to write a brief story about the completed class using words that are part of the classroom as a homework assignment.

Instead, it is worth noting that classroom activities allow you to create a new quality exercise and provide opportunities for a unique new approach to education. The classroom not only ensures the conditions - conditions - for learning throughout life, but also allows you to restore existing and promising relationships between the components that ensure the continuity of education.

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