

FORMATION OF STUDENTS' SCIENTIFIC COMPETENCIES ON THE BASIS OF MEDIA EDUCATION RESOURCES

Hasanova Shokhista Bobokholovna P.F.F.D, (PhD)

Navai Regional Institute of Retraining and Advanced Training of Public Education regional center, dotsent

ABSTRACT

The following article deals with the methodology of formation of students' scientific competencies through the organization of Biology lessons in general secondary schools on the basis of media education resources.

Keywords. Competencies, media education resources, biological concepts, wildlife corner, learning experience plot.

INTRODUCTION, LITERATURE REVIEW AND DISCUSSION

The introduction of pedagogical and information-communication technologies in the educational process in general secondary schools provides a basis for the formation of basic and scientific competencies of students. Competences that are concerned to Biology are formed on the basis of State Educational Standards knowledge, skills and abilities . They are:

1. Competence of understanding, recognizing, interpreting biological objects, phenomenon, process;
2. Competence of observing and conducting experiments on a biological objects, events, process;
3. Healthy lifestyle and environmental competence.

Organizing the learning process on the basis of media education resources does not only ensure the effectiveness of the lesson, but also encourages students to love science, creativity, innovation and increase their knowledge. The system of formation of students' special competencies in science on the basis of media education resources in Biology lessons can be expressed as follows (**Figure 1**). This methodological system requires the teacher to integrate organizational forms of teaching to form students' competencies, and lessons and related excursions to each of homework, and extracurricular activities. The course, which is the main form of teaching, develops biological concepts, worldview, thinking and practical skills. But in the lesson it is impossible to show the development of living organisms, the interaction of different organisms in bioceonoses. Therefore, special forms that complement the lessons are used in biology teaching methods.

TEACHING BIOLOGY BASED ON COMPETENCE APPROACH

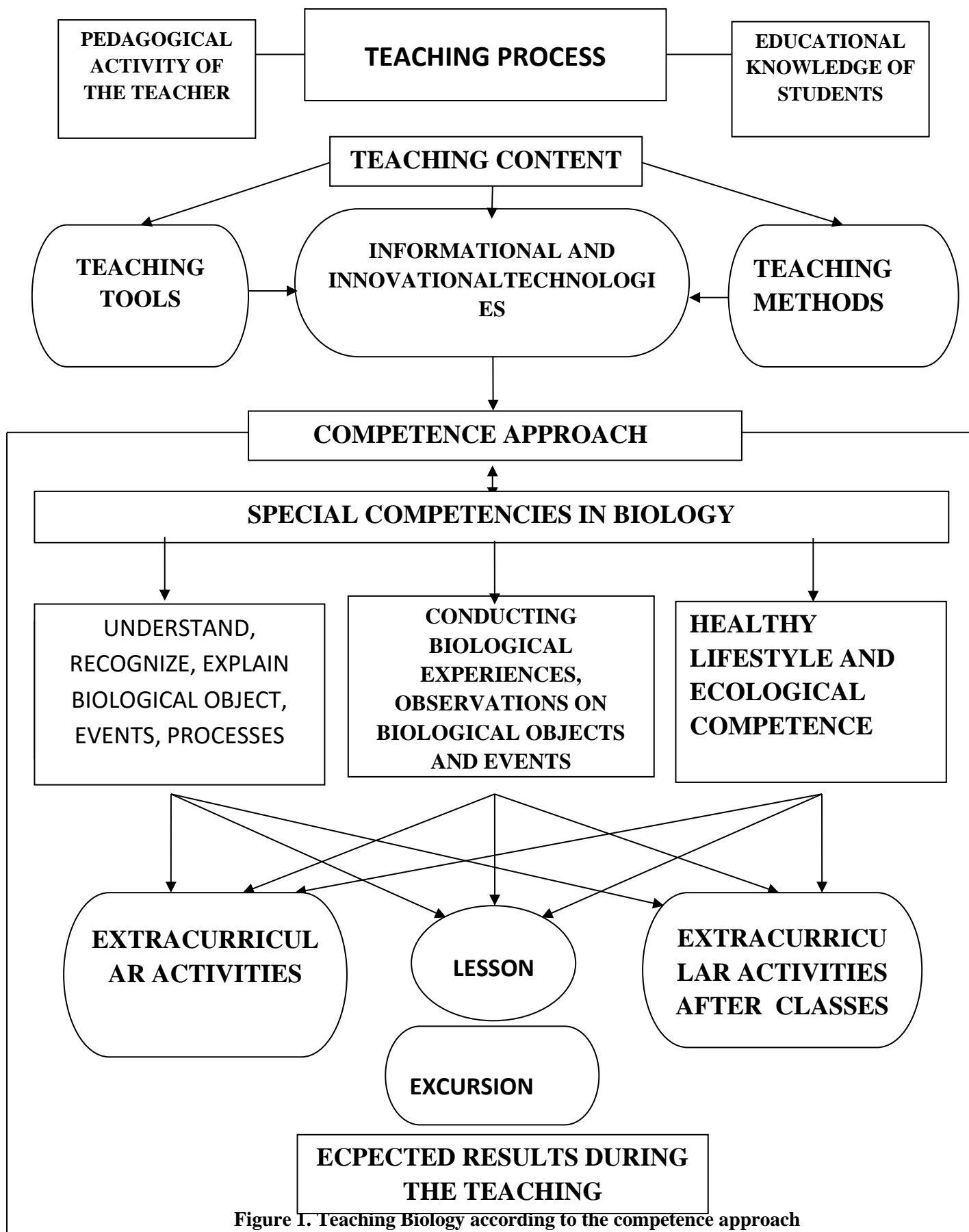


Figure 1. Teaching Biology according to the competence approach

It is much more difficult for students to form basic and science-based comedies only during the lesson. Therefore, the teacher should consider the formation of certain competencies in students in homework and extracurricular activities, which is a necessary form of teaching.

Excursion is an important form of educational process, which allows students to get acquainted with the objects, phenomena, laws, basic theoretical ideas of living nature, to apply theoretical knowledge in practice, to master the methods of knowing the world. The most important part of the educational process, the main driving force of the tour is the direct communication of students with nature, their independent observation, generalization of the results of observations and drawing conclusions.

Excursions are inextricably linked with the course. Objects learned during the tour will be remembered many times during the course, and the collected items will be displayed. During the excursions, students consolidate their previous knowledge, develop their knowledge of nature, conduct observations based on assignments, and collect material. During the excursions, students develop ecological competencies that awaken a love for nature.

Homework is related to lessons as it is of an experimental nature. Students put in less complex experiments at home. In order to confirm the assumptions made in the lesson, they repeat the experience conducted in the classroom, practical work, or complete them.

Extracurricular activities are more complex than homework and require appropriate plants, special tools and other equipment, as well as a long time to complete. Extracurricular activities include observation on specific topics, conducting experiments, training equipment, preparation of exhibition materials. Extracurricular activities are carried out in the biology room, in the wildlife corner, in the experimental plot and in nature. Extracurricular activities are mandatory and students are graded for this. Extracurricular activities should be organized based on the following topics from the 9th grade curriculum. All the tasks performed by the student in 6 extracurricular activities will be videotaped over the phone and presented as a presentation. Sends telegrams to teachers and students (Table 1).

Table 1

№	Name of the theme	Venue	Duration
1	Cellular forms of life (study of the reproduction of blue-green algae)	Wildlife Corner	2-3 weeks
2	Cellular forms of life (reproduction of Pichan rod bacteria)	In wildlife corner.	1-1.5 weeks
3	Замбуруғлар дунёси (Замбуруғларни ўстириш)	In wildlife corner.	1 month
4	Reproductive species (Study of reproductive species)	Experience on the school plot	2 weeks-4 months
5	Post embryonic growing	In wildlife corner.	2-3 months
6	Phenotypic variability	In wildlife corner.	1-2 months

At the beginning of the school year, one topic is given to 3-4 students. Students will be given a topic, start and end dates. A student should do 1-2 extracurricular activities per year. If the school does not have a living nature corner, a plot of learning experience, the teacher recommends doing it at home in agreement with the parents. Below we present our recommendation for the organization of extracurricular activities on "Reproductive species". The topic of "Reproduction" starts 3-4 months before the topic based on the teacher's calendar

work plan. On the date of the lesson, the work will be completed and students will have a ready-made visual material for the lesson.

1. Find the necessary equipment.

2. Assign students to do the work

2. Explain the progress of the work to the students and mark their daily work.

3 students will be selected from the class. One of them is instructed to study the propagation of strawberries by means of curls, the second by garlic bulbs, the third by the study of potato tubers, and samples of these plants are distributed to them for cultivation. Students plant the plants in the designated area and take care of them according to the teacher's instructions. The time of germination of the plant, the amount of water and nutrients are counted and recorded in the observation book. Keeps a record of changes in them in the care book. If the student's work process is videotaped on the phone, it can be shown to classmates via a video projector at the end of the work. In this way, students will witness the multiplication of potatoes from tubers, strawberries from curls, garlic from bulbs.

Extracurricular activities are a non-compulsory form of instruction and there are three types:

1. Individual extracurricular activities; preparation for the Olympics.

2. Extracurricular activities in groups; circles.

3. Mass-organized extracurricular activities. Organizing holiday nights.

Students are not assessed in extracurricular activities, it is not mandatory. Extracurricular activities serve to strengthen, expand, and develop students' knowledge and skills in biology. The work plan of the circle of "Young biologists" in the 9th grades of secondary schools should be organized on the basis of an integrated approach as follows. (Table 2)

Table 2: Young biologists extra lessons work plan

Number	Topics	Ўтказиш вақти	Ўтказиш жойи	Бажарувчи шахс
1	Organizational problems: A) Discussion and approval of the work plan of the extra lesson "Young biologists". B) Election of the organizing committee and chairman. C) Presentation and distribution of works and tasks on the topics included in the work plan of the extra classes.	September	Biology classroom	Teacher
2	Preparation of exhibitions for 9th grade Biology lessons based on Internet resources and their use in the teaching process	October	Biology classroom	A teacher and extra classes members
3	Finding media materials on topics covered in the 9th grade biology textbook, sorting by topics, and organizing a presentation.	November	Biology classroom	A teacher and extra classes members
4	Organizing a video presentation on "Prevent AIDS" with the staff of the AIDS Center.	December	Biology classroom	A teacher and extra classes members
5	Hand-made models of prokaryotic and eukaryotic organisms using different materials, video recording and presentation of their work over the phone (based on the organization of team competitions)	January	Biology classroom	A teacher and extra classes members
6	Finding landscape design and its types on the Internet with the members of the circle, each student	February	Biology classroom	A teacher and extra classes members

	to present their work. Choosing a landscape design for a school.			
7	Find answers to new tests on complex topics in 9th grade Biology from Ziyonet	March	Biology classroom	Members of extra classes
8	Collection and analysis of data from TV programs "Around the World" for 9th grade biology lessons..	April	Biology classroom	Members of extra classes
9	Presentation of the report of the chairman of the organizing committee of the circle on the work done during the academic year and the distribution of summer assignments. Complete the work done in the circle and identify future plans.	May	Biology classroom	A teacher and extra classes members

The above-mentioned forms of teaching Biology: lessons, extracurricular activities, extracurricular activities, there is a constant consistency, coherence and connection, which ensures the integrity of the educational process, forms the competence of students.

The organization of biology lessons on the basis of media education resources is the basis for the formation of students' specific scientific competencies, the acquisition of knowledge in accordance with the requirements of SST, improving the efficiency of the educational process, achieving pre-planned results and methodological solutions.

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