

THE IMPORTANCE OF ORGANIZING STUDENTS' INDEPENDENT WORK IN BOTANY

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ABSTRACT

This article discusses the importance of organizing independent work of students in improving the effectiveness of teaching botany lessons and developing skills of independent work in the in-depth development of the discipline. The questions of the methodology of the organization of independent work of students are highlighted.

Keywords: independent work of students, botany, productivity, task, training, control, herbarium.

INTRODUCTION

Independent work is important in ensuring that students gain in-depth knowledge of botany. There are about 500,000 species of low and high plants on Earth, [2] including 2 classes, 533 families belonging to 13,000 genera, more than 250,000 species of flowering plants or magnolia. There are 8,097 species of higher plants in Central Asia and more than 4,500 in Uzbekistan. [1] The abundance and diversity of plant species requires a thorough study of them. In this process, one of the most important measures is the proper organization of independent work of students and the clear definition of tasks.

Independent thinking, any type of activity that creates conditions for the occurrence of cognitive activity is associated with independent work. [6].

Independent work is a means of shaping an important personality trait, such as independence, a form of organizing students' learning activities that requires activity, independence of thought, creativity, perseverance, and initiative in task performance. Independent work is an activity in which students check their goals, objectives, forms of expression and results, and it is the teacher's duty and responsibility to help organize and encourage this type of activity. [7]. In preparation for the independent performance and defense of tasks in botany (working with terms, preparing herbariums, learning the Latin names of plants, memorizing systematic taxa, solving test tasks ...), students are able to think freely, strengthen memory, and creative activity, independent decision-making, while increasing interest in science.

LITERATURE ANALYSIS AND METHODS

Botany is taught in 1,2,3 courses of biology. Students will be introduced to the anatomy, morphology, systematics and physiology of plants in botany. A number of publications in this field have been published, and all scientific information can be learned from these publications. In particular, in the standard program approved in 2021 in the field of botany in 2010 provided

as the main literature O'Pratov, L.Shamsuvaliyeva., Et al. and the textbook Botany, published in 2002 by Mustafaev SM.

In 2011, Tafakkur Publishing published J.O. Tolipova, M.T. Umaraliyeva's Methodological Manual for Grade 6 Teachers, Botany Lessons, provides information on exercises that develop independent learning skills in biology lessons.

In 2009, O.V. The textbook "Independent work of students", published by Uvarovskaya, I.Yu. Kraeva, provides detailed information on the types of independent work, the procedure for its application. illuminated. In addition, at the end of the manual there is an explanation of the terms, which also provides an opportunity to get detailed information.

Types of independent works, their application and a detailed description are given in the <https://mywordworld.ru/uz/kartiny-hudozhnikov/soderzhanie-samostoyatelnoi-raboty-studentov-samostoyatelnaya-podgotovka/> and in <https://mywordworld.ru/uz/kartiny-hudozhnikov/soderzhanie-samostoyatelnoi-raboty-studentov-samostoyatelnaya-podgotovka/> links.

In the field of botany, methods such as observation, questionnaires, written work, tests and comparisons were used to determine the importance of the activities of students in the effectiveness of education through the organization of independent work.

DISCUSSION

The course of botany (plant systematics) at the university is designed for 2 semesters, and 45 - 50% of the total time allocated for the subject is devoted to independent study. Therefore, in-depth teaching of the basics of science, IWS is very important to properly plan, determine the form of the assignment and the deadline.

Student Independent Work (IWS) is a routine work performed by students without his or her based on the teacher's guidelines.

The technology of setting up IWS is done on a step-by-step basis. Its effectiveness is explained by the careful preparation of the teacher in terms of teaching methods and the availability of an appropriate teaching methodological base.

Thorough methodological training of teachers is based on the fact that the tasks for the organization of IWS in science are designed and planned in a way that meets all the requirements.

We know that independent work is done in the auditorium and outside the auditorium. Most of us understand independent work as teaching and methodological work that takes place outside the classroom. However, the organization of independent activities of students during the lesson also gives good results in mastering the subject. Independent work in botany can be carried out in practical, laboratory and lecture classes. Quick question and answer, control tests and What?, When?, Where? and can be controlled through similar moon exercises.

In practical and laboratory classes, using various forms of independent work, it has a positive effect on the meaningful organization of the educational process and increasing the activity and mood of students.

When conducting laboratory training, it is advisable to conduct IWS in the following sequence of organization:

1. Teacher's introduction (about the purpose of the lesson, the main issues under consideration)

2. Conduct a frontal question and answer session to determine students' readiness for the lesson.
3. Demonstrate solutions to tasks on the topic discussed on the board; (based on group discussion)
4. Assign assignments for independent performance and monitor independent performance;
5. Discussion of independent work in groups (at the end of the lesson or in the next lesson)

In the Botany course, students prepare for previously assigned independent work topics. Receives the necessary methodological instructions from the science teacher on the procedure for studying, formalizing and defending an independent work before the deadline.

The organization of independent work of students in botany classes on the basis of the teacher's guidelines, along with increasing their interest in science, develops the skills of independent work. These include working with herbariums, studying natural plant samples, sorting seeds according to different characteristics, and more. Similarly, based on the knowledge, skills and abilities acquired in the classroom, they are able to independently perform tasks on the subject outside the classroom. Planning independent work, taking into account the interest of students in science and the acquisition of thorough knowledge, taking into account the form, size, stage of study, the time allotted for the subject, leads to the expected result.

Conditions for successful implementation of IWS in Botany include:

- Purposefulness of the learning task;
- Development of educational tasks (external and internal structure, systematics and importance of plants) (herbarium preparation, collection of plant collections);
- Consistency of independent work (based on morphological, anatomical, then (in the second year) systematic content) content in botany) and taking into account the student's ability to master;
- Clear definition of the form, scope and deadline for submission of independent assignments by the teacher;
- Advise on independent work, introduce reporting and evaluation criteria;
- Defining forms and types of control (practice, tests, seminars, etc.).

Thus, the effectiveness of the organization of IWS should be based on a comprehensive approach (independent work with the audience and outside the audience), regular monitoring of the quality of independent work (with advice and demands), the use of various forms of control. [3]. If the above conditions are fully observed in the planning and organization of IWS, the level of knowledge of students, their interest in studying science will change for the better. Planning and organizing independent work to increase the effectiveness of teaching botany encourages students to enrich their understanding of the plant world, to conduct independent research on living objects in nature, to study the basics of science in the preparation of independent herbariums.

OUTCOME

In order to determine the impact of independent work on the subject of botany (plant systematics) on the level of knowledge of students and the effectiveness of mastering, a test was conducted after 5 para lessons. The selected experiment and control groups were given test

options consisting of 25 questions with the same content. The results showed that the level of knowledge of students in the experimental groups was much higher than in the control groups.

S/n	The name of the controlled subject	Hour	Control form and number of tests	General index of the experimental group	General performance of the control group
1	General description of higher plants. Division Lycopodiophyta	2	5 tests	4,7	4
2	Division Equisetophyta. and division Polypodiophyta.	2	5 tests	5	4,5
3	Division Pinophyta or Gymnospermae;	2	5 tests	4,7	4,5
4	Division Magnoliophyta. Class Caryophyllidae.	2	5 tests	4,8	4,6
5	Class Rosidae and order Fabales		2 tests	5	4,8
Total: (number of tests and average student score)		10	25 tests	4,8	4,5

CONCLUSION

According to the results of tests conducted in experimental and control groups, the effectiveness of lessons in botany through the organization of independent work of students was much higher than in control groups. From the above results, it can be concluded that the lessons conducted in both parallel groups on the same topics with only a different approach, ie the usual method and focus on the organization of independent work in groups, had a different impact on student learning. The organization of independent work and the focus on monitoring and evaluation of the implementation of assigned tasks has a positive impact on students' in-depth knowledge of botany.

Conducting various tasks in the organization of independent work of students in botany, the use of exercises in the development of their future as professionals, to arouse their interest in the organization of the basics of science, to prepare the ground for future scientific work in the biological sciences. plays an important role.

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