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USING INNOVATIVE METHODS IN SECONDARY SCHOOLS

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ABSTRACT: Educational practice shows that the establishment of interdisciplinary connections in school education is a vivid expression of the integration processes taking place today in science and society. This connection plays an important role in the conscious assimilation of knowledge by students, the development of a holistic view of the world, and the improvement of their practical and scientific-methodical training. Such training allows graduates of general secondary education to freely apply the knowledge, skills, and competencies acquired in the classroom and in extracurricular activities, in production, and in general in any activity.
Key words: integration, science method, lesson, natural science.

INTRODUCTION

Summarizing the experiences of teachers in ensuring interdisciplinary connections, lessons organized in interdisciplinary connections can be divided into three groups[1].

1. Based on the representation of interdisciplinary elements in various tables and models used to complete individual tasks on the topic being studied in a lesson organized on the basis of demonstration. For example, in biology lessons, on the study of topics similar in content such as plants, animals and humans, that is, living organisms.
2. Similarity of topics: increasing the effectiveness of the lesson based on the use of interdisciplinary connections as an integral part of the educational process.
3. Generalization - creating an opportunity for students to repeat the acquired knowledge in specially organized generalization lessons in various academic subjects in order to perfectly teach the general laws and principles of academic subjects[3].

If the following didactic conditions are observed during the lesson, the effectiveness of the integrated approach to teaching is achieved. These include including lessons organized on the basis of interdisciplinary connections in the curriculum by harmonizing the content of the topics of the studied academic subjects; ensuring the quality of education of lessons organized on the basis of interdisciplinary connections and strengthening its educational aspects, using concepts from similar or mixed academic subjects in the lessons to form students' scientific worldviews and certain skills and qualifications, etc.

In ensuring interdisciplinary connections, this goal can be achieved through the effective use of various means of accelerating students' cognitive activities, such as, for example, in mixed learning courses, problem-solving, demonstration, independent work, and the organization of individual tasks.

In order to deepen the students' understanding of the lesson materials studied on the basis of interdisciplinary connections, it is important to use other lesson materials, and that these materials are interconnected in terms of content. In this case, there may be repeating, generalizing, learning new material, strengthening skills and qualifications, and control lessons.

Interdisciplinary connections further enrich these contradictions of the educational process, on the basis of which new contradictions arise. They are used in the assimilation of knowledge learned from this subject and in solving problems based on interdisciplinary connections, and in the assimilation of knowledge from various other disciplines. In this case, a problematic situation

arises based on the contradictions between students' cognitive activities and the harmonized content of the subject [2].

During lessons organized on the basis of interdisciplinary connections, the student's thinking activity is carried out by analyzing the mechanisms of determination, generalizing knowledge and concepts on the basis of interdisciplinary connections. As a result, a generalized goal of actions appears. Developing a comprehensive program for solving a problem on the basis of interdisciplinary connections is a continuous creative process. Because such programs are created by analyzing and generalizing the methods of using knowledge acquired from different academic subjects in a meaningful situation.

The following didactic requirements are imposed on lessons conducted on the basis of interdisciplinary connections:

1. Involvement of knowledge acquired from other subjects in the mastery of a new topic in the lesson being studied on the basis of interdisciplinary connections and the ability to apply them.

2. Ensuring the effectiveness of students' cognitive activities in applying knowledge from other subjects in the lesson being studied on the basis of interdisciplinary connections. The teacher should not repeat the material of another subject during the lesson. The goal of ensuring interdisciplinary connections is to form in students the ability to independently apply their knowledge from different subjects in solving new questions and problems. To do this, at the beginning of the lesson or in the process of explaining new material, review conversations are held to clarify the knowledge included in the content of other subjects, problem situations are created, which require the application of knowledge acquired from related subjects; regular homework is given to consolidate the acquired knowledge; along with group work, individual assignments (interest-based, selective, mandatory) are provided.

3. The lesson should be aimed at explaining the essence and cause-and-effect relationships of the phenomena being studied, based on ensuring interdisciplinary connections. For example, before studying the structure and function of the root in natural science lessons, the teacher learned about the connection of the topic with physics and chemistry. In this case, such a connection between academic subjects will have only an external nature, remaining at the level of imagination and reproductive actions. In order to systematize interdisciplinary knowledge and concepts, it is advisable to compile summary tables for individual academic subjects (or for academic problems in different subjects).

4. The topics of the lesson studied on the basis of interdisciplinary connections should consist of conclusions of a generalized nature, based on a worldview based on the connection of knowledge from different disciplines. Students can understand the objectivity of such conclusions only when they are convinced of the need to involve knowledge from closely related disciplines.

5. A lesson based on the use of interdisciplinary connections should evoke positive impressions in students and arouse their interest in learning about the differences and connections between the knowledge they have gained from different subjects.

6. The educational materials studied on the basis of interdisciplinary connections should be generalized. Therefore, it is advisable to use various forms of education that provide generalization of the tasks of interdisciplinary connections: embodied homework, generalizing review lessons, travel lessons, etc.[4].

The personalized approach in organizing integrated lessons implies giving importance not only to the class or group, but to each student. In this case, his personal qualities and abilities are highlighted separately, and his interests are taken into account. For this purpose, games such as “Burn your star”, “Your flower in a bouquet”, “Your favorite book” can be used. During the game, attention is focused on only one student. A favorite book, along with replenishing the class library, acquires an owner (signature). Adapting to the interests and abilities of students requires

developing their artistic activity. It is intended to encourage originality, creativity, and dexterity in obtaining knowledge and solving artistic life problems. In this regard, it is necessary to encourage children's independent creativity in various ways, such as writing poems and stories, inventing new dances, cooking delicious dishes, creating instruments, and creating shapes from plants. For him, natural sciences, native language, music, and other subjects are not just names, but the diversity of sounds, colors, and sizes of objects in the world around them. The teacher feels and knows that children need to be taught to see the interconnectedness of everything in nature and everyday life[5]. Therefore, educational integration is a modern requirement.

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