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Research Article

INTERDISCIPLINARY INTEGRATION – A FACTOR FOR DEVELOPING STUDENT THINKING

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Kholmurodov Sh.O.
Termiz State Pedagogical Institute, Uzbekistan

ABSTRACT

The article emphasizes the fact that interdisciplinary integration is a factor that develops student thinking using modern educational technologies.

KEYWORDS

Process, task, learning, knowledge, system, passion, interdisciplinary, direction, type, connection, quantity, positive, conclusion, form, idea, thinking, task, game.

INTRODUCTION

It is a fact that does not require proof that the main task in organizing the educational process is the effective use of modern educational technologies. But to date, most of the modern educational technologies are devoted to theoretical problems, and the impact on practice is less noticeable. For this, it is necessary to develop methods and methods of faster implementation of modern educational technologies.

In education, it is no longer enough to deliver a certain system of knowledge to students, to memorize them. One of the most urgent tasks is to motivate students in modern education, to develop a desire to learn independently, and to provide education based on interdisciplinary integration. Modern educational technologies are an educational system aimed at realizing such a demand. The main requirement of modern educational technologies is for students to acquire thorough and in-depth knowledge, to be active in acquiring knowledge, to think independently, and to achieve a clear and effective result in education. Modern educational technologies have different aspects. In this article, we want to discuss only one

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issue, that is, interdisciplinary integration and ways to achieve effective results through it.

Interdisciplinary integration - integration of some parts or elements, becoming a whole, rounding up The concept of "integration" was explained by Spencer in the 18th century. We also looked at integration as a factor in the development of thinking and tried to interpret it as a synthesis of interdisciplinary communication and educational forms.

Integration means whole, so this thinking is about integrating the different parts and elements of the growth process into a single whole.

Integration is not a mechanical combination of sciences, it is a synthesis, the origin of something new, or rather, discovery. Convergence of separate systems, connection and creation of a single new thing.

Integration is the opposite of differentiation. It is advisable to implement it in the following directions:

a) integrated study of academic subjects and content within subjects;

b) integration of the activities of persons teaching different educational subjects;

c) forms of organization of educational work or integration of the educational day.

Researcher B.S.Abdullaeva divides interdisciplinary communication into the following types:

1) meaningful; 2) operational; 3) methodological; 4) organizational.

As stated by B.S.Abdullaeva, skills, qualifications and competences form the educational process through thinking operations.

It is known that since the announcement of the "National Personnel Training Program", the number of subjects in the curriculum has increased by 20 in general education schools. Increasing the number of academic subjects, of course, does not always bring positive results. Because today's modern educational technologies require not only quantity, but quality changes as well. In this regard, it is necessary to rely on the experience of developed countries. 70% of them use integrative curriculum and textbooks in the educational system. For example, integrated subjects are mainly introduced in the educational system of Great Britain, while integrated subjects are taught in South Korea and Switzerland, educational subjects in the direction of culture in Hungary, and science and technology in Ireland.

A.A. Abdukadirov and M. Aripov stated that it is necessary to have the opportunity to familiarize students with speech styles using information from other subjects. Students should study the artistic method of literature, the scientific method of biology, chemistry, physics, astronomy, mathematics, informatics, the method of working papers on the basis of materials taken from the sciences of the fundamentals of law.

In our opinion, in order to positively solve the principle of interdisciplinary connection (integration) in computer science, it is necessary to separately develop the practical system of the program and the materials given in the textbooks.

Summing up from the above, it can be said that in order to teach computer science in connection with mathematics, physics, biology, chemistry, natural geography, modern Uzbek literary language classes with literature, national independent painting, and drawing subjects, it is necessary to follow modular lesson technologies. Because such subjects teach students creativity and independent thinking.

The teacher's creativity lies in the fact that they design the aspects that are known to the subject, but

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the student does not know, first of all, and encourage their students to do the same. Since this is the case, the implementation of interdisciplinary integration through the organization of module lessons is an effective method for the development of thinking in secondary school students.

It seems that interdisciplinary integration is not necessary in imparting knowledge, but it is a way for a person to understand the world more widely and deeply, and students' scientific worldview expands: language, art, history, music, concrete and natural, in addition, music, social and humanitarian sciences deeply understand the laws, learns the connection. It is part of the modern methods of teaching students to be creative, directing them to research, generating imagination, fantasy. For example, the teacher enters the class and engages the students in discussions.

The student acquires knowledge by thinking and performing activities, thinking develops due to the movement that occurs in his mind. It is known that the process of mastering consists of situations such as feeling, understanding, knowing and developing skills. As academician I.P. Pavlov noted, education consists of communication, thought, thinking and knowledge. Interdisciplinary communication helps students to enrich their previously acquired knowledge with new knowledge, to explain the essence of facts and events. It is necessary for the teacher to organize integrative lessons and motivate students to acquire knowledge in order to make students think independently about events and scientifically base their opinion.

The given task is productive, and students fantasize based on their own plans. Tasks of productive level have didactic value. Because in the process of completing such a task, students think logically, draw a conclusion based on the analysis of assignments.

Visualization means to show in front of the eyes, to define image means in informatics. That is, mental activities such as listening, imagining, understanding, understanding, memorization, and assimilation take place. Thinking about something is the highest level of mental intelligence. Mental intelligence is related to human memory and intelligence. In the organization of module lessons based on integration, both stages of intellectual ingenuity occur.

Creativity plays an important role in the development of the mind. Through creativity in the organization of integrative lessons, students' minds can be developed. Many exercises in interdisciplinary integrative lessons teach the student to search, think, and make creative discoveries. It means integration, creativity, ingenuity, memory consolidation, research, imagination. We can confirm the correctness of our experiments by comparing them with the opinions of academician I.T. Pavlov. According to him, creativity is first born in human imagination, then research is conducted on issues related to it... That is why it is important to know the connection between academic subjects, to base the education process on these laws.

Integration is consistent with the following thoughts of Farididdin Ator: there is no small thing on earth, everything is interrelated and complements each other.

As above, the tasks given in computer science can be modified in classes. Opinions were shared on how to conduct module classes on the basis of integration. In order to organize integrated classes, the teacher determines ways to increase student activity, models of subject transition, tools, methods and methods to be used during training. In the implementation of these works, consistent requirements related to the subject should be set. To do this, the teacher will create an extended plan of the lesson, works based on this plan.

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Students are individually sought through independent thinking, resulting in the development of their thinking.

Professors B.Ziyomuhammedov and Sh.Abdullaeva emphasize that the technology of the educational process should be developed for one lesson, one subject, or a part of the subject, the whole subject, and show that it has the following 5 principles:

the first is to formulate the main goal expected from a specific lesson, topic, section, educational subject;

the second is to divide the lesson or academic subject into modules and determine the goals expected from each module and the system of issues to be solved within the modules;

the third is to open a test in the module;

the fourth is to determine the methods of achieving goals;

the fifth is to pay special attention to the necessary connections between the parts of the lesson and interdisciplinary connections based on the principle of unity.

Integration creates an opportunity and conditions for the development of thinking. Integration is an important means of individual work with the student and his activation.

As a result of the organization of interdisciplinary communication in lessons, the number of educational subjects will be reduced, the effect will be more thorough, it will be easier to teach students to think independently.

By organizing integrative classes, it is possible to teach to debate, to create fantasy, to organize interclass competition, question-and-answer. The main purpose of using such modern types of lessons is to activate the activity of students in the educational process, to achieve a high level of mastering the educational material. Such technology teaches students to imagine the world in a different way, to connect practice with life, not to memorize theoretical rules verbatim, to understand the harmony of the individual and society, to achieve diversity of thoughts, to think non-standard, and also to understand the ways of self-development.

In order to increase the quality and efficiency of education, it is necessary to create integrated programs and textbooks.

Educator U. Musaev offers different levels of integration as follows. Integration based on sequential presentation of topics; in this case, the principle of concentrism is followed in the presentation of educational materials, that is, the previous educational material complements the next one.

The following conclusions can be drawn from the above-mentioned opinions regarding the organization of integrated classes:

1. Integration based on the creation of mutually compatible points in educational programs, that is, ensuring inter-subject harmony. It is clear that it is given in the textbooks of natural and social and humanitarian sciences, which means that it is in common with the above ideas, that is, it is compatible.

2. Modular integration - knowledge and concepts related to related subjects are given in one system.

The technology of organizing such modular classes was presented above.

3. Cross-curricular integration: in this case, teaching materials in one class are combined with materials that are essentially similar in another class.

The results of our research show that the 34 hours of lessons spent on each subject of general education schools are saved, the energy of the teacher and the

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student is not wasted, and the connection between theory and practice is realized.

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