Impact Factor: 9.9 ISSN-L: 2544-980X

Problems and Solutions in Teaching the Importance of Vitamins

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Annotation: This article discusses the methodology of teaching the topic of vitamins. It examines the use of the dialog method and the application of brainstorming questions to develop students' scientific awareness. In the dialog method, the teacher and student or student-to-student (the entire class) actively participate. Managing the dialogue to ensure the participation of all students in the class is the key to a successful lesson. Vitamins are almost not synthesized in the body or are synthesized in very small amounts.

Keywords: vitamin, lesson, dialogue, group, student, teaching methodology, body, quantity.

It is possible to develop a teaching methodology for the lesson topic based on problem-solving technology. Using game-based technologies generates significant interest in the topic among students. Organizing a "brainstorming" session is relatively simple and highly useful for finding solutions to problems. First, a group is gathered, and a problem is presented to them. All participants then express their ideas about the solution to the problem. At this stage, no one has the right to criticize or evaluate the ideas and thoughts of others. Thus, through brainstorming, dozens of ideas can emerge in a short time. However, the main goal is not just the quantity of ideas but using them as a basis for developing a rational solution to the problem. One of the conditions of this method is ensuring every participant actively contributes without external pressure.

Using the dialog method in teaching to develop students' scientific awareness leads to good results. The peculiarity of dialog-based teaching is that it involves students to a certain extent in the process of acquiring new knowledge. The richer students' reserves of imagination, the more meaningful and interesting the dialogue becomes.

Important Rules for Dialog-Based Teaching:

- Provide an opportunity to think about the question.
- While one student answers, others must listen carefully.
- If necessary, invite students to correct or add to the answer.
- Conduct the dialogue based on a pre-prepared plan.

During the dialogue, visual aids such as diagrams, tables, pictures, slides, and other tools should be used. If questions are provided in advance, students can prepare independently and find additional information, saving time.

Question: What are vitamins? What is their importance, and in what food products are they found?

Answer:

1. Student 1: Vitamins (from the Latin vita, meaning "life") are chemical organic compounds essential for the normal growth and development of the body and occur in relatively small

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amounts. These substances often enter the human and animal bodies with food. Vitamins enter the human body through plant or animal products.

2. Student 2: There are over 40 types of vitamins, each performing an important physiological function in the human body. If a particular vitamin is consistently missing from the daily diet for several weeks or months, its physiological function in the body is disrupted, resulting in specific diseases. If a vitamin completely disappears from the body, it is called avitaminosis; if its quantity decreases, it is called hypovitaminosis; and if it exceeds the norm, it is called hypervitaminosis. Each of these conditions leads to specific symptoms of illness. Different vitamins perform different functions.
3. Student 3: Vitamins are divided into two major groups:

1. Water-soluble vitamins.
2. Fat-soluble vitamins.

Water-soluble vitamins include vitamin B1, vitamin B2, vitamin B6, vitamin B12, vitamin PP, vitamin C, vitamin P, and some other substances. Fat-soluble vitamins include vitamin A, vitamin D, vitamin E, and vitamin K.

Student 4: Vitamins are essential nutrients. They are necessary for normal metabolism, body growth and development, protection against harmful environmental factors, and ensuring the proper functioning of all vital processes. The human body does not synthesize vitamins and must obtain them in ready-made form in amounts that meet its physiological needs. Vitamins serve as catalysts for biochemical reactions. They act as coenzymes for various enzymes involved in regulating the metabolism of carbohydrates, proteins, fats, and minerals. Even in small doses, vitamins exhibit high biological activity, support tissue growth and renewal, play a role in reproductive function, maintain immune reactivity, and ensure the normal functioning of all organs and tissues.

Student 5: The absence or deficiency of vitamins disrupts these processes and leads to the development of various pathologies. A lack of vitamins or mineral elements can result in hypovitaminosis or diselementosis, which may manifest as other specific diseases. Most of these pathological conditions have been described in existing medical literature. Currently, hypovitaminosis such as macrocytic (pernicious) hyperchromic anemia (vitamin B12 deficiency), hemorrhagic disease of newborns (vitamin K deficiency), and rickets (vitamin D deficiency) are well-known and widespread.

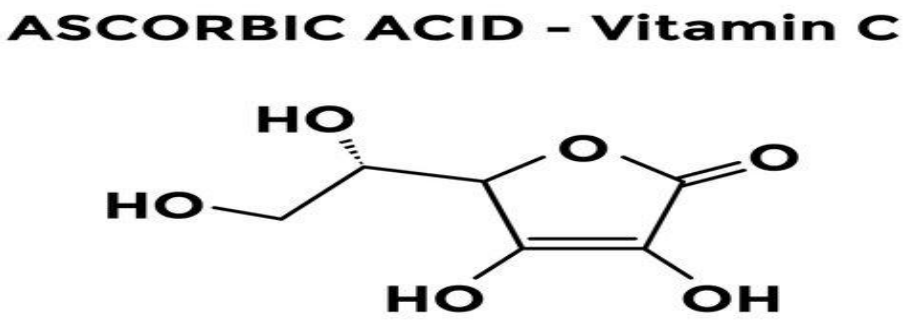
Following this, the lesson continues in a dialog format, and the following questions are discussed:

- Who studied the effects of vitamins on the human body?
- What is tocopherol, and what are its benefits?
- What role do vitamins play in human life?
- What types of vitamins do you know?
- Why is vitamin A beneficial, and in which food products is it found?
- Name the B group vitamins.
- Which food products are rich in B vitamins?
- Why do people need vitamin C?
- What processes does vitamin K regulate?
- Why do you think vitamin D is necessary?
- What are the benefits of vitamin PP?
- Is it essential to take vitamins as supplements?

The teacher summarizes all the ideas and encourages the students:

Vitamins are a group of substances found in food. They are essential for the body's functioning and health. Naturally, many people wonder if they are consuming enough vitamins. Even though the body's need for vitamins is minimal, concerns about this are not unfounded. It largely depends on dietary habits, i.e., the food they consume.

Vitamin C, beneficial for tissues, bones, and teeth, is found in citrus fruits, tomatoes, and raw cabbage.



A person who consumes a variety of foods will receive all known vitamins today (except for vitamin D). The issue is that some individuals do not pay enough attention to food selection, fail to diversify their diet, and do not consume key foods containing essential vitamins. When eating a balanced diet, there is no need to take vitamins as supplements.

In organizing each lesson, a specific method is selected, and its implementation is supported by innovative approaches. If presentations and visual aids are used during the lesson, it improves students' clarity of thought, fluency of speech, and retention of information.

References:

1. Донецкая, Э. Г. Клиническая микробиология / Донецкая Э. Г. -А. - Москва: ГЭОТАР-Медиа, 2011. - 480 с. (Серия "Библиотека врача-специалиста") - ISBN 978-5-9704-1830-7.
2. Mirkomilov Sh.M., Omonov X., Raxmatullayev N.G‘. Kimyo o‘qitish metodikasi. Darslik T.: —Moliya iqtisod. 2013. 318-b.
3. Ш.Р. Сайдахметова Биоорганическая химия. Учебник для педагогических вузов. Т.: 2024/214U-312. Т.: TDPU-Adad plus. С.-232.
4. Saydaxmetova, S. R. AG‘. Maxsumov. “Organik kimyo”. O‘quv qo‘llanma. "Ilm ziyo zakovat"-Toshkent: 2020. 280-Бет.
5. Sh.R. Saydaxmetova Kimyo o‘qitish metodikasi”. O‘quv qo‘llanma. T.: TDPU-Adad plus. 2021. 156-Bet.
6. Zaxarova I.N., Sugyan N.G., Dmitrieva Yu.A. Maktabgacha yoshdagi bolalarda mikronutrient yetishmovchiligi. Zamonaviy pediatriya savollari. 2014;13(4):63–69. DOI: 10.15690
7. Ikramova, Z. A., & Kadirov, M. A. (2023). ENVIRONMENTAL PROBLEMS OF CHEMICAL PRODUCTION FACILITIES. *Research and Publication*, *1*(11), 46-48.
8. Moxidil Dadaxodjayeva, Kamola Ergasheva, Shaxnoza Saydaxmetova ““Vodorod” mavzusini muammoli texnologiya asosida o'qitish metodikasi” 2024/2.Ta'lim, fan va innovatsiya ISSN 2181-8274