

STEPS OF TEACHING NATURAL SCIENCES IN PRIMARY CLASSES BASED ON THE 5E MODEL

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In this article, the importance of interesting and meaningful teaching of natural sciences for elementary school students in the educational process and the acquisition of solid knowledge of natural sciences is recognized as the first step towards scientific thinking, conscious attitude towards the environment and creative discoveries of the future generation. It has been revealed that the introduction of the 5E model into the educational system of Uzbekistan is aimed at increasing the activity of students and increasing their practical knowledge.

In our country, as a result of the reforms aimed at ensuring the development of modern approaches in the higher education system, which provides for the training of pedagogues for the continuous education system based on advanced foreign experiences, research is being conducted on the modernization of the modern educational content of the future primary education teacher training, and the creation of an educational environment aimed at creating the necessary conditions that allow students to realize their inner potential. Elementary class in the implementation of the tasks specified in the decree of the President of the Republic of Uzbekistan dated February 7, 2017 "On the strategy of actions for the further development of the Republic of Uzbekistan" and "On measures to fundamentally improve the system of general secondary, secondary special and vocational education" dated January 25, 2018 and other regulatory and legal documents related to this field the role of a teacher is incomparable

Because the primary school teacher plays an important role in developing the literacy of the students who first stepped into school, and in their personal formation. In the educational system, elementary education is considered the main link, which directly helps students to successfully master the key type of education. Primary education is the initial stage of general secondary education. Primary education in the Republic of Uzbekistan is the first education of children in grades 1-4 and the beginning of their spiritual development. It covers grades 1-4 and starts at age 6-7.

Primary education is the initial stage of general secondary education. In the Republic of Uzbekistan, primary education is the first education of children in grades 1-4 and the beginning of their spiritual development. It is important to determine the content of education.

It is aimed at preparing future primary school teachers at a high level of qualification for the educational process intended for grades 1-4 in general secondary schools of the Republic of Uzbekistan, increasing their role in society, teaching based on new innovative technologies, technologies mastering information and foreign Currently, interesting and meaningful teaching of natural sciences is important for elementary school students in the educational process. A solid knowledge of natural sciences is

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recognized as the first step towards scientific thinking, environmental awareness and creative discoveries of the next generation. According to the research conducted in developed educational centers of the world (Europe, USA, Japan, South Korea, China), a student who does not thoroughly master the subjects at the initial stage of education may fall behind in the subjects in the upper grades, may not be able to deepen the knowledge being studied, or may lose interest in research work. For this purpose, the introduction of the 5E model into the educational system of Uzbekistan is aimed at increasing the activity of students and improving their practical knowledge.

The 5E Model is a five-step teaching methodology based on the theory of constructivism, aimed at ensuring active learning of children in primary education. Each of its stages is supported by academic concepts (pedagogy, psychology, cognitive sciences).

The 5E model is a modern pedagogical approach that encourages students to actively participate in the educational process, expands and strengthens their knowledge. This model is primarily used in teaching research-based subjects, but can be adapted for other subjects as well.

In the educational system of Uzbekistan, the 5E model has been introduced on a trial basis since the 2020s. This was due to the following factors

- 1. Educational reforms: Presidential decrees and programs aimed at applying innovative methods within the "Concept of Improving the Quality of Education"
- 2. International experiences: combined with the constructive approaches of countries such as Finland and Singapore
- Digital educational integration: Attempts to implement interdisciplinary communication through digital platforms (for example, the First Step program).

As of 2024, the model is being used in pilot tests in regions such as the Syrdarya region. In particular, programs were developed based on the 5E model as part of the "Interdisciplinary integration in the digital educational environment" projects.

The 5E model includes the following 5 steps:

- 1. Engage (Interest): At this stage, it is necessary to arouse interest in the new topic in the students, to attract them to the topic. At this stage, activities such as asking questions and showing a short video or story related to the topic are often carried out.
- 2. Explore: Encourage students to work independently or in groups. At this stage, students conduct research on the topic, conduct various experiments or solve problems. It is necessary to create an opportunity for students to acquire new knowledge.
- 3. Explain: At this stage, the teacher explains the learned material to the students. Students express their opinions and the teacher explains the concepts of the topic more fully.
- 4. Elaborate (Expand): Give students the opportunity to further explore their new knowledge. At this stage, students apply their knowledge in a variety of situations, such as adapting to new situations, making connections with other topics, or beginning to solve more complex problems.
- 5. Evaluate (Evaluation): Assessing the level of students' learning. In this phase, students test their knowledge, and the teacher uses various assessment methods, such as quizzes, questions, or discussions, to assess student understanding.

In conclusion, this should be said

The 5E model is an innovative pedagogical approach in modern education aimed at involving students in the process of active learning, developing their critical thinking,

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research and practical skills. The five stages of this model (Engage, Explore, Explain, Elaborate, Evaluate) organize the learning process in a systematic, consistent and relevant context.

Used literature:

- 1.B.Namdar, M.Kucuk. Preservice Science Teachers' Practices of Critiquing and Revising 5E Lesson Plans. Journal of Science Teacher Education. 2018, May.
- 2.Fatchul Fauzi, Ali Mustadi. Learner autonomy using 5e learning cycle. Universitas Negeri Yogyakarta, Indonesia, 2019.
- 3. Biological Sciences Curriculum Study (BSCS). (2016). The BSCS 5E Instructional Model: Creating Teachable Moments. https://bscs.org
- 4. National Science Teaching Association (NSTA). (2020). Resources for Elementary Science Education. https://www.nsta.org
- 5. European Journal of Education. (2019). Innovations in Science Education Across Europe.
- 6. OECD. (2019). PISA 2018 Results (Volume I): What Students Know and Can Do. https://www.oecd.org
- UNESCO. (2021).Education for Sustainable Development: Roadmap. https://en.unesco.org

