

**FORMATION OF INITIAL CONCEPTS ABOUT ENERGY THROUGH MEDIA  
EDUCATION: METHODOLOGICAL RECOMMENDATIONS***Muratova Gulshoda Botyrovna**Master's Student, Termez University of Economics and Service*

**Abstract.** The article presents proposals and recommendations concerning the methodological support for the use of media education resources in forming initial concepts about energy among primary school students within the subject "Natural Sciences."

**Keywords:** Energy, media education, formative and summative assessment, interdisciplinary integration.

Today, the energy sector is one of the critical areas directly impacting the daily lives of every citizen. Forming concepts in children about energy sources, their types, conservation, and ecological safety can be effectively implemented through modern media education approaches.

Media education is an instructional methodology aimed at developing students' skills in searching for information through media tools, analyzing it, critical thinking, and fostering creative approaches. This approach serves as an effective tool in assimilating initial knowledge about energy.

In providing a generalized description of integration, three levels of knowledge integration can be distinguished:

The empirical level (descriptive) combines specific information from various fields;

The theoretical level synthesizes modern fundamental theories, thereby creating a holistic system of theoretical scientific concepts about a particular phenomenon;

The methodological level integrates the essential ideas of various methodological approaches relevant to the phenomenon under study and its development .

The goal of teaching Natural Sciences is to orient students towards lifelong learning and equip them with 21st-century competencies—such as communication, creative thinking, collaboration, digital literacy, critical thinking, problem-solving and decision-making, as well as research and science-related competencies—developed on the basis of national and universal values. This aims to create a solid foundation for active citizenship and professional activity. Research competencies involve:

Using models, defining research goals and planning, conducting research, analyzing research results, evaluating and drawing conclusions.

Science-related competencies involve:

Understanding, explaining, analyzing, and evaluating the essence of natural phenomena, applying fundamental laws concerning natural phenomena and methods of studying nature, designing and modeling natural objects, phenomena, and processes, independently applying acquired knowledge, skills, and competencies in personal, professional, and social activities to solve emerging problems.

The main tasks of Natural Science education are:

To instill in students lifelong learning values such as patriotism, active citizenship, initiative, humanism, diligence, mutual respect, and tolerance, to develop skills in students such as communication, creativity, teamwork, media literacy, critical thinking, problem-solving, and decision-making, to impart knowledge about fundamental scientific concepts, theories, and laws, to develop students' research skills, to guide students in preserving their own and others' health and adhering to a healthy lifestyle, to instill in the younger generation the virtues of using the achievements of natural sciences for noble purposes in life and adopting a reasonable attitude towards nature and all its resources, to guide students towards conscious career choices by describing the activities of professionals working in various fields of natural sciences.

Natural Sciences are taught based on a research-based education model. In this model, the student is expected to plan their own activities as a researcher, while the teacher acts as a facilitator—guiding the student towards research and evaluating their activity. This model is aimed at developing scientific literacy in students based on the formation of research skills. This model is used in the education systems of various countries as the 5E model.

The research-based education model is a modern approach to organizing education, consisting of five stages: Engagement (focusing attention on a problem), Exploration (investigation), Explanation (clarification), Elaboration (application), and Evaluation (assessment).

Using the research-based model yields good results when covering topics designed for several hours. Using it for topics designed for one hour reduces the effectiveness of each stage due to time constraints.

#### Stage 1. Engagement.

The goal of Stage 1 is to activate students' prior knowledge, direct attention to the object, scientific phenomenon, or problem under study, spark interest in learning the new topic, and identify common misconceptions in students' knowledge.

Teacher Activity: Encourages students to answer questions; encourages peer discussion; encourages sharing of ideas and thoughts.

Student Activity: Answer questions; engage in peer discussion; share their ideas and thoughts

#### Stage 2. Exploration.

The goal of Stage 2 is to search for answers to questions, observe, conduct experiments, and identify patterns and cause-effect relationships in research results.

Teacher Activity: Invites students to work on research methods and concepts related to the topic; encourages group debates; organizes student activities, listen to them, provides guidance.

Student Activity: Pose scientific question(s) regarding the problem under investigation and predict research results; plan and conduct research; identify patterns and cause-effect relationships in the research results.

#### Stage 3. Explanation.

Stage 3 is implemented by the teacher. The goal of Stage 3 is to ask questions, compare students' answers, and guide them towards understanding the core scientific concepts.

Teacher Activity: Guides students towards the core scientific concepts being studied by asking questions and comparing their answers; describes scientific concepts related to the topic; demonstrating creativity while explaining the topic is appropriate.

Student Activity: Explain scientific concepts based on previously acquired knowledge; using not only verbal but also video, audio, or computer programs is appropriate for effectively assimilating scientific concepts.

#### Stage 4.Elaboration.

The goal of Stage 4 is to help students apply new scientific concepts and skills in a new context using digital and written sources.

Teacher Activity: Ensures interdisciplinary integration to develop students' knowledge and skills; asks questions that help draw conclusions; provides additional evidence establishing interconnections between new and previously acquired knowledge; reinforces the use of scientific terminology; encourages students to apply knowledge in new situations.

Student Activity: Apply and develop acquired knowledge and skills; draw conclusions; establish interconnections between new and previously acquired knowledge and accumulated experience; pose new questions using new scientific terms; apply knowledge to new situations.

#### Stage 5.Evaluation.

The goal of Stage 5 is to determine each student's level of mastery through formative and summative assessment.Assessment is a process focused on gathering evidence about the extent to which learning outcomes have been achieved.

Teacher Activity:Ensures interdisciplinary integration to develop students' knowledge and skills; asks questions that help draw conclusions; provides additional evidence establishing interconnections between new and previously acquired knowledge; reinforces the use of scientific terminology; encourages students to apply knowledge in new situations. \*(Note: This description appears identical to Stage 4 teacher activity in the original. Evaluation typically involves assessing mastery.)

Student Activity:Express their opinions to peers and evaluate their activities; independently evaluate their knowledge and skills based on criteria; identify gaps in their acquired knowledge. Each stage has its specific function and facilitates consistent learning.

#### Pedagogical Approaches:

Constructivist Approach: The student discovers knowledge themselves. STEAM Approach: Solving energy-related issues through the integration of Science, Technology, Engineering, Arts, and Mathematics.

Creative Approach: Students create their own videos, drawings, or slides.Forming initial concepts about energy based on media education is one of the crucial requirements of today's educational process. This not only develops ecological and technological culture in students but also prepares them to understand and solve global problems.In today's context of globalization and digital transformation, forming correct concepts about the rational use of energy resources, their types, and renewable energy sources has become an essential component of modern education.

Particularly, forming initial concepts about energy in primary school students serves to develop their ecological awareness, strengthen scientific thinking, and increase their sense of responsibility towards the environment. From this perspective, effectively conveying initial knowledge about energy to students using media education opportunities holds significant importance as a modern pedagogical approach. First and foremost, it is necessary to form a general understanding among students about the importance of energy in our lives.

Explaining that household appliances, electric lights, and vehicles operate thanks to energy, using examples from daily life, makes the topic relatable and interesting for students. Subsequently, it is recommended to explain natural energy sources (sun, wind, water, biomass) and how they are utilized through simple experiments.In media education, gamified approaches such as virtual journeys to find energy sources, interactive quizzes, and role-playing games can increase students' interest in the topic.

Engaging students in independent exploration through multimedia lessons available on digital platforms and involving them in small group work also yields positive results. Furthermore, organizing problem-based questions and small project tasks can develop students' critical thinking. For example: "What would our life be like without electricity?", "How can we save energy?" Such questions prompt them to think and solve problems.

**In conclusion**, forming initial concepts about energy through media education can shape students' ecological culture, habits of energy conservation, and perspectives conducive to sustainable development in the future. If teachers organize modern, interactive, practice-oriented lessons using media education tools, this will contribute not only to knowledge acquisition but also to the formation of a conscious civic stance.

#### References:

1. Toshtemirowa M. Issues of educating future primary school teachers in fostering a reasonable attitude towards the environment in students based on an educational approach - Scientific Bulletin of Tashkent State Pedagogical University, Scientific-Theoretical Journal – 2020. No. 11 – P. 105-111.
2. Umaraliyeva M.T. Modern approaches to teaching Natural Sciences. Materials of the International Scientific-Practical Conference "Strategies for Developing the Methodological Skills of Future Teachers Based on a Cognitive Approach: Problems, Solutions" - October 30-31, 2024. – P.480-483.  
3. Xaliyarov J.X., Raupova S.A., Muratova G.B. Using media education resources to form initial concepts about energy for primary school students. – Proceedings of the scientific and practical conference on the topic "Prospects for developing scientific literacy in students and organizing the study of the digital world" Termez. October 15 2024. –P.284-287.
3. Kurbanova D. Problems and solutions in the field of education - Public education: problems, research, solutions. – 2021 – P.69-73.  
5. Usmonxo'jayev M. Problems of forming aesthetic culture in the person of a teacher. – Termez: 2017. –P.164.  
5. Usmonxo'jayev M. Problems of forming aesthetic culture in the personality of a teacher.- P.164.