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Kuzmenko Olha Stepanivna
orcid.org/0000-0003-4514-3032
e-mail: Kuzimenko12@gmail.com,
D. Sc. in Pedagogy, Associate Professor, Professor of the Department of Physics and Mathematics Disciplines, Flight Academy of the National Aviation University, Ukraine
Senior Researcher of the Department of Information and Didactic modelling of the Junior Academy of Sciences of Ukraine, Ukraine

FORMATION OF SCIENTIFIC THINKING OF EDUCATORS IN THE PROCESS OF TEACHING PHYSICS AND PROFESSIONALLY ORIENTED DISCIPLINES BASED ON STEM TECHNOLOGY TECHNOLOGY

Under martial law, the priority of state policy is to improve the quality of education and competitiveness of higher education in Ukraine, as well as to promote the integration of university education and science, and accelerate the process of integration into the international educational space.

The new paradigm of education requires significant changes in the system of higher technical education using STEM technologies (in the process of studying physics and professionally-oriented disciplines) to provide quality training, able to think critically and act in difficult professional situations, make responsible and constructive decisions, develop identify problems in different fields of knowledge. Currently, modernization of higher education at all its structural levels is required: development of industry standards; training programs; curricula; forms and methods of teaching; control and evaluation of student's academic achievements, which requires the adoption of a European system of evaluation of learning outcomes – competencies. Transdisciplinary, systems approaches and fundamental aspects of physics and vocational training [1] should be introduced in the training of future pilots, controllers and aircraft service engineers with soft-skills that allow you to operate effectively at different levels of professional activity and take into account the peculiarities of martial law. The expediency of interdisciplinary integration in the purposeful development of thinking in learning is confirmed by the research of S. Rubinstein, who noted that: «the object in the process of thinking is included in all new connections, and therefore; from the

object, thus, as if all new content is exhausted; he seems to turn the other way every time, all new qualities are revealed in him».

As the student in the process of systematic learning begins to master a set of knowledge, albeit elementary, but built in the form of a system, then his thinking inevitably begins to rebuild [2]. When considering problem-solving as a mental process, it is very important to keep in mind that the solution of the problem depends on the level of development of the student's thinking and his attitude to the activities carried out. Therefore, the formation of natural science thinking of students by using educational cognitive tasks in physics allowed us to identify two dialectically related areas: 1) development of integrated approaches to the formation of natural science thinking of high school students through the actualization of common thinking, formation and transfer of interdisciplinary skills disciplines of the natural science cycle (logical, divergent, creative, etc.); actualization of applied application of general scientific and natural-scientific methods of cognition (observation, experiment, theory, modelling, method of hypotheses, etc.); 2) the use of certain integrated approaches for setting and solving multilevel cognitive learning tasks to individualize learning.

Taking into account the above, we highlight the general ways and means of developing the style of scientific thinking in the process of solving problems: 1) the development of reflective thinking; 2) adjustment of common sense; 3) acquaintance of students with the characteristics of the modern style of scientific thinking; 4) equipping students with knowledge of methodological principles of the style of scientific thinking; 5) organizational and didactic support for the formation of the style of scientific thinking in students.

References

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