



**The Importance of Acmeological Approach in Developing the
Methodological Competence of Teaching Natural Sciences of Future
Primary Class Teachers on the Base of Steam Education**

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Abstract: *In this article, based on the acmeological approach, the directions, mechanisms, conditions and possibilities of development of pedagogical creativity in the development of methodological competence of future elementary teachers in natural sciences are described.*

Keywords: *STEM/STEAM education, PISA, TIMSS, natural sciences, integration, "Acmeology", acmeological approach, pedagogical creativity, professionalism, communicative, creativity, creative, perceptive skills.*

Teachers have the greatest responsibility for setting the new generation on the right path. The main link on this path is future primary school teachers. Based on the tasks of raising the quality of education to a new level, it is necessary to direct students to the knowledge of STEAM education from the primary grade. In this case, it is necessary to meaningfully organize the "Natural Science" lessons included in the primary school curriculum based on the STEAM approach. "Natural sciences" includes biology, geography, physics, chemistry and ensures their interrelationship.

Educational subjects that are part of the science are important in the formation of natural-scientific, technical and environmental literacy and development of critical thinking in students. The mutual integration of sciences creates the basis for students' understanding of nature as a whole, and the formation of a single natural-scientific view of the world in their thinking. At the same time, interdisciplinary integration is aimed at forming students' understanding of the opportunities and problems of modern scientific and technical development, the nature of environmental problems, the ways of rational use of nature, the principles of following a healthy lifestyle and using them in everyday life.

Based on STEAM education, acquired by students in the field of natural sciences a lesson in demonstrating the relevance of knowledge, skills and abilities to everyday life and conducting educational research and experiments in extracurricular activities. It is aimed at training their creativity in performing, designing, and developing their interest in creating news.

International expert on STEAM education DeJarnette. N. K. believes that the main difference between STEM and STEAM is that STEM education refers to a modern approach to science and related subjects that focus on solving problems through critical thinking and analytical skills. STEAM education approaches the same subjects but with creative thinking and applied arts. So, to find the best solution to a problem, we can refer to both hemispheres of the brain - the analytical and the creative hemisphere. Encourages the child to think practically, creatively and analytically, to try different options until success. STEAM also empowers educators to engage in project-based learning that spans all five disciplines and promotes an inclusive learning environment in which all students can participate and contribute.

To form students' logical thinking and practical skills corresponding to the requirements of the oriented international assessment program (PISA, TIMSS).

One of the main tasks of the teacher is to inculcate in the minds of the young generation practical exercises, laboratory work, and work with practical tasks that encourage independent performance and creative, creative thinking. In performing these tasks, the future elementary school teachers should have a deep understanding of the structure of the content of the newly introduced "Natural Science" textbook in general education schools, and through practical training and project work, they should be able to awaken in students research, inventiveness, critical thinking, and internal motivation to study the natural environment.

Must Therefore, on the basis of STEAM education, it is a matter of priority to develop future elementary school teachers into skilled personnel who possess modern knowledge, master information technologies, think creatively, have high knowledge, and in a word, become akmeshaks. one of our tasks. One of these mechanisms is the development of human resources, the search for new ways of their rational use, that is, one of the most important solutions is the introduction of socio-ethical problems of acmeology into scientific circulation. Therefore, the need for acmeology as a science that studies the ideas of creating high technologies, not only traditional production, but also the socio-ethical activities of a person, is particularly felt.

At this point, let's pay attention to the dictionary meaning of the concept of "Acmeology". Acmeology comes from the Greek word akme - peak, perfection, height, maturity - and logos means science. The Greeks called "acme" all signs of maturity, which serve to show all aspects of a person's abilities and possibilities. In a word, acmeology is a new science that emerged at the "junction" of natural, social, theoretical and humanitarian sciences that studies the development of a person at the stage of maturity, especially the mechanisms and laws of reaching the highest level of this development. Its main task is determined by the manifestation of knowledge, practical skills, qualifications and technologies acquired by a person in the chosen profession.

The term acmeology was coined in 1928 by the Russian psychologist N.A. Although it was introduced into scientific circulation for the first time by Rybnikov, it was formed by V.G. Anan'ev and developed by A.A. Bodalyov. The scientific research of the representative of modern acmeology, Russian psychologist, academician A.A. Derkach, raised this science to the institutional level. Researchers in the field of acmeology are psychologists, pedagogues and philosophers B.B. Barsis, I.A. Bupalov, G.P. Verbitskaya, L.E. Elshina, S.E. Zakovyashina, Y.P. Kostenko, N.V. Kurbet, N.V. Kozlova, Y.A.Likhacheva, O.V.Mikhaylov, K.V.Petrov, V.N.Sofma, V.A.Semikov, I.N.Stepanova, O.V.Faller study and analyze acmeform from a psychological point of view, create optimal technologies for the development of creative professional skills and professionalism, with various professional activities put forward a proposal to create an institutional form of achieving new achievements on the basis of conducting complex investigations on the work process and methods of engaged specialists.

Also, international studies on the use of theoretical and practical issues of acmeology Liverpool Hope University (England), Maastricht University (Netherlands), Nebraska University (USA), Mara Technology University (Malaysia), Belfield Pedagogical University (Germany), Fatih University (Turkey), University of Waterloo Ontario (Canada), Mangalayatan University (India) and Russian State Vocational and Pedagogical University, acmeological sciences of the Russian State Academy of Education are conducted at the acmeological research center of the international academy (Russia) Subjective and objective factors of the concept of "Acme" there is. These factors are studied as criteria that lead to high professionalism and a long creative life of a specialist. That is, this concept deals with researching the level of an individual's achievement of the highest, highest results in his work, the objective and subjective factors of reaching the stage of excellence in professional development, his achievement and development in his studies, his achievement of a high level in his work, in the educational process. learns So, acmeology creates a new direction to achieve excellence in any activity and methods of determining the levels of effective systems aimed at a high level of success of professionalism.

In the educational process, the acmeological approach is directed to the formation of professional and other personal qualities of future teachers, which allows further development of their intellectual potential and professional abilities. Today's audience and student contingent require teachers working in higher education institutions to actively use innovative ideas and technologies in the educational process, to organize the pedagogical process based on new pedagogical forms and methods. Therefore, unprofessionalism in the field of education leads to great losses and increasing problems. "It is important to work on yourself and develop yourself in order to acquire professional and acmeological competence. Self-development tasks are determined by self-analysis and evaluation. Work on oneself is determined by the pedagogue's organization of practical actions in order to consistently develop his knowledge, skills and abilities, as well as personal qualities. Self-care is manifested in:

- ✓ critical and creative approach to activity;
- ✓ achieving professional and creative cooperation;
- ✓ development of business skills;
- ✓ mastering positive qualities;
- ✓ eliminating negative habits.

Therefore, continuous work on oneself leads to professional maturity, i.e. professionalism, of future specialists.

"Professionalism" is one of the main categories of acmeology and is understood as the ability to competently perform the knowledge acquired during study and work. Professionalism means a high level of training in the performance of professional tasks, and a professional means a person who is fully adapted to his profession. As we noted above, professionalization from the acmeological point of view requires the acquisition of personal autopsychological abilities. The development of professional creativity is related to the reflection of various abilities. Acmeological abilities, i.e., self-awareness, self-development, etc., are important in the course of human life, but their rapid formation occurs as a result of the development of autopsychological competence.

Based on the acmeological approach, it is possible to show creativity as a component as the central link of the model of formation of pedagogical creativity in future teachers. Of course, pedagogical creativity is a factor of development of professionalism.

The components of the formation of pedagogical creativity are described as follows:

Motivational and valuable

- ✓ the presence of a stable internal need to harmonize knowledge and professional motivation;
- ✓ striving for productive activity;
- ✓ enthusiasm for active participation in the processes of professional activity;
- ✓ the need for self-expression.

Cognitive

- ✓ the level and quality of new professional knowledge, the level of regular familiarization with information about the profession;
- ✓ willingness to pay attention to highly responsible work;
- ✓ originality of thinking;
- ✓ professional culture;
- ✓ acquisition of scientific, educational and production-related information related to the profession.

Active

- ✓ acquisition of professional skills and qualifications;

- ✓ to identify today's available opportunities and future prospects for creative development;
- ✓ stabilization of personal and professional relationships in the team when solving creative tasks.

Creativity

- ✓ ability to creative thinking, creative educational, educational, research activities;
- ✓ the desire to create something new, to solve pedagogical tasks rationally, to be able to design one's own activities independently.

In the interpretation of N.V. Kuzmina, the teacher's professionalism is a qualitative description given to the subject of this activity, and it is explained depending on the degree to which he uses modern opportunities to solve the tasks related to his profession. The degree of use of these opportunities is different for different people, so the professionalism of one or another profession can be high, medium and low. The professionalism of the teacher is determined by the degree to which he mastered the art of forming the readiness of the students to perform the task effectively in the time allocated to the educational process. A psychological-pedagogical approach can be distinguished in the analysis of the problem of competence in pedagogical activities. It can be seen from the above points that professionalism is defined by a person's meeting the requirements of one or another field and raising it to a higher level. The development of the teacher's professionalism depends on such characteristics as communicativeness, creativity, creative, perceptive abilities, as well as personal dynamism (the ability to exert voluntary influence and logical persuasion), emotional endurance and confidence in the future, which are the leading abilities of a person.

In conclusion, the state policy in the field of higher education is aimed at achieving the effectiveness of education. This implies abandoning the old approaches and rapidly applying innovative educational technologies to the process of developing the methodological competence of future elementary school teachers based on STEAM educat.

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